

**NORMA Oficial Mexicana NOM-041-NUCL-2013, Límites anuales de incorporación y concentraciones en liberaciones.**

Al margen un sello con el Escudo Nacional, que dice: Estados Unidos Mexicanos.- Secretaría de Energía.

NORMA OFICIAL MEXICANA NOM-041-NUCL-2013, LÍMITES ANUALES DE INCORPORACIÓN Y CONCENTRACIONES EN LIBERACIONES.

La Secretaría de Energía, por conducto de la Comisión Nacional de Seguridad Nuclear y Salvaguardias, con fundamento en los artículos 17 y 33 fracción XIII de la Ley Orgánica de la Administración Pública Federal; 1, 4, 18 fracción III, y 50 fracciones I y XI de la Ley Reglamentaria del Artículo 27 Constitucional en Materia Nuclear; 1, 38 fracciones II y III, 40 fracciones I y XVII, 41, 43, 47 fracción IV y 51 de la Ley Federal sobre Metrología y Normalización; 28 y 34 del Reglamento de la Ley Federal sobre Metrología y Normalización; 1, 2, 3, 4, 7, 14, 20, 25, 37, 39, 130, 131, 211, 212 y 213 del Reglamento General de Seguridad Radiológica, y 2 inciso F, fracción II, 27 y 29 fracciones VIII y XII del Reglamento Interior de la Secretaría de Energía, y

**CONSIDERANDO**

**Primero.** Que con fecha 8 de octubre de 2012, el Comité Consultivo Nacional de Normalización de Seguridad Nuclear y Salvaguardias, publicó en el Diario Oficial de la Federación el Proyecto de modificación a la Norma Oficial Mexicana NOM-006-NUCL-1994, Criterios para la aplicación de los límites anuales de incorporación para grupos críticos del público, a efecto de recibir comentarios de los interesados.

**Segundo.** Que transcurrido el plazo de 60 días a que se refiere el artículo 47 fracción I de la Ley Federal sobre Metrología y Normalización para recibir los comentarios mencionados en el considerando anterior, el Comité Consultivo Nacional de Normalización de Seguridad Nuclear y Salvaguardias analizó los comentarios recibidos y, en los casos que estimó procedente, realizó las modificaciones al proyecto en cita.

**Tercero.** Que con fecha 26 de marzo de 2013, se publicaron en el Diario Oficial de la Federación las respuestas a los comentarios antes referidos, en cumplimiento a lo previsto por el artículo 47 fracción III de la Ley Federal sobre Metrología y Normalización.

**Cuarto.** Que en atención a lo expuesto en los considerandos anteriores y toda vez que el Comité Consultivo Nacional de Normalización de Seguridad Nuclear y Salvaguardias otorgó la aprobación respectiva, se expide la siguiente:

**NORMA OFICIAL MEXICANA NOM-041-NUCL-2013, LÍMITES ANUALES DE INCORPORACIÓN Y CONCENTRACIONES EN LIBERACIONES****PREFACIO**

En la elaboración de la presente Norma Oficial Mexicana, participaron representantes de las siguientes dependencias, instituciones, asociaciones y empresas:

**SECRETARÍA DE ENERGÍA.**

- Dirección General de Recursos Energéticos y Radiactivos.
- Unidad de Asuntos Jurídicos / Dirección de Estudios y Consultas.

**SECRETARÍA DE SALUD.**

- Comisión Federal para la Protección contra Riesgos Sanitarios.

**SECRETARÍA DE SALUD**

- Instituto Nacional de Enfermedades Respiratorias, Ismael Cosío Villegas.

**SECRETARÍA DE GOBERNACIÓN.**

- Dirección General de Protección Civil.

**SECRETARÍA DE COMUNICACIONES Y TRANSPORTE.**

- Dirección General de Autotransporte Federal.

SECRETARÍA DEL MEDIO AMBIENTE Y RECURSOS NATURALES.

- Dirección General de Gestión Integral de Materiales y Actividades Riesgosas.

SECRETARÍA DEL TRABAJO Y PREVISIÓN SOCIAL.

- Dirección General de Seguridad y Salud en el Trabajo.

COMISIÓN FEDERAL DE ELECTRICIDAD.

- Gerencia de Centrales Nucleoeléctricas.

INSTITUTO NACIONAL DE INVESTIGACIONES NUCLEARES.

INSTITUTO DE SEGURIDAD Y SERVICIOS SOCIALES DE LOS TRABAJADORES DEL ESTADO.

- Hospital Regional Lic. Adolfo López Mateos.

ASOCIACIÓN MEXICANA DE EMPRESAS DE ENSAYOS NO DESTRUCTIVOS, A.C.

ASOCIACIÓN MEXICANA DE FÍSICA MÉDICA, A.C.

SOCIEDAD MEXICANA DE MEDICINA NUCLEAR, A.C.

SOCIEDAD MEXICANA DE RADIOTERAPEUTAS, A.C.

SOCIEDAD MEXICANA DE SEGURIDAD RADIOLÓGICA, A.C.

SOCIEDAD NUCLEAR MEXICANA, A.C.

ACCESOFARM, S.A. DE C.V.

CONTROL DE RADIACIONES E INGENIERÍA, S.A. DE C.V.

PROVEDEREM COMYSER, S.A. DE C.V.

SERVICIOS DE APLICACIÓN INTEGRAL, S.A. DE C.V.

SERVICIOS INTEGRALES PARA LA RADIACIÓN, S.A. DE C.V.

SERVICIOS A LA INDUSTRIA NUCLEAR Y CONVENCIONAL (SEINCO)

## **NOM-041-NUCL-2013, LÍMITES ANUALES DE INCORPORACIÓN Y CONCENTRACIONES EN LIBERACIONES**

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- 0. Introducción**

Durante la operación normal de instalaciones nucleares y radiactivas que utilizan fuentes radiactivas abiertas (líquidos, vapores, polvos, etc.), el personal ocupacionalmente expuesto puede verse expuesto a contaminación radiactiva tanto de forma interna (por inhalación, absorción, ingestión o a través de heridas) como externa; por otro lado, en las referidas instalaciones se permite el vertimiento al drenaje de cantidades residuales del material radiactivo utilizado. Por lo anterior, la presente norma establece los límites de actividad incorporada y los límites para la concentración de cada radionúclido en el ambiente laboral, así como los límites derivados para la incorporación de material radiactivo por individuos del público.

### **1. Objetivo**

Establecer los Límites Anuales de Incorporación para el personal ocupacionalmente expuesto y las Concentraciones Derivadas en Aire para zonas controladas, con el fin de dar cumplimiento al sistema de limitación de dosis establecido en el Reglamento General de Seguridad Radiológica; establecer los límites derivados para las liberaciones de cantidades residuales de material radiactivo de las instalaciones radiactivas y nucleares, así como limitar el equivalente de dosis debido a la incorporación de material radiactivo en un grupo crítico.

### **2. Campo de aplicación**

Los Límites Anuales de Incorporación y las Concentraciones Derivadas en Aire, establecidas en esta norma, deben adoptarse para cumplir con el sistema de limitación de dosis para el personal ocupacionalmente expuesto de instalaciones nucleares y radiactivas en las que exista el riesgo de exposiciones internas. Los límites derivados establecidos en esta norma son aplicables a situaciones en las que existen vertimientos de cantidades residuales de materiales radiactivos dispersables, con motivo de la operación normal de las instalaciones nucleares y radiactivas que los utilizan.

### **3. Referencias**

**3.1** Norma Oficial Mexicana NOM-001-NUCL-1994, Factores para el cálculo del equivalente de dosis.

### **4. Definiciones**

**4.1** Concentración Derivada en Aire (CDA): Es la concentración de un radionúclido en aire, expresada en unidades de actividad por cada unidad de volumen de aire ( $\text{Bq/m}^3$ ), tal que la estancia del hombre de referencia en un ambiente ocupacional con dicha concentración, respirando bajo un régimen de esfuerzo físico ligero ( $1.2 \text{ m}^3/\text{h}$ ), durante un año laboral de 2000 horas, resultaría en la inhalación del límite anual de incorporación para dicho radionúclido.

**4.2** Clase D: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, menor a 10 días.

**4.3** Clase W: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, de 10 a 100 días.

**4.4** Clase Y: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, mayor a 100 días.

**4.5** Equivalente de dosis comprometido: Es el equivalente de dosis que se imparte a un tejido en forma integrada durante el periodo de 50 años que sigue a la incorporación de un radionúclido en el cuerpo. Se denota mediante:  $H_{50,T}$ . La unidad de equivalente de dosis comprometido es el sievert (Sv).

**4.6** Equivalente de dosis efectivo comprometido: Es el equivalente de dosis que se imparte a un individuo en forma integrada durante el periodo de 50 años que sigue a la incorporación de un radionúclido en su cuerpo. Se denota mediante  $H_{E,50}$  y se obtiene a través de la ecuación:

$$H_{E,50} = \sum_T W_T H_{50,T}$$

donde  $H_{50,T}$  son los equivalentes de dosis comprometidos por tejido y  $W_T$  son los factores de ponderación por tejido, establecidos en la norma NOM-001-NUCL-1994 vigente o la que la sustituya.

**4.7** Grupo crítico: Es el conjunto de individuos del público que reciben el equivalente de dosis más alto, considerando una exposición razonablemente homogénea, con motivo de la operación normal de una determinada instalación radiactiva o nuclear.

**4.8** Hombre de referencia: Es un adulto hipotético con una edad entre 20 y 30 años, peso de 70 kg y 1.70 m de altura.

**4.9 Límite Anual de Incorporación (LAI):** Es la cantidad de un radionúclido, expresada en términos de su actividad, tal que incorporada en el hombre de referencia en el transcurso de un año, se traduciría ya sea en un equivalente de dosis efectivo comprometido de 50 mSv, o bien en un equivalente de dosis comprometido de 500 mSv a un órgano o tejido. De las actividades que para un radionúclido cumplan con dichas condiciones, se elige el valor más pequeño como límite anual de incorporación.

**4.10 Límite derivado:** Límite de una magnitud establecido sobre la base de un modelo, de tal forma que puede considerarse que el cumplimiento del límite derivado asegura el cumplimiento del límite primario.

**4.11 Miembro del público:** Cualquier persona de la población, que con motivo de su ocupación no esté expuesto a radiación ionizante o a incorporación de material radiactivo. Las personas no ocupacionalmente expuestas, que laboren en la proximidad de zonas controladas, o que ocasionalmente en el curso de su trabajo entren en una zona controlada, son considerados como individuos del público.

**4.12 Zona controlada:** Es la zona sujeta a supervisión y controles especiales con fines de protección radiológica.

## 5. Abreviaturas

|             |              |                                             |
|-------------|--------------|---------------------------------------------|
| <b>5.1</b>  | Bq:          | becquerel.                                  |
| <b>5.2</b>  | CDA:         | concentración derivada en aire.             |
| <b>5.3</b>  | Estom:       | estómago.                                   |
| <b>5.4</b>  | $H_{50,T}$ : | equivalente de dosis comprometido.          |
| <b>5.5</b>  | $H_{E,50}$ : | equivalente de dosis efectivo comprometido. |
| <b>5.6</b>  | IGI:         | intestino grueso inferior.                  |
| <b>5.7</b>  | LAI:         | límite anual de incorporación.              |
| <b>5.8</b>  | sup.:        | superficie.                                 |
| <b>5.9</b>  | Sv:          | sievert.                                    |
| <b>5.10</b> | $W_T$ :      | factor de ponderación por tejido.           |

## 6. Criterios

**6.1** En la Tabla 1 se establecen los Límites Anuales de Incorporación (LAI) en Bq, y las Concentraciones Derivadas en Aire (CDA) en  $Bq/m^3$ ; para cada radionúclido se especifica la vía de entrada al organismo (ingestión o inhalación) y se indica para qué clases de compuesto se aplican los valores.

**6.2** Los valores de LAI mostrados entre paréntesis, corresponden al valor de incorporación anual que resultaría en un equivalente de dosis comprometida de 500 mSv, indicándose el órgano o tejido implicados.

**6.3** Los valores de los LAI son aplicables al control dosimétrico del Personal Ocupacionalmente Expuesto (POE), y los de las CDA aplicables a las respectivas zonas controladas en las instalaciones donde existe riesgo de incorporación de radionúclidos y exposición interna para dicho personal.

**6.4** Los valores de CDA y LAI establecidos en las tablas no son de aplicación en los siguientes casos: cuando el trabajador ingiera e inhale al mismo tiempo el radionúclido en cuestión, cuando esté expuesto a una mezcla de radionúclidos, ya sea por inhalación o ingestión, o bien, cuando esté expuesto a irradiación externa e interna a la vez. En este caso, se evaluará la dosis adicionando las contribuciones de dosis por todas las vías.

**6.5** Las concentraciones promedio de material radiactivo: a) en aire; b) en cuerpos de agua adyacentes, y c) en líquidos, previamente a su vertimiento hacia el drenaje, en la frontera de la zona controlada de instalaciones en las que se manejen radionúclidos individuales en la forma de fuentes radiactivas abiertas, nunca deben ser mayores a los valores establecidos en las columnas 4, 5 y 6, respectivamente, de la Tabla 1.

Las concentraciones referidas en los incisos a), b) y c) anteriores, en la frontera de la zona controlada de instalaciones en las que se manejen mezclas de radionúclidos, deben cumplir con la siguiente relación:

$$\sum_i \frac{C_i}{L_i} < 1$$

Donde:

$C_i$  es la concentración del i-ésimo radionúclido, y

$L_i$  es el correspondiente valor límite (de la Tabla 1) para el mismo radionúclido.

**6.6** Los valores de las columnas 4 y 5 establecidos en la Tabla 1 son las concentraciones promedio de radionúclidos las cuales, si se inhalan o ingieren continuamente durante un año, producirán un equivalente de dosis total de 0.5 mSv al grupo crítico.

Los valores de la columna 6 son las concentraciones de efluente liberado al drenaje tal que si éste fuera la única fuente de agua ingerida por una persona durante un año, resultaría en un equivalente de dosis comprometida de 5 mSv.

**6.7** En relación con los vertimientos hacia el drenaje, además de lo establecido en 6.5, 6.6, y 6.8 a ese respecto, los totales vertidos en un año nunca deben exceder los siguientes valores:

$^3\text{H}$ : 185 GBq

$^{14}\text{C}$ : 37 GBq

y para el resto de los radionúclidos combinados: 37 GBq

**6.8** El material a liberar al drenaje debe ser fácilmente soluble en agua. La cantidad de material radiactivo liberado al drenaje en un mes, dividido entre el volumen mensual promedio liberado al drenaje, no excederá la concentración dada en la columna 6 de la Tabla 1.

**6.9** Cumplimiento con los límites de equivalente de dosis para el grupo crítico.

**6.9.1** Si el permisionario permite el acceso de miembros del público a zonas controladas, se seguirán aplicando los límites de equivalente de dosis para público.

**6.9.2** El permisionario puede solicitar la autorización de límites de descarga mayores a los establecidos en la tabla 1, para ello debe demostrar que éstos cumplen con el límite de equivalente de dosis anual para el grupo crítico utilizado para la obtención de los valores de la tabla 1, que es de 0.5 mSv/año, o en su defecto debe cumplir con los límites derivados de la Tabla 1 para ello puede realizar lo siguiente:

**6.9.2.1** Un análisis del equivalente de dosis que recibirá el grupo crítico, aplicando un modelo genérico ambiental a la instalación radiactiva o nuclear, utilizando los factores de dispersión de material radiactivo en el ambiente obtenidos con las condiciones meteorológicas del sitio y la metodología de cálculo necesaria, y estableciendo las rutas de incorporación y exposición, de acuerdo con los hábitos de consumo y actividades del grupo crítico, o

**6.9.2.2** Demostrando que la concentración anual promedio de material radiactivo liberado en liberaciones líquidas a cuerpos de agua adyacentes, y gaseosos a la frontera de la zona controlada no excede los valores especificados en la Tabla 1; y que si un miembro del grupo crítico estuviera presente continuamente en la frontera de la zona controlada, la dosis por fuentes externas no excedería de 0.02 mSv/h o 0.5 mSv/año.

**6.10** Los registros de las liberaciones gaseosas y líquidas de material radiactivo de las instalaciones radiactivas y nucleares deben contener:

**6.10.1** La composición isotópica del efluente.

**6.10.2** La forma química y física de los radionúclidos, particularmente si ésta es relevante desde el punto de vista de su comportamiento ambiental o metabólico;

**6.10.3** Los puntos y vías de descarga;

**6.10.4** La cantidad total, mensual y anual, de radionúclido descargado, incluyendo la concentración en el efluente liberado.

**6.10.5** Demostración del cumplimiento del punto 6.9.2.

**Tabla 1.** Límites ocupacionales y concentraciones en liberaciones.

| No. Atómico | Radionúclido              | Clase                                                  | LAI Ingestión (Bq) Col. 1                                    | LAI Inhalación (Bq) Col. 2                                   | CDA Inhalación (Bq/m <sup>3</sup> ) Col. 3 | Efluente Aire (Bq/m <sup>3</sup> ) Col. 4 | Efluente Agua (Bq/m <sup>3</sup> ) Col. 5 | Concentraciones promedio mensuales (Bq/m <sup>3</sup> ) Col. 6 |
|-------------|---------------------------|--------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------------------------------|
| 89          | Actinio-224               | D, todos los compuestos excepto los señalados en W y Y | 7.40x10 <sup>7</sup><br>Pared IGI<br>(7.40x10 <sup>7</sup> ) | 1.11x10 <sup>6</sup><br>Sup. ósea<br>(1.48x10 <sup>6</sup> ) | 3.70x10 <sup>2</sup><br>-                  | -<br>1.85                                 | -<br>1.11x10 <sup>6</sup>                 | -<br>1.11x10 <sup>7</sup>                                      |
|             |                           | W, haluros y nitratos                                  | -                                                            | 1.85x10 <sup>6</sup>                                         | 7.40x10 <sup>2</sup>                       | 2.59                                      | -                                         | -                                                              |
|             |                           | Y, óxidos e hidróxidos                                 | -                                                            | 1.85x10 <sup>6</sup>                                         | 7.40x10 <sup>2</sup>                       | 2.22                                      | -                                         | -                                                              |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 89          | Actinio-225               | D, ver <sup>224</sup> Ac                               | 1.85x10 <sup>6</sup><br>Pared IGI<br>(1.85x10 <sup>6</sup> ) | 1.11x10 <sup>4</sup><br>Sup. ósea<br>(1.85x10 <sup>4</sup> ) | 3.70<br>-                                  | -<br>2.59x10 <sup>-2</sup>                | -<br>2.59x10 <sup>4</sup>                 | -<br>2.59x10 <sup>5</sup>                                      |
|             |                           | W, ver <sup>224</sup> Ac                               | -                                                            | 2.22x10 <sup>4</sup>                                         | 1.11x10 <sup>1</sup>                       | 3.33x10 <sup>-2</sup>                     | -                                         | -                                                              |
|             |                           | Y, ver <sup>224</sup> Ac                               | -                                                            | 2.22x10 <sup>4</sup>                                         | 1.11x10 <sup>1</sup>                       | 3.33x10 <sup>-2</sup>                     | -                                         | -                                                              |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 89          | Actinio-226               | D, ver <sup>224</sup> Ac                               | 3.70x10 <sup>6</sup><br>Pared IGI<br>(3.70x10 <sup>6</sup> ) | 1.11x10 <sup>5</sup><br>Sup. ósea<br>(1.48x10 <sup>5</sup> ) | 3.70x10 <sup>1</sup><br>-                  | -<br>1.85x10 <sup>-1</sup>                | -<br>7.40x10 <sup>4</sup>                 | -<br>7.40x10 <sup>5</sup>                                      |
|             |                           | W, ver <sup>224</sup> Ac                               | -                                                            | 1.85x10 <sup>5</sup>                                         | 7.40x10 <sup>1</sup>                       | 2.59x10 <sup>-1</sup>                     | -                                         | -                                                              |
|             |                           | Y, ver <sup>224</sup> Ac                               | -                                                            | 1.85x10 <sup>5</sup>                                         | 7.40x10 <sup>1</sup>                       | 2.22x10 <sup>1</sup>                      | -                                         | -                                                              |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 89          | Actinio-227               | D, ver <sup>224</sup> Ac                               | 7.40x10 <sup>3</sup><br>Sup. ósea<br>(1.48x10 <sup>4</sup> ) | 1.48x10 <sup>1</sup><br>Sup. ósea<br>(2.96x10 <sup>1</sup> ) | 7.40x10 <sup>-3</sup><br>-                 | -<br>3.70x10 <sup>-5</sup>                | -<br>1.85x10 <sup>2</sup>                 | -<br>1.85x10 <sup>3</sup>                                      |
|             |                           | W, ver <sup>224</sup> Ac                               | -                                                            | 7.40x10 <sup>1</sup><br>Sup. ósea<br>(1.11x10 <sup>2</sup> ) | 2.59x10 <sup>-2</sup><br>-                 | -<br>1.48x10 <sup>-4</sup>                | -<br>-                                    | -<br>-                                                         |
|             |                           | Y, ver <sup>224</sup> Ac                               | -                                                            | 1.48x10 <sup>2</sup>                                         | 7.40x10 <sup>-2</sup>                      | 2.22x10 <sup>-4</sup>                     | -                                         | -                                                              |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 89          | Actinio-228               | D, ver <sup>224</sup> Ac                               | 7.40x10 <sup>7</sup><br>-                                    | 3.33x10 <sup>5</sup><br>Sup. ósea<br>(7.40x10 <sup>5</sup> ) | 1.48x10 <sup>2</sup><br>-                  | -<br>7.40x10 <sup>-1</sup>                | 1.11x10 <sup>6</sup><br>-                 | 1.11x10 <sup>7</sup><br>-                                      |
|             |                           | W, ver <sup>224</sup> Ac                               | -                                                            | 1.48x10 <sup>6</sup><br>Sup. ósea<br>(2.22x10 <sup>6</sup> ) | 7.40x10 <sup>2</sup><br>-                  | -<br>2.96                                 | -<br>-                                    | -<br>-                                                         |
|             |                           | Y, ver <sup>224</sup> Ac                               | -                                                            | 1.48x10 <sup>6</sup>                                         | 7.40x10 <sup>2</sup>                       | 2.22                                      | -                                         | -                                                              |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 13          | Aluminio-26               | D, todos los compuestos excepto los señalados en W     | 1.48x10 <sup>7</sup>                                         | 2.22x10 <sup>6</sup>                                         | 1.11x10 <sup>3</sup>                       | 3.33                                      | 2.22x10 <sup>5</sup>                      | 2.22x10 <sup>6</sup>                                           |
|             |                           | W, óxidos, hidróxidos, carburos, haluros y nitratos    | -                                                            | 3.33x10 <sup>6</sup>                                         | 1.48x10 <sup>3</sup>                       | 3.70                                      | -                                         | -                                                              |
| 95          | Americio-237 <sup>2</sup> | W, todos los compuestos                                | 2.96x10 <sup>9</sup>                                         | 1.11x10 <sup>10</sup>                                        | 3.70x10 <sup>6</sup>                       | 1.48x10 <sup>4</sup>                      | 3.70x10 <sup>7</sup>                      | 3.70x10 <sup>8</sup>                                           |
| 95          | Americio-238 <sup>2</sup> | W, todos los compuestos                                | 1.48x10 <sup>9</sup><br>-                                    | 1.11x10 <sup>8</sup><br>Sup. ósea<br>(2.22x10 <sup>8</sup> ) | 3.70x10 <sup>4</sup><br>-                  | -<br>3.33x10 <sup>2</sup>                 | 1.85x10 <sup>7</sup><br>-                 | 1.85x10 <sup>8</sup><br>-                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 95          | Americio-239              | W, todos los compuestos                                | 1.85x10 <sup>8</sup>                                         | 3.7x10 <sup>8</sup>                                          | 1.85x10 <sup>5</sup>                       | 7.4x10 <sup>2</sup>                       | 2.95x10 <sup>6</sup>                      | 2.59x10 <sup>7</sup>                                           |
| 95          | Americio-240              | W, todos los compuestos                                | 7.40x10 <sup>7</sup>                                         | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                       | 1.48x10 <sup>2</sup>                      | 1.11x10 <sup>6</sup>                      | 1.11x10 <sup>7</sup>                                           |
| 95          | Americio-241              | W, todos los compuestos                                | 2.96x10 <sup>4</sup><br>Sup. ósea<br>(3.70x10 <sup>4</sup> ) | 2.22x10 <sup>2</sup><br>Sup. ósea<br>(3.70x10 <sup>2</sup> ) | 1.11x10 <sup>-1</sup><br>-                 | -<br>7.40x10 <sup>-4</sup>                | -<br>7.40x10 <sup>2</sup>                 | -<br>7.40x10 <sup>3</sup>                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 95          | Americio-242              | W, todos los compuestos                                | 1.48x10 <sup>8</sup><br>-                                    | 2.96x10 <sup>6</sup><br>Sup. ósea<br>(3.33x10 <sup>6</sup> ) | 1.48x10 <sup>3</sup><br>-                  | -<br>3.70                                 | 1.85x10 <sup>6</sup><br>-                 | 1.85x10 <sup>7</sup><br>-                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 95          | Americio-242m             | W, todos los compuestos                                | 2.96x10 <sup>4</sup><br>Sup. ósea<br>(3.70x10 <sup>4</sup> ) | 2.22x10 <sup>2</sup><br>Sup. ósea<br>(3.70x10 <sup>2</sup> ) | 1.11x10 <sup>-1</sup><br>-                 | -<br>7.40x10 <sup>-4</sup>                | -<br>7.40x10 <sup>2</sup>                 | -<br>7.40x10 <sup>3</sup>                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 95          | Americio-243              | W, todos los compuestos                                | 2.96x10 <sup>4</sup><br>Sup. ósea<br>(3.70x10 <sup>4</sup> ) | 2.22x10 <sup>2</sup><br>Sup. ósea<br>(3.70x10 <sup>2</sup> ) | 1.11x10 <sup>-1</sup><br>-                 | -<br>7.40x10 <sup>-4</sup>                | -<br>7.40x10 <sup>2</sup>                 | -<br>7.40x10 <sup>3</sup>                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |
| 95          | Americio-244              | W, todos los compuestos                                | 1.11x10 <sup>8</sup><br>-                                    | 7.40x10 <sup>6</sup><br>Sup. ósea<br>(1.11x10 <sup>7</sup> ) | 2.96x10 <sup>3</sup><br>-                  | -<br>1.48x10 <sup>1</sup>                 | 1.48x10 <sup>6</sup><br>-                 | 1.48x10 <sup>7</sup><br>-                                      |
|             |                           |                                                        |                                                              |                                                              |                                            |                                           |                                           |                                                                |

|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
|----|-----------------------------------------|---------------------------------------------------------------|--------------------------------------|-----------------------------------|----------------------|-----------------------------------|----------------------|----------------------|
| 95 | Americio-244m <sup>2</sup>              | W, todos los compuestos                                       | 2.22x10 <sup>9</sup><br>Pared Estom. | 1.48x10 <sup>8</sup><br>Sup. ósea | 7.40x10 <sup>4</sup> | -                                 | -                    | -                    |
|    |                                         |                                                               | (2.96x10 <sup>9</sup> )              | (2.59x10 <sup>8</sup> )           | -                    | 3.70x10 <sup>2</sup>              | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
| 95 | Americio-245                            | W, todos los compuestos                                       | 1.11x10 <sup>9</sup>                 | 2.96x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup>              | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
| 95 | Americio-246 <sup>2</sup>               | W, todos los compuestos                                       | 1.11x10 <sup>9</sup>                 | 3.70x10 <sup>9</sup>              | 1.48x10 <sup>6</sup> | 3.70x10 <sup>3</sup>              | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
| 95 | Americio-246m <sup>2</sup>              | W, todos los compuestos                                       | 1.85x10 <sup>9</sup><br>Pared Estom. | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               | (2.22x10 <sup>9</sup> )              | -                                 | -                    | -                                 | 2.96x10 <sup>7</sup> | 2.96x10 <sup>8</sup> |
| 51 | Antimonio-115 <sup>2</sup>              | D, todos los compuestos exceptos aquellos señalados en W      | 2.96x10 <sup>9</sup>                 | 7.40x10 <sup>9</sup>              | 3.70x10 <sup>6</sup> | 1.11x10 <sup>4</sup>              | 3.7x10 <sup>7</sup>  | 3.70x10 <sup>8</sup> |
|    |                                         | W, óxidos, hidróxidos, haluros, sulfitos, sulfatos y nitratos | -                                    | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup>              | -                    | -                    |
| 51 | Antimonio-116 <sup>2</sup>              | D, ver <sup>115</sup> Sb                                      | 2.59x10 <sup>9</sup><br>Pared Estom. | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               | (3.33x10 <sup>9</sup> )              | -                                 | -                    | -                                 | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
| 51 | Antimonio-116m <sup>2</sup>             | W, ver <sup>115</sup> Sb                                      | -                                    | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup> | 1.85x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
| 51 | Antimonio-116m <sup>2</sup>             | D, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>8</sup>                 | 2.59x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup>              | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 3.70x10 <sup>9</sup>              | 2.22x10 <sup>6</sup> | 7.40x10 <sup>3</sup>              | -                    | -                    |
| 51 | Antimonio-117                           | D, ver <sup>115</sup> Sb                                      | 2.59x10 <sup>9</sup>                 | 7.40x10 <sup>9</sup>              | 3.33x10 <sup>6</sup> | 1.11x10 <sup>4</sup>              | 3.33x10 <sup>7</sup> | 3.33x10 <sup>8</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup>              | -                    | -                    |
| 51 | Antimonio-118m                          | D, ver <sup>115</sup> Sb                                      | 2.22x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 2.96x10 <sup>5</sup> | 1.11x10 <sup>3</sup>              | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 1.85x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 3.33x10 <sup>5</sup> | 1.11x10 <sup>3</sup>              | -                    | -                    |
| 51 | Antimonio-119                           | D, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>8</sup>                 | 1.85x10 <sup>9</sup>              | 7.40x10 <sup>5</sup> | 2.22x10 <sup>3</sup>              | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup>              | -                    | -                    |
| 51 | Antimonio-120                           | D, ver <sup>115</sup> Sb                                      | 3.70x10 <sup>7</sup>                 | 7.40x10 <sup>7</sup>              | 3.33x10 <sup>4</sup> | 1.11x10 <sup>2</sup>              | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 3.33x10 <sup>7</sup>                 | 3.70x10 <sup>7</sup>              | 1.85x10 <sup>4</sup> | 7.40x10 <sup>1</sup>              | -                    | -                    |
| 51 | Antimonio-122                           | D, ver <sup>115</sup> Sb                                      | 2.96x10 <sup>7</sup><br>Pared IGI    | 7.40x10 <sup>7</sup>              | 3.70x10 <sup>4</sup> | 1.11x10 <sup>2</sup>              | -                    | -                    |
|    |                                         |                                                               | (2.96x10 <sup>7</sup> )              | -                                 | -                    | -                                 | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
| 51 | Antimonio-124                           | W, ver <sup>115</sup> Sb                                      | 2.59x10 <sup>7</sup>                 | 3.70x10 <sup>7</sup>              | 1.48x10 <sup>4</sup> | 7.40x10 <sup>1</sup>              | -                    | -                    |
|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
| 51 | Antimonio-124                           | D, ver <sup>115</sup> Sb                                      | 2.22x10 <sup>7</sup>                 | 3.33x10 <sup>7</sup>              | 1.48x10 <sup>4</sup> | 3.70x10 <sup>1</sup>              | 2.59x10 <sup>5</sup> | 2.59x10 <sup>6</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 1.85x10 <sup>7</sup>                 | 7.40x10 <sup>6</sup>              | 3.70x10 <sup>3</sup> | 1.11x10 <sup>1</sup>              | -                    | -                    |
| 51 | Antimonio-124m <sup>2</sup>             | D, ver <sup>115</sup> Sb                                      | 1.11x10 <sup>10</sup>                | 2.96x10 <sup>10</sup>             | 1.48x10 <sup>7</sup> | 3.70x10 <sup>4</sup>              | 1.11x10 <sup>8</sup> | 1.11x10 <sup>9</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>9</sup>                 | 2.22x10 <sup>10</sup>             | 7.40x10 <sup>6</sup> | 2.96x10 <sup>4</sup>              | -                    | -                    |
| 51 | Antimonio-125                           | D, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>7</sup>                 | 7.40x10 <sup>7</sup>              | 3.70x10 <sup>4</sup> | 1.11x10 <sup>2</sup>              | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 1.85x10 <sup>7</sup>              | 7.40x10 <sup>3</sup> | 2.59x10 <sup>1</sup>              | -                    | -                    |
| 51 | Antimonio-126                           | D, ver <sup>115</sup> Sb                                      | 2.22x10 <sup>7</sup>                 | 3.70x10 <sup>7</sup>              | 1.85x10 <sup>4</sup> | 7.40x10 <sup>1</sup>              | 2.59x10 <sup>5</sup> | 2.59x10 <sup>6</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | 1.85x10 <sup>7</sup>                 | 1.85x10 <sup>7</sup>              | 7.40x10 <sup>3</sup> | 2.59x10 <sup>1</sup>              | -                    | -                    |
| 51 | Antimonio-126m <sup>2</sup>             | D, ver <sup>115</sup> Sb                                      | 1.85x10 <sup>9</sup><br>Pared Estom. | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               | (2.59x10 <sup>9</sup> )              | -                                 | -                    | -                                 | 3.33x10 <sup>7</sup> | 3.33x10 <sup>8</sup> |
| 51 | Antimonio-127                           | W, ver <sup>115</sup> Sb                                      | -                                    | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
| 51 | Antimonio-127                           | D, ver <sup>115</sup> Sb                                      | 2.96x10 <sup>7</sup><br>Pared IGI    | 7.40x10 <sup>7</sup>              | 3.33x10 <sup>4</sup> | 1.11x10 <sup>2</sup>              | -                    | -                    |
|    |                                         |                                                               | (2.96x10 <sup>7</sup> )              | -                                 | -                    | -                                 | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
| 51 | Antimonio-128 <sup>2</sup><br>(10.4min) | W, ver <sup>115</sup> Sb                                      | 2.59x10 <sup>7</sup>                 | 3.33x10 <sup>7</sup>              | 1.48x10 <sup>4</sup> | 3.70x10 <sup>1</sup>              | -                    | -                    |
|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
| 51 | Antimonio-128 <sup>2</sup><br>(10.4min) | D, ver <sup>115</sup> Sb                                      | 2.96x10 <sup>9</sup><br>Pared Estom. | 1.48x10 <sup>10</sup>             | 7.40x10 <sup>6</sup> | 1.85x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               | (3.70x10 <sup>9</sup> )              | -                                 | -                    | -                                 | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
| 51 | Antimonio-128<br>(9.01h)                | W, ver <sup>115</sup> Sb                                      | -                                    | 1.48x10 <sup>10</sup>             | 7.40x10 <sup>6</sup> | 2.22x10 <sup>4</sup>              | -                    | -                    |
|    |                                         |                                                               |                                      |                                   |                      |                                   |                      |                      |
| 51 | Antimonio-129                           | D, ver <sup>115</sup> Sb                                      | 3.70x10 <sup>7</sup>                 | 1.48x10 <sup>8</sup>              | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup>              | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 1.11x10 <sup>8</sup>              | 3.70x10 <sup>4</sup> | 1.85x10 <sup>2</sup>              | -                    | -                    |
| 51 | Antimonio-129                           | D, ver <sup>115</sup> Sb                                      | 1.11x10 <sup>8</sup>                 | 3.33x10 <sup>8</sup>              | 1.48x10 <sup>5</sup> | 3.70x10 <sup>2</sup>              | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 3.33x10 <sup>8</sup>              | 1.48x10 <sup>5</sup> | 3.70x10 <sup>2</sup>              | -                    | -                    |
| 51 | Antimonio-130                           | D, ver <sup>115</sup> Sb                                      | 7.40x10 <sup>8</sup>                 | 2.22x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.33x10 <sup>0</sup> <sub>3</sub> | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
|    |                                         | W, ver <sup>115</sup> Sb                                      | -                                    | 2.96x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup>              | -                    | -                    |

|    |                            |                                                                                                                                              |                                       |                                 |                       |                      |                      |                      |
|----|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------|-----------------------|----------------------|----------------------|----------------------|
| 51 | Antimonio-131 <sup>2</sup> | D, ver <sup>115</sup> Sb                                                                                                                     | 3.70x10 <sup>8</sup><br>Tiroide       | 7.40x10 <sup>8</sup><br>Tiroide | 3.70x10 <sup>5</sup>  | -                    | -                    | -                    |
|    |                            |                                                                                                                                              | (7.40x10 <sup>8</sup> )               | (1.48x10 <sup>9</sup> )         | -                     | 2.22x10 <sup>3</sup> | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                            | W, ver <sup>115</sup> Sb                                                                                                                     | -                                     | 7.40x10 <sup>8</sup><br>Tiroide | 3.70x10 <sup>5</sup>  | -                    | -                    | -                    |
|    |                            |                                                                                                                                              | -                                     | (1.48x10 <sup>9</sup> )         | -                     | 2.22x10 <sup>3</sup> | -                    | -                    |
| 18 | Argón-37                   | Sumersión <sup>1</sup>                                                                                                                       | -                                     | -                               | 3.70x10 <sup>10</sup> | 2.22x10 <sup>8</sup> | -                    | -                    |
| 18 | Argón-39                   | Sumersión <sup>1</sup>                                                                                                                       | -                                     | -                               | 7.40x10 <sup>6</sup>  | 2.96x10 <sup>4</sup> | -                    | -                    |
| 18 | Argón-41                   | Sumersión <sup>1</sup>                                                                                                                       | -                                     | -                               | 1.11x10 <sup>5</sup>  | 3.70x10 <sup>2</sup> | -                    | -                    |
| 33 | Arsénico-69 <sup>2</sup>   | W, todos los compuestos                                                                                                                      | 1.11x10 <sup>9</sup><br>Pared Estom.  | 3.70x10 <sup>9</sup>            | 1.85x10 <sup>6</sup>  | 7.40x10 <sup>3</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (1.48x10 <sup>9</sup> )               | -                               | -                     | -                    | 2.22x10 <sup>7</sup> | 2.22x10 <sup>8</sup> |
| 33 | Arsénico-70 <sup>2</sup>   | W, todos los compuestos                                                                                                                      | 3.70x10 <sup>8</sup>                  | 1.85x10 <sup>9</sup>            | 7.40x10 <sup>5</sup>  | 2.59x10 <sup>3</sup> | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
| 33 | Arsénico-71                | W, todos los compuestos                                                                                                                      | 1.48x10 <sup>8</sup>                  | 1.85x10 <sup>8</sup>            | 7.40x10 <sup>4</sup>  | 2.22x10 <sup>2</sup> | 1.85x10 <sup>6</sup> | 1.85x10 <sup>7</sup> |
| 33 | Arsénico-72                | W, todos los compuestos                                                                                                                      | 3.33x10 <sup>7</sup>                  | 3.70x10 <sup>7</sup>            | 2.22x10 <sup>4</sup>  | 7.40x10 <sup>1</sup> | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
| 33 | Arsénico-73                | W, todos los compuestos                                                                                                                      | 2.96x10 <sup>8</sup>                  | 7.40x10 <sup>7</sup>            | 2.59x10 <sup>4</sup>  | 7.40x10 <sup>1</sup> | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
| 33 | Arsénico-74                | W, todos los compuestos                                                                                                                      | 3.70x10 <sup>7</sup>                  | 2.96x10 <sup>7</sup>            | 1.11x10 <sup>4</sup>  | 3.70x10 <sup>1</sup> | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
| 33 | Arsénico-76                | W, todos los compuestos                                                                                                                      | 3.70x10 <sup>7</sup>                  | 3.70x10 <sup>7</sup>            | 2.22x10 <sup>4</sup>  | 7.40x10 <sup>1</sup> | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
| 33 | Arsénico-77                | W, todos los compuestos                                                                                                                      | 1.48x10 <sup>8</sup><br>Pared IGI     | 1.85x10 <sup>8</sup>            | 7.40x10 <sup>4</sup>  | 2.59x10 <sup>2</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (1.85x10 <sup>8</sup> )               | -                               | -                     | -                    | 2.22x10 <sup>6</sup> | 2.22x10 <sup>7</sup> |
| 33 | Arsénico-78 <sup>2</sup>   | W, todos los compuestos                                                                                                                      | 2.96x10 <sup>8</sup>                  | 7.40x10 <sup>8</sup>            | 3.33x10 <sup>5</sup>  | 1.11x10 <sup>3</sup> | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
| 85 | Astat-207 <sup>2</sup>     | D, haluros                                                                                                                                   | 2.22x10 <sup>8</sup>                  | 1.11x10 <sup>8</sup>            | 3.70x10 <sup>4</sup>  | 1.48x10 <sup>2</sup> | 2.96x10 <sup>6</sup> | 2.96x10 <sup>7</sup> |
|    |                            | W                                                                                                                                            | -                                     | 7.40x10 <sup>7</sup>            | 3.33x10 <sup>4</sup>  | 1.11x10 <sup>2</sup> | -                    | -                    |
| 85 | Astat-211                  | D, haluros                                                                                                                                   | 3.70x10 <sup>6</sup>                  | 2.96x10 <sup>6</sup>            | 1.11x10 <sup>3</sup>  | 3.70                 | 7.40x10 <sup>4</sup> | 7.40x10 <sup>5</sup> |
|    |                            | W                                                                                                                                            | -                                     | 1.85x10 <sup>6</sup>            | 7.40x10 <sup>2</sup>  | 2.96                 | -                    | -                    |
| 16 | Azufre-35                  | Vapor                                                                                                                                        | -                                     | 3.70x10 <sup>8</sup>            | 2.22x10 <sup>5</sup>  | 7.40x10 <sup>2</sup> | -                    | -                    |
|    |                            | D, sulfitos y sulfatos excepto los señalados en W                                                                                            | 3.70x10 <sup>8</sup><br>Pared IGI     | 7.40x10 <sup>8</sup>            | 2.59x10 <sup>5</sup>  | 7.40x10 <sup>2</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (2.96x10 <sup>2</sup> )               | -                               | -                     | -                    | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                            | W, Azufre elemental<br>Sulfuros de Sr, Ba, Ge, Sn, Pb, As, Sb, Bi, Cu, Ag, Au, Zn, Cd, Hg, W, y Mo, sulfatos de Ca, Sr, Ba, Ra, As, Sb, y Bi | 2.22x10 <sup>8</sup>                  | -                               | -                     | -                    | -                    | -                    |
| 56 | Bario-126 <sup>2</sup>     | D, todos los compuestos                                                                                                                      | 2.22x10 <sup>8</sup>                  | 7.40x10 <sup>8</sup>            | 2.22x10 <sup>5</sup>  | 7.40x10 <sup>2</sup> | 2.96x10 <sup>6</sup> | 2.96x10 <sup>7</sup> |
| 56 | Bario-128                  | D, todos los compuestos                                                                                                                      | 1.85x10 <sup>7</sup>                  | 7.40x10 <sup>7</sup>            | 2.59x10 <sup>4</sup>  | 7.40x10 <sup>1</sup> | 2.59x10 <sup>5</sup> | 2.59x10 <sup>6</sup> |
| 56 | Bario-131                  | D, todos los compuestos                                                                                                                      | 1.11x10 <sup>8</sup>                  | 2.96x10 <sup>8</sup>            | 1.11x10 <sup>5</sup>  | 3.70x10 <sup>2</sup> | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
| 56 | Bario-131m <sup>2</sup>    | D, todos los compuestos                                                                                                                      | 1.48x10 <sup>10</sup><br>Pared Estom. | 3.70x10 <sup>10</sup>           | 2.22x10 <sup>7</sup>  | 7.40x10 <sup>4</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (1.85x10 <sup>10</sup> )              | -                               | -                     | -                    | 2.59x10 <sup>8</sup> | 2.59x10 <sup>9</sup> |
| 56 | Bario-133                  | D, todos los compuestos                                                                                                                      | 7.40x10 <sup>7</sup>                  | 2.59x10 <sup>7</sup>            | 1.11x10 <sup>4</sup>  | 3.33x10 <sup>1</sup> | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
| 56 | Bario-133m                 | D, todos los compuestos                                                                                                                      | 7.40x10 <sup>7</sup><br>Pared IGI     | 3.33x10 <sup>8</sup>            | 1.48x10 <sup>5</sup>  | 3.70x10 <sup>2</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (1.11x10 <sup>8</sup> )               | -                               | -                     | -                    | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
| 56 | Bario-135m                 | D, todos los compuestos                                                                                                                      | 1.11x10 <sup>8</sup>                  | 3.70x10 <sup>8</sup>            | 1.85x10 <sup>5</sup>  | 7.40x10 <sup>2</sup> | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
| 56 | Bario-139 <sup>2</sup>     | D, todos los compuestos                                                                                                                      | 3.70x10 <sup>8</sup>                  | 1.11x10 <sup>9</sup>            | 3.70x10 <sup>5</sup>  | 1.48x10 <sup>3</sup> | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
| 56 | Bario-140                  | D, todos los compuestos                                                                                                                      | 1.85x10 <sup>7</sup><br>Pared IGI     | 3.70x10 <sup>7</sup>            | 2.22x10 <sup>4</sup>  | 7.40x10 <sup>1</sup> | -                    | -                    |
|    |                            |                                                                                                                                              | (2.22x10 <sup>7</sup> )               | -                               | -                     | -                    | 2.96x10 <sup>5</sup> | 2.96x10 <sup>6</sup> |
| 56 | Bario-141 <sup>2</sup>     | D, todos los compuestos                                                                                                                      | 7.40x10 <sup>8</sup>                  | 2.59x10 <sup>9</sup>            | 1.11x10 <sup>6</sup>  | 3.70x10 <sup>3</sup> | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
| 56 | Bario-142 <sup>2</sup>     | D, todos los compuestos                                                                                                                      | 1.85x10 <sup>9</sup>                  | 3.70x10 <sup>9</sup>            | 2.22x10 <sup>6</sup>  | 7.40x10 <sup>3</sup> | 2.59x10 <sup>7</sup> | 2.59x10 <sup>8</sup> |
| 4  | Berilio-7                  | W, todos los compuestos, excepto los señalados en Y                                                                                          | 1.48x10 <sup>9</sup>                  | 7.40x10 <sup>8</sup>            | 3.33x10 <sup>5</sup>  | 1.11x10 <sup>3</sup> | 2.22x10 <sup>7</sup> | 2.22x10 <sup>8</sup> |
|    |                            | Y, óxidos, haluros y nitratos                                                                                                                | -                                     | 7.40x10 <sup>8</sup>            | 2.96x10 <sup>5</sup>  | 1.11x10 <sup>3</sup> | -                    | -                    |

|    |                          |                                                                                                                                                                                                   |                                    |                                 |                       |                       |                    |                    |
|----|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 4  | Berilio-10               | W, ver <sup>7</sup> Be                                                                                                                                                                            | $3.70 \times 10^7$<br>Pared IGI    | $7.40 \times 10^6$              | $2.22 \times 10^3$    | 7.40                  | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(3.70 \times 10^7)$               | -                               | -                     | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          | Y, ver <sup>7</sup> Be                                                                                                                                                                            | -                                  | $3.70 \times 10^5$              | $2.22 \times 10^2$    | $7.40 \times 10^1$    | -                  | -                  |
| 97 | Berquelio-245            | W, todos los compuestos                                                                                                                                                                           | $7.40 \times 10^7$                 | $3.70 \times 10^7$              | $1.85 \times 10^4$    | $7.40 \times 10^1$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 97 | Berquelio-246            | W, todos los compuestos                                                                                                                                                                           | $1.11 \times 10^8$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 97 | Berquelio-247            | W, todos los compuestos                                                                                                                                                                           | $1.85 \times 10^4$<br>Sup. ósea    | $1.48 \times 10^2$<br>Sup. ósea | $7.40 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(3.70 \times 10^4)$               | $(3.33 \times 10^2)$            | -                     | $3.70 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
| 97 | Berquelio-249            | W, todos los compuestos                                                                                                                                                                           | $7.40 \times 10^6$<br>Sup. ósea    | $7.40 \times 10^4$<br>Sup. ósea | $2.59 \times 10^1$    | -                     | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(1.85 \times 10^7)$               | $(1.48 \times 10^5)$            | -                     | $1.85 \times 10^{-1}$ | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
| 97 | Berquelio-250            | W, todos los compuestos                                                                                                                                                                           | $3.33 \times 10^8$                 | $1.11 \times 10^7$<br>Sup. ósea | $3.70 \times 10^3$    | -                     | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                          |                                                                                                                                                                                                   | -                                  | $(2.59 \times 10^7)$            | -                     | $3.70 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-200 <sup>2</sup> | D, nitratos                                                                                                                                                                                       | $1.11 \times 10^9$                 | $2.96 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                          | W, todos los demás compuestos                                                                                                                                                                     | -                                  | $3.70 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
| 83 | Bismuto-201 <sup>2</sup> | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $3.70 \times 10^8$                 | $1.11 \times 10^9$              | $3.70 \times 10^5$    | $1.48 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $1.85 \times 10^3$    | -                  | -                  |
| 83 | Bismuto-202 <sup>2</sup> | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $3.70 \times 10^8$                 | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $2.96 \times 10^9$              | $1.11 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
| 83 | Bismuto-203              | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $7.40 \times 10^7$                 | $2.59 \times 10^8$              | $1.11 \times 10^5$    | $3.33 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $2.22 \times 10^8$              | $1.11 \times 10^5$    | $3.33 \times 10^2$    | -                  | -                  |
| 83 | Bismuto-205              | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $3.70 \times 10^7$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.11 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $3.70 \times 10^7$              | $1.85 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-206              | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $2.22 \times 10^7$                 | $3.70 \times 10^7$              | $2.22 \times 10^4$    | $7.40 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $3.33 \times 10^7$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-207              | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $3.70 \times 10^7$                 | $7.40 \times 10^7$              | $2.59 \times 10^4$    | $7.40 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $1.48 \times 10^7$              | $3.70 \times 10^3$    | $1.85 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-210              | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $2.96 \times 10^7$                 | $7.40 \times 10^6$<br>Riñones   | $3.70 \times 10^3$    | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                          |                                                                                                                                                                                                   | -                                  | $(1.48 \times 10^7)$            | -                     | $1.85 \times 10^1$    | -                  | -                  |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $1.11 \times 10^6$              | $3.70 \times 10^2$    | 1.48                  | -                  | -                  |
| 83 | Bismuto-210m             | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $1.48 \times 10^6$<br>Riñones      | $1.85 \times 10^5$<br>Riñones   | $7.40 \times 10^1$    | -                     | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(2.22 \times 10^6)$               | $(2.22 \times 10^5)$            | -                     | $3.33 \times 10^1$    | $2.96 \times 10^4$ | $2.96 \times 10^5$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $2.59 \times 10^4$              | $1.11 \times 10^1$    | $3.33 \times 10^{-2}$ | -                  | -                  |
| 83 | Bismuto-212 <sup>2</sup> | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $1.85 \times 10^8$                 | $7.40 \times 10^6$              | $3.70 \times 10^3$    | $1.11 \times 10^1$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $1.11 \times 10^7$              | $3.70 \times 10^3$    | $1.48 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-213 <sup>2</sup> | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $2.59 \times 10^8$                 | $1.11 \times 10^7$              | $3.70 \times 10^3$    | $1.48 \times 10^1$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $1.48 \times 10^7$              | $3.70 \times 10^3$    | $1.85 \times 10^1$    | -                  | -                  |
| 83 | Bismuto-214 <sup>2</sup> | D, ver <sup>200</sup> Bi                                                                                                                                                                          | $7.40 \times 10^8$<br>Pared Estom. | $2.96 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(7.40 \times 10^8)$               | -                               | -                     | -                     | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                          | W, ver <sup>200</sup> Bi                                                                                                                                                                          | -                                  | $3.33 \times 10^3$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | -                  | -                  |
| 35 | Bromo-74 <sup>2</sup>    | D, ver <sup>74m</sup> Br                                                                                                                                                                          | $7.40 \times 10^8$<br>Pared Estom. | $2.59 \times 10^9$              | $1.11 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(1.48 \times 10^9)$               | -                               | -                     | -                     | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                          | W, ver <sup>74m</sup> Br                                                                                                                                                                          | -                                  | $2.96 \times 10^9$              | $1.48 \times 10^6$    | $3.7 \times 10^3$     | -                  | -                  |
| 35 | Bromo-74m <sup>2</sup>   | D, bromuros de H, Li, Na, K, Rb, Cs, y Fr                                                                                                                                                         | $3.70 \times 10^8$<br>Pared Estom  | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $1.85 \times 10^3$    | -                  | -                  |
|    |                          |                                                                                                                                                                                                   | $(7.40 \times 10^8)$               | -                               | -                     | -                     | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                          | W, bromuros de lantánidos, Be, Mg, Ca, Sr, Ba, Ra, Al, Ga, In, Tl, Ge, Sn, Pb, As, Sb, Bi, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg, Sc, Y, Ti, Zr, Hf, V, Nb, Ta, Mn, Tc, y Re | -                                  | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | -                  | -                  |

|    |                         |                                                        |                                      |                                 |                      |                       |                      |                      |
|----|-------------------------|--------------------------------------------------------|--------------------------------------|---------------------------------|----------------------|-----------------------|----------------------|----------------------|
| 35 | Bromo-75 <sup>2</sup>   | D, ver <sup>74m</sup> Br                               | 1.11x10 <sup>9</sup>                 | 1.85x10 <sup>9</sup>            | 7.40x10 <sup>5</sup> | 2.59x10 <sup>3</sup>  | -                    | -                    |
|    |                         |                                                        | 1.48x10 <sup>9</sup>                 | -                               | -                    | -                     | 1.85x10 <sup>7</sup> | 1.85x10 <sup>8</sup> |
| 35 | Bromo-76                | D, ver <sup>74m</sup> Br                               | 1.48x10 <sup>8</sup>                 | 1.85x10 <sup>8</sup>            | 7.40x10 <sup>4</sup> | 2.59x10 <sup>2</sup>  | 1.85x10 <sup>6</sup> | 1.85x10 <sup>7</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 1.48x10 <sup>8</sup>            | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup>  | -                    | -                    |
| 35 | Bromo-77                | D, ver <sup>74m</sup> Br                               | 7.40x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>            | 3.70x10 <sup>5</sup> | 1.11x10 <sup>3</sup>  | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 7.40x10 <sup>8</sup>            | 2.96x10 <sup>5</sup> | 1.11x10 <sup>3</sup>  | -                    | -                    |
| 35 | Bromo-80 <sup>2</sup>   | D, ver <sup>74m</sup> Br                               | 1.85x10 <sup>9</sup><br>Pared Estom. | 7.40x10 <sup>9</sup>            | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>  | -                    | -                    |
|    |                         |                                                        | (3.33x10 <sup>9</sup> )              | -                               | -                    | -                     | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 7.40x10 <sup>9</sup>            | 3.33x10 <sup>6</sup> | 1.11x10 <sup>4</sup>  | -                    | -                    |
| 35 | Bromo-80m               | D, ver <sup>74m</sup> Br                               | 7.40x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>            | 2.59x10 <sup>5</sup> | 7.40x10 <sup>2</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 3.70x10 <sup>8</sup>            | 2.22x10 <sup>5</sup> | 7.40x10 <sup>2</sup>  | -                    | -                    |
| 35 | Bromo-82                | D, ver <sup>74m</sup> Br                               | 1.11x10 <sup>8</sup>                 | 1.48x10 <sup>8</sup>            | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup>  | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 1.48x10 <sup>8</sup>            | 7.40x10 <sup>4</sup> | 1.85x10 <sup>2</sup>  | -                    | -                    |
| 35 | Bromo-83                | D, ver <sup>74m</sup> Br                               | 1.85x10 <sup>9</sup><br>Pared Estom. | 2.22x10 <sup>9</sup>            | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup>  | -                    | -                    |
|    |                         |                                                        | (2.59x10 <sup>9</sup> )              | -                               | -                    | -                     | 3.33x10 <sup>7</sup> | 3.33x10 <sup>8</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 2.22x10 <sup>9</sup>            | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup>  | -                    | -                    |
| 35 | Bromo-84 <sup>2</sup>   | D, ver <sup>74m</sup> Br                               | 7.40x10 <sup>8</sup><br>Pared Estom. | 2.22x10 <sup>9</sup>            | 7.40x10 <sup>5</sup> | 2.96x10 <sup>3</sup>  | -                    | -                    |
|    |                         |                                                        | (1.11x10 <sup>9</sup> )              | -                               | -                    | -                     | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
|    |                         | W, ver <sup>74m</sup> Br                               | -                                    | 2.22x10 <sup>9</sup>            | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup>  | -                    | -                    |
| 48 | Cadmio-104 <sup>2</sup> | D, todos los compuestos excepto los señalados en W y Y | 7.40x10 <sup>8</sup>                 | 2.59x10 <sup>9</sup>            | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
|    |                         | W, sulfuros, haluros, y nitratos                       | -                                    | 3.70x10 <sup>9</sup>            | 1.85x10 <sup>6</sup> | 7.40x10 <sup>3</sup>  | -                    | -                    |
|    |                         | Y, óxidos e hidróxidos                                 | -                                    | 3.70x10 <sup>9</sup>            | 1.85x10 <sup>6</sup> | 7.40x10 <sup>3</sup>  | -                    | -                    |
| 48 | Cadmio-107              | D, ver <sup>104</sup> Cd                               | 7.40x10 <sup>8</sup>                 | 1.85x10 <sup>9</sup>            | 7.40x10 <sup>5</sup> | 2.96x10 <sup>3</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
|    |                         | W, ver <sup>104</sup> Cd                               | -                                    | 2.22x10 <sup>9</sup>            | 7.40x10 <sup>5</sup> | 2.96x10 <sup>3</sup>  | -                    | -                    |
|    |                         | Y, ver <sup>104</sup> Cd                               | -                                    | 1.85x10 <sup>9</sup>            | 7.40x10 <sup>5</sup> | 2.59x10 <sup>3</sup>  | -                    | -                    |
| 48 | Cadmio-109              | D, ver <sup>104</sup> Cd                               | 1.11x10 <sup>7</sup><br>Riñones      | 1.48x10 <sup>6</sup><br>Riñones | 3.70x10 <sup>2</sup> | -                     | -                    | -                    |
|    |                         |                                                        | (1.48x10 <sup>7</sup> )              | (1.85x10 <sup>6</sup> )         | -                    | 2.59                  | 2.22x10 <sup>5</sup> | 2.22x10 <sup>6</sup> |
|    |                         | W, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>6</sup><br>Riñones | 1.85x10 <sup>3</sup> | -                     | -                    | -                    |
|    |                         |                                                        | -                                    | (3.70x10 <sup>6</sup> )         | -                    | 7.40                  | -                    | -                    |
|    |                         | Y, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>6</sup>            | 1.85x10 <sup>3</sup> | 7.40                  | -                    | -                    |
| 48 | Cadmio-113              | D, ver <sup>104</sup> Cd                               | 7.40x10 <sup>5</sup><br>Riñones      | 7.40x10 <sup>4</sup><br>Riñones | 3.33x10 <sup>1</sup> | -                     | -                    | -                    |
|    |                         |                                                        | (1.11x10 <sup>6</sup> )              | (1.11x10 <sup>5</sup> )         | -                    | 1.85x10 <sup>-1</sup> | 1.48x10 <sup>4</sup> | 1.48x10 <sup>5</sup> |
|    |                         | W, ver <sup>104</sup> Cd                               | -                                    | 2.96x10 <sup>5</sup><br>Riñones | 1.11x10 <sup>2</sup> | -                     | -                    | -                    |
|    |                         |                                                        | -                                    | (3.70x10 <sup>5</sup> )         | -                    | 7.40x10 <sup>-1</sup> | -                    | -                    |
|    |                         | Y, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>5</sup>            | 2.22x10 <sup>2</sup> | 7.40x10 <sup>-1</sup> | -                    | -                    |
| 48 | Cadmio-113m             | D, ver <sup>104</sup> Cd                               | 7.40x10 <sup>5</sup><br>Riñones      | 7.40x10 <sup>4</sup><br>Riñones | 3.70x10 <sup>1</sup> | -                     | -                    | -                    |
|    |                         |                                                        | (1.48x10 <sup>6</sup> )              | (1.48x10 <sup>5</sup> )         | -                    | 1.85x10 <sup>-1</sup> | 1.85x10 <sup>4</sup> | 1.85x10 <sup>5</sup> |
|    |                         | W, ver <sup>104</sup> Cd                               | -                                    | 2.96x10 <sup>5</sup><br>Riñones | 1.48x10 <sup>2</sup> | -                     | -                    | -                    |
|    |                         |                                                        | -                                    | 3.70x10 <sup>5</sup>            | -                    | 7.40x10 <sup>-1</sup> | -                    | -                    |
|    |                         | Y, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>5</sup>            | 1.85x10 <sup>2</sup> | 7.40x10 <sup>-1</sup> | -                    | -                    |
| 48 | Cadmio-115              | D, ver <sup>104</sup> Cd                               | 3.33x10 <sup>7</sup><br>Pared IGI    | 3.70x10 <sup>7</sup>            | 2.22x10 <sup>4</sup> | 7.40x10 <sup>1</sup>  | -                    | -                    |
|    |                         |                                                        | (3.70x10 <sup>7</sup> )              | -                               | -                    | -                     | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                         | W, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>7</sup>            | 1.85x10 <sup>4</sup> | 7.40x10 <sup>1</sup>  | -                    | -                    |
|    |                         | Y, ver <sup>104</sup> Cd                               | -                                    | 3.70x10 <sup>7</sup>            | 2.22x10 <sup>4</sup> | 7.40x10 <sup>1</sup>  | -                    | -                    |

|    |                             |                                                     |                                    |                                 |                       |                       |                    |                    |
|----|-----------------------------|-----------------------------------------------------|------------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 48 | Cadmio-115m                 | D, ver $^{104}\text{Cd}$                            | $1.11 \times 10^7$                 | $1.85 \times 10^6$<br>Riñones   | $7.40 \times 10^2$    | -                     | $1.48 \times 10^5$ | $1.48 \times 10^6$ |
|    |                             |                                                     | -                                  | $2.96 \times 10^6$              | -                     | 3.70                  | -                  | -                  |
|    |                             | W, ver $^{104}\text{Cd}$                            | -                                  | $3.70 \times 10^6$              | $1.85 \times 10^3$    | 7.40                  | -                  | -                  |
|    |                             | Y, ver $^{104}\text{Cd}$                            | -                                  | $3.70 \times 10^6$              | $2.22 \times 10^3$    | 7.40                  | -                  | -                  |
| 48 | Cadmio-117                  | D, ver $^{104}\text{Cd}$                            | $1.85 \times 10^8$                 | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                             | W, ver $^{104}\text{Cd}$                            | -                                  | $7.40 \times 10^8$              | $2.59 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
|    |                             | Y, ver $^{104}\text{Cd}$                            | -                                  | $3.70 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 48 | Cadmio-117m                 | D, ver $^{104}\text{Cd}$                            | $1.85 \times 10^8$                 | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                             | W, ver $^{104}\text{Cd}$                            | -                                  | $7.40 \times 10^8$              | $2.59 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
|    |                             | Y, ver $^{104}\text{Cd}$                            | -                                  | $3.70 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 20 | Calcio-41                   | W, todos los compuestos                             | $1.11 \times 10^8$                 | $1.48 \times 10^8$<br>Sup. ósea | $7.40 \times 10^4$    | -                     | -                  | -                  |
|    |                             |                                                     | ( $1.48 \times 10^8$ )             | ( $1.48 \times 10^8$ )          | -                     | $1.85 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
| 20 | Calcio-45                   | W, todos los compuestos                             | $7.40 \times 10^7$                 | $2.96 \times 10^7$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 20 | Calcio-47                   | W, todos los compuestos                             | $2.96 \times 10^7$                 | $3.33 \times 10^7$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 98 | Californio-244 <sup>2</sup> | W, todos los compuestos, excepto los señalados en Y | $1.11 \times 10^9$<br>Pared Estom. | $2.22 \times 10^7$              | $7.40 \times 10^3$    | $2.96 \times 10^1$    | -                  | -                  |
|    |                             |                                                     | ( $1.11 \times 10^9$ )             | -                               | -                     | -                     | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                             | Y, óxidos e hidróxidos                              | -                                  | $2.22 \times 10^7$              | $7.40 \times 10^3$    | $2.96 \times 10^1$    | -                  | -                  |
| 98 | Californio-246              | W, ver $^{244}\text{Cf}$                            | $1.48 \times 10^7$                 | $3.33 \times 10^5$              | $1.48 \times 10^2$    | $3.70 \times 10^{-1}$ | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $3.33 \times 10^5$              | $1.48 \times 10^2$    | $3.70 \times 10^{-1}$ | -                  | -                  |
| 98 | Californio-248              | W, ver $^{244}\text{Cf}$                            | $2.96 \times 10^5$<br>Sup. ósea    | $2.22 \times 10^3$<br>Sup. ósea | 1.11                  | -                     | -                  | -                  |
|    |                             |                                                     | ( $7.40 \times 10^5$ )             | ( $3.70 \times 10^3$ )          | -                     | $7.40 \times 10^{-3}$ | $7.40 \times 10^3$ | $7.40 \times 10^4$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $3.70 \times 10^3$              | 1.48                  | $3.70 \times 10^{-3}$ | -                  | -                  |
| 98 | Californio-249              | W, ver $^{244}\text{Cf}$                            | $1.85 \times 10^4$<br>Sup. ósea    | $1.48 \times 10^2$<br>Sup. ósea | $7.40 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                             |                                                     | ( $3.70 \times 10^4$ )             | ( $3.33 \times 10^2$ )          | -                     | $3.70 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $3.70 \times 10^2$<br>Sup. ósea | $1.48 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                             |                                                     | -                                  | ( $3.70 \times 10^2$ )          | -                     | $7.4 \times 10^{-4}$  | -                  | -                  |
| 98 | Californio-250              | W, ver $^{244}\text{Cf}$                            | $3.70 \times 10^4$<br>Sup. ósea    | $3.33 \times 10^2$<br>Sup. ósea | $1.48 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                             |                                                     | ( $7.40 \times 10^4$ )             | ( $7.40 \times 10^2$ )          | -                     | $1.11 \times 10^{-3}$ | $1.11 \times 10^3$ | $1.11 \times 10^4$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $1.11 \times 10^3$              | $3.70 \times 10^{-1}$ | $1.48 \times 10^{-3}$ | -                  | -                  |
| 98 | Californio-251              | W, ver $^{244}\text{Cf}$                            | $1.85 \times 10^4$<br>Sup. ósea    | $1.48 \times 10^2$<br>Sup. ósea | $7.40 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                             |                                                     | ( $3.70 \times 10^4$ )             | ( $3.33 \times 10^2$ )          | -                     | $3.70 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $3.70 \times 10^2$<br>Sup. ósea | $1.48 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                             |                                                     | -                                  | $3.7 \times 10^2$               | -                     | $7.40 \times 10^2$    | -                  | -                  |
| 98 | Californio-252              | W, ver $^{244}\text{Cf}$                            | $7.40 \times 10^4$<br>Sup. ósea    | $7.40 \times 10^2$<br>Sup. ósea | $2.96 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                             |                                                     | ( $1.85 \times 10^5$ )             | ( $1.48 \times 10^3$ )          | -                     | $1.85 \times 10^{-3}$ | $2.59 \times 10^3$ | $2.59 \times 10^4$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $1.11 \times 10^3$              | $3.70 \times 10^{-1}$ | $1.85 \times 10^{-3}$ | -                  | -                  |
| 98 | Californio-253              | W, ver $^{244}\text{Cf}$                            | $7.40 \times 10^6$<br>Sup. ósea    | $7.40 \times 10^4$              | $2.96 \times 10^1$    | $1.11 \times 10^{-1}$ | -                  | -                  |
|    |                             |                                                     | ( $1.48 \times 10^7$ )             | -                               | -                     | -                     | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $7.40 \times 10^4$              | $2.59 \times 10^1$    | $7.40 \times 10^{-2}$ | -                  | -                  |
| 98 | Californio-254              | W, ver $^{244}\text{Cf}$                            | $7.40 \times 10^4$                 | $7.40 \times 10^2$              | $3.33 \times 10^{-1}$ | $1.11 \times 10^{-3}$ | $1.11 \times 10^3$ | $1.11 \times 10^4$ |
|    |                             | Y, ver $^{244}\text{Cf}$                            | -                                  | $7.40 \times 10^2$              | $2.59 \times 10^{-1}$ | $7.40 \times 10^{-4}$ | -                  | -                  |
| 6  | Carbono-11 <sup>2</sup>     | Monóxido                                            | -                                  | $3.70 \times 10^{10}$           | $1.85 \times 10^7$    | $7.40 \times 10^4$    | -                  | -                  |
|    |                             | Dióxido                                             | -                                  | $2.22 \times 10^{10}$           | $1.11 \times 10^7$    | $3.3 \times 10^4$     | -                  | -                  |
|    |                             | Compuestos                                          | $1.48 \times 10^{10}$              | $1.48 \times 10^{10}$           | $7.40 \times 10^6$    | $2.22 \times 10^4$    | $2.22 \times 10^8$ | $2.22 \times 10^9$ |
| 6  | Carbono-14                  | Monóxido                                            | -                                  | $7.40 \times 10^{10}$           | $2.59 \times 10^7$    | $7.40 \times 10^4$    | -                  | -                  |
|    |                             | Dióxido                                             | -                                  | $7.40 \times 10^9$              | $3.33 \times 10^6$    | $1.11 \times 10^4$    | -                  | -                  |
|    |                             | Compuestos                                          | $7.40 \times 10^7$                 | $7.40 \times 10^7$              | $3.70 \times 10^4$    | $1.11 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |

|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
|----|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 58 | Cerio-134               | W, todos los compuestos, excepto los señalados en Y                                                                                                                                                          | $1.85 \times 10^7$<br>Pared IGI<br>( $2.2 \times 10^7$ )     | $2.59 \times 10^7$ | $1.11 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                         | Y, óxidos, hidróxidos y fluoruros                                                                                                                                                                            | -                                                            | $2.59 \times 10^7$ | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 58 | Cerio-135               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $7.40 \times 10^7$                                           | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $1.48 \times 10^8$ | $3.70 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |
| 58 | Cerio-137               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $1.85 \times 10^9$                                           | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $3.70 \times 10^9$ | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 58 | Cerio-137m              | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $7.40 \times 10^7$<br>Pared IGI<br>( $7.40 \times 10^7$ )    | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $2.22 \times 10^2$ | -                  | -                  |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 58 | Cerio-139               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $1.85 \times 10^8$                                           | $2.96 \times 10^7$ | $1.11 \times 10^4$ | $3.70 \times 10^1$ | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $2.59 \times 10^7$ | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
| 58 | Cerio-141               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $7.40 \times 10^7$<br>Pared IGI<br>( $7.40 \times 10^7$ )    | $2.59 \times 10^7$ | $1.11 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $2.22 \times 10^7$ | $7.40 \times 10^3$ | $2.96 \times 10^1$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 58 | Cerio-143               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $3.70 \times 10^7$<br>Pared IGI<br>( $3.7 \times 10^7$ )     | $7.40 \times 10^7$ | $2.96 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $7.40 \times 10^7$ | $2.59 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 58 | Cerio-144               | W, ver $^{134}\text{Ce}$                                                                                                                                                                                     | $7.40 \times 10^6$<br>Pared IGI<br>( $1.11 \times 10^7$ )    | $1.11 \times 10^6$ | $3.70 \times 10^2$ | 1.48               | -                  | -                  |
|    |                         | Y, ver $^{134}\text{Ce}$                                                                                                                                                                                     | -                                                            | $3.70 \times 10^5$ | $2.22 \times 10^2$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 55 | Cesio-125 <sup>2</sup>  | D, todos los compuestos                                                                                                                                                                                      | $1.85 \times 10^9$<br>Pared Estom.<br>( $3.33 \times 10^9$ ) | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 55 | Cesio-127               | D, todos los compuestos                                                                                                                                                                                      | $2.22 \times 10^9$                                           | $3.33 \times 10^9$ | $1.48 \times 10^6$ | $3.70 \times 10^3$ | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
| 55 | Cesio-129               | D, todos los compuestos                                                                                                                                                                                      | $7.40 \times 10^8$                                           | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.85 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 55 | Cesio-130 <sup>2</sup>  | D, todos los compuestos                                                                                                                                                                                      | $2.22 \times 10^9$<br>Pared Estom.<br>( $3.70 \times 10^9$ ) | $7.40 \times 10^9$ | $2.96 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 55 | Cesio-131               | D, todos los compuestos                                                                                                                                                                                      | $7.40 \times 10^8$                                           | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.48 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 55 | Cesio-132               | D, todos los compuestos                                                                                                                                                                                      | $1.11 \times 10^8$                                           | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $2.22 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 55 | Cesio-134               | D, todos los compuestos                                                                                                                                                                                      | $2.59 \times 10^6$                                           | $3.70 \times 10^6$ | $1.48 \times 10^3$ | 7.40               | $3.33 \times 10^4$ | $3.33 \times 10^5$ |
| 55 | Cesio-134m              | D, todos los compuestos                                                                                                                                                                                      | $3.70 \times 10^9$<br>Pared Estom.<br>( $3.70 \times 10^9$ ) | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 55 | Cesio-135               | D, todos los compuestos                                                                                                                                                                                      | $2.59 \times 10^7$                                           | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 55 | Cesio-135m <sup>2</sup> | D, todos los compuestos                                                                                                                                                                                      | $3.70 \times 10^9$                                           | $7.40 \times 10^9$ | $2.96 \times 10^6$ | $1.11 \times 10^4$ | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 55 | Cesio-136               | D, todos los compuestos                                                                                                                                                                                      | $1.48 \times 10^7$                                           | $2.59 \times 10^7$ | $1.11 \times 10^4$ | $3.33 \times 10^1$ | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
| 55 | Cesio-137               | D, todos los compuestos                                                                                                                                                                                      | $3.70 \times 10^6$                                           | $7.40 \times 10^6$ | $2.22 \times 10^3$ | 7.40               | $3.70 \times 10^4$ | $3.70 \times 10^5$ |
| 55 | Cesio-138 <sup>2</sup>  | D, todos los compuestos                                                                                                                                                                                      | $7.40 \times 10^8$<br>Pared Estom.<br>( $1.11 \times 10^9$ ) | $2.22 \times 10^9$ | $7.40 \times 10^5$ | $2.96 \times 10^3$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |
| 17 | Cloro-36                | D, cloruros de H, Li, Na, K, Rb, Cs, y Fr                                                                                                                                                                    | $7.40 \times 10^7$                                           | $7.40 \times 10^7$ | $3.70 \times 10^4$ | $1.11 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                         | W, cloruros de lantánidos, Be, Mg, Ca, Sr, Ba, Ra, Al, Ga, In, Tl, Ge, Sn, Pb, As, Sb, Bi, Fe, Ru, Os, Co, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg, Sc, Y, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Tc, y Re | -                                                            | $7.40 \times 10^6$ | $3.70 \times 10^3$ | $1.11 \times 10^1$ | -                  | -                  |
| 17 | Cloro-38 <sup>2</sup>   | D, ver $^{36}\text{Cl}$                                                                                                                                                                                      | $7.40 \times 10^8$<br>Pared Estom.<br>( $1.11 \times 10^9$ ) | $1.48 \times 10^9$ | $7.40 \times 10^5$ | $2.22 \times 10^3$ | -                  | -                  |
|    |                         | W, ver $^{36}\text{Cl}$                                                                                                                                                                                      | -                                                            | $1.85 \times 10^9$ | $7.40 \times 10^5$ | $2.22 \times 10^3$ | -                  | -                  |
|    |                         |                                                                                                                                                                                                              |                                                              |                    |                    |                    |                    |                    |

|    |                          |                                                        |                                                                   |                                                              |                           |                           |                           |                           |
|----|--------------------------|--------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 17 | Cloro-39 <sup>2</sup>    | D, ver <sup>36</sup> Cl                                | 7.40x10 <sup>8</sup><br>Pared Estom.<br>(1.48x10 <sup>9</sup> )   | 1.85x10 <sup>9</sup><br>-                                    | 7.40x10 <sup>5</sup><br>- | 2.59x10 <sup>3</sup><br>- | -<br>1.85x10 <sup>7</sup> | -<br>1.85x10 <sup>8</sup> |
|    |                          | W, ver <sup>36</sup> Cl                                | -                                                                 | 2.22x10 <sup>9</sup>                                         | 7.40x10 <sup>5</sup>      | 2.96x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>36</sup> Cl                                | -                                                                 | 2.22x10 <sup>9</sup>                                         | 7.40x10 <sup>5</sup>      | 2.96x10 <sup>3</sup>      | -                         | -                         |
| 27 | Cobalto-55               | W, todos los compuestos, excepto los señalados en Y    | 3.70x10 <sup>7</sup>                                              | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>      | 1.48x10 <sup>2</sup>      | 7.40x10 <sup>5</sup>      | 7.40x10 <sup>6</sup>      |
|    |                          | Y, óxidos, hidróxidos, haluros, y nitratos             | -                                                                 | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>      | 1.48x10 <sup>2</sup>      | -                         | -                         |
| 27 | Cobalto-56               | W, ver <sup>55</sup> Co                                | 1.85x10 <sup>7</sup>                                              | 1.11x10 <sup>7</sup>                                         | 3.70x10 <sup>3</sup>      | 1.48x10 <sup>1</sup>      | 2.22x10 <sup>5</sup>      | 2.22x10 <sup>6</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | 1.48x10 <sup>7</sup>                                              | 7.40x10 <sup>6</sup>                                         | 2.96x10 <sup>3</sup>      | 1.11x10 <sup>1</sup>      | -                         | -                         |
| 27 | Cobalto-57               | W, ver <sup>55</sup> Co                                | 2.96x10 <sup>8</sup>                                              | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>      | 1.48x10 <sup>2</sup>      | 2.22x10 <sup>6</sup>      | 2.22x10 <sup>7</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | 1.48x10 <sup>8</sup>                                              | 2.59x10 <sup>7</sup>                                         | 1.11x10 <sup>4</sup>      | 3.33x10 <sup>1</sup>      | -                         | -                         |
| 27 | Cobalto-58               | W, ver <sup>55</sup> Co                                | 7.40x10 <sup>7</sup>                                              | 3.70x10 <sup>7</sup>                                         | 1.85x10 <sup>4</sup>      | 7.40x10 <sup>1</sup>      | 7.40x10 <sup>5</sup>      | 7.40x10 <sup>6</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | 3.70x10 <sup>7</sup>                                              | 2.59x10 <sup>7</sup>                                         | 1.11x10 <sup>4</sup>      | 3.70x10 <sup>1</sup>      | -                         | -                         |
| 27 | Cobalto-58m              | W, ver <sup>55</sup> Co                                | 2.22x10 <sup>9</sup>                                              | 3.33x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | 2.96x10 <sup>7</sup>      | 2.96x10 <sup>8</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | -                                                                 | 2.22x10 <sup>9</sup>                                         | 1.11x10 <sup>6</sup>      | 3.33x10 <sup>3</sup>      | -                         | -                         |
| 27 | Cobalto-60               | W, ver <sup>55</sup> Co                                | 1.85x10 <sup>7</sup>                                              | 7.40x10 <sup>6</sup>                                         | 2.59x10 <sup>3</sup>      | 7.40                      | 1.11x10 <sup>5</sup>      | 1.11x10 <sup>6</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | 7.40x10 <sup>6</sup>                                              | 1.11x10 <sup>6</sup>                                         | 3.70x10 <sup>2</sup>      | 1.85                      | -                         | -                         |
| 27 | Cobalto-60m <sup>2</sup> | W, ver <sup>55</sup> Co                                | 3.70x10 <sup>10</sup><br>Pared Estom.<br>(3.70x10 <sup>10</sup> ) | 1.48x10 <sup>11</sup><br>-                                   | 7.40x10 <sup>7</sup><br>- | 2.22x10 <sup>5</sup><br>- | -<br>7.40x10 <sup>8</sup> | -<br>7.40x10 <sup>9</sup> |
|    |                          | Y, ver <sup>55</sup> Co                                | -                                                                 | 1.11x10 <sup>11</sup>                                        | 3.70x10 <sup>7</sup>      | 1.48x10 <sup>5</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>55</sup> Co                                | -                                                                 | 1.11x10 <sup>11</sup>                                        | 3.70x10 <sup>7</sup>      | 1.48x10 <sup>5</sup>      | -                         | -                         |
| 27 | Cobalto-61 <sup>2</sup>  | W, ver <sup>55</sup> Co                                | 7.40x10 <sup>8</sup>                                              | 2.22x10 <sup>9</sup>                                         | 1.11x10 <sup>6</sup>      | 3.33x10 <sup>3</sup>      | 1.11x10 <sup>7</sup>      | 1.11x10 <sup>8</sup>      |
|    |                          | Y, ver <sup>55</sup> Co                                | 7.40x10 <sup>8</sup>                                              | 2.22x10 <sup>9</sup>                                         | 7.40x10 <sup>5</sup>      | 2.96x10 <sup>3</sup>      | -                         | -                         |
| 27 | Cobalto-62m <sup>2</sup> | W, ver <sup>55</sup> Co                                | 1.48x10 <sup>9</sup><br>Pared Estom.<br>(1.85x10 <sup>9</sup> )   | 7.40x10 <sup>9</sup><br>-                                    | 2.59x10 <sup>6</sup><br>- | 7.40x10 <sup>3</sup><br>- | -<br>2.59x10 <sup>7</sup> | -<br>2.59x10 <sup>8</sup> |
|    |                          | Y, ver <sup>55</sup> Co                                | -                                                                 | 7.40x10 <sup>9</sup>                                         | 2.22x10 <sup>6</sup>      | 7.40x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>55</sup> Co                                | -                                                                 | 7.40x10 <sup>9</sup>                                         | 2.22x10 <sup>6</sup>      | 7.40x10 <sup>3</sup>      | -                         | -                         |
| 29 | Cobre-60 <sup>2</sup>    | D, todos los compuestos excepto los señalados en W y Y | 1.11x10 <sup>9</sup><br>Pared Estom.<br>(1.11x10 <sup>9</sup> )   | 3.33x10 <sup>9</sup><br>-                                    | 1.48x10 <sup>6</sup><br>- | 3.70x10 <sup>3</sup><br>- | -<br>1.48x10 <sup>7</sup> | -<br>1.48x10 <sup>8</sup> |
|    |                          | W, sulfuros, haluros, y nitratos                       | -                                                                 | 3.70x10 <sup>9</sup>                                         | 1.85x10 <sup>6</sup>      | 7.40x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, óxidos e hidróxidos                                 | -                                                                 | 3.70x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, óxidos e hidróxidos                                 | -                                                                 | 3.70x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | -                         | -                         |
| 29 | Cobre-61                 | D, ver <sup>60</sup> Cu                                | 3.70x10 <sup>8</sup>                                              | 1.11x10 <sup>9</sup>                                         | 3.70x10 <sup>5</sup>      | 1.48x10 <sup>3</sup>      | 7.40x10 <sup>6</sup>      | 7.40x10 <sup>7</sup>      |
|    |                          | W, ver <sup>60</sup> Cu                                | -                                                                 | 1.48x10 <sup>9</sup>                                         | 7.40x10 <sup>5</sup>      | 2.22x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>60</sup> Cu                                | -                                                                 | 1.48x10 <sup>9</sup>                                         | 3.70x10 <sup>5</sup>      | 1.85x10 <sup>3</sup>      | -                         | -                         |
| 29 | Cobre-64                 | D, ver <sup>60</sup> Cu                                | 3.70x10 <sup>8</sup>                                              | 1.11x10 <sup>9</sup>                                         | 3.70x10 <sup>5</sup>      | 1.48x10 <sup>3</sup>      | 7.40x10 <sup>6</sup>      | 7.40x10 <sup>7</sup>      |
|    |                          | W, ver <sup>60</sup> Cu                                | -                                                                 | 7.40x10 <sup>8</sup>                                         | 3.70x10 <sup>5</sup>      | 1.11x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>60</sup> Cu                                | -                                                                 | 7.40x10 <sup>8</sup>                                         | 3.33x10 <sup>5</sup>      | 1.11x10 <sup>3</sup>      | -                         | -                         |
| 29 | Cobre-67                 | D, ver <sup>60</sup> Cu                                | 1.85x10 <sup>8</sup>                                              | 2.96x10 <sup>8</sup>                                         | 1.11x10 <sup>5</sup>      | 3.70x10 <sup>2</sup>      | 2.22x10 <sup>6</sup>      | 2.22x10 <sup>7</sup>      |
|    |                          | W, ver <sup>60</sup> Cu                                | -                                                                 | 1.85x10 <sup>8</sup>                                         | 7.40x10 <sup>4</sup>      | 2.59x10 <sup>2</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>60</sup> Cu                                | -                                                                 | 1.85x10 <sup>8</sup>                                         | 7.40x10 <sup>4</sup>      | 2.22x10 <sup>2</sup>      | -                         | -                         |
| 24 | Cromo-48                 | D, todos los compuestos excepto los señalados en W y Y | 2.22x10 <sup>8</sup>                                              | 3.70x10 <sup>8</sup>                                         | 1.85x10 <sup>5</sup>      | 7.40x10 <sup>2</sup>      | 2.96x10 <sup>6</sup>      | 2.96x10 <sup>7</sup>      |
|    |                          | W, haluros y nitratos                                  | -                                                                 | 2.59x10 <sup>8</sup>                                         | 1.11x10 <sup>5</sup>      | 3.70x10 <sup>2</sup>      | -                         | -                         |
|    |                          | Y, óxidos e hidróxidos                                 | -                                                                 | 2.59x10 <sup>8</sup>                                         | 1.11x10 <sup>5</sup>      | 3.70x10 <sup>2</sup>      | -                         | -                         |
| 24 | Cromo-49 <sup>2</sup>    | D, ver <sup>48</sup> Cr                                | 1.11x10 <sup>9</sup>                                              | 2.96x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | 1.48x10 <sup>7</sup>      | 1.48x10 <sup>8</sup>      |
|    |                          | W, ver <sup>48</sup> Cr                                | -                                                                 | 3.70x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>48</sup> Cr                                | -                                                                 | 3.33x10 <sup>9</sup>                                         | 1.48x10 <sup>6</sup>      | 3.70x10 <sup>3</sup>      | -                         | -                         |
| 24 | Cromo-51                 | D, ver <sup>48</sup> Cr                                | 1.48x10 <sup>9</sup>                                              | 1.85x10 <sup>9</sup>                                         | 7.40x10 <sup>5</sup>      | 2.22x10 <sup>3</sup>      | 1.85x10 <sup>7</sup>      | 1.85x10 <sup>8</sup>      |
|    |                          | W, ver <sup>48</sup> Cr                                | -                                                                 | 7.40x10 <sup>8</sup>                                         | 3.70x10 <sup>5</sup>      | 1.11x10 <sup>3</sup>      | -                         | -                         |
|    |                          | Y, ver <sup>48</sup> Cr                                | -                                                                 | 7.40x10 <sup>8</sup>                                         | 2.96x10 <sup>5</sup>      | 1.11x10 <sup>3</sup>      | -                         | -                         |
| 96 | Curio-238                | W, todos los compuestos                                | 7.40x10 <sup>8</sup>                                              | 3.70x10 <sup>7</sup>                                         | 1.85x10 <sup>4</sup>      | 7.40x10 <sup>1</sup>      | 7.40x10 <sup>6</sup>      | 7.40x10 <sup>7</sup>      |
| 96 | Curio-240                | W, todos los compuestos                                | 2.22x10 <sup>6</sup><br>Sup. ósea<br>(2.96x10 <sup>6</sup> )      | 2.22x10 <sup>4</sup><br>Sup. ósea<br>(2.22x10 <sup>4</sup> ) | 7.40<br>-                 | -<br>3.33x10 <sup>2</sup> | -<br>3.70x10 <sup>4</sup> | -<br>3.70x10 <sup>5</sup> |

|    |                        |                         |                                 |                                 |                       |                       |                    |                    |
|----|------------------------|-------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 96 | Curio-241              | W, todos los compuestos | $3.70 \times 10^7$              | $1.11 \times 10^6$<br>Sup. ósea | $3.70 \times 10^2$    | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        |                         | -                               | $(1.48 \times 10^6)$            | -                     | 1.85                  | -                  | -                  |
| 96 | Curio-242              | W, todos los compuestos | $1.11 \times 10^6$<br>Sup. ósea | $1.11 \times 10^4$<br>Sup. ósea | 3.70                  | -                     | -                  | -                  |
|    |                        |                         | $(1.85 \times 10^6)$            | $(1.11 \times 10^4)$            | -                     | $1.48 \times 10^{-2}$ | $2.59 \times 10^4$ | $2.59 \times 10^5$ |
| 96 | Curio-243              | W, todos los compuestos | $3.70 \times 10^4$<br>Sup. ósea | $3.33 \times 10^2$<br>Sup. ósea | $1.48 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                        |                         | $(7.40 \times 10^4)$            | $(7.40 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $1.11 \times 10^3$ | $1.11 \times 10^4$ |
| 96 | Curio-244              | W, todos los compuestos | $3.70 \times 10^4$<br>Sup. ósea | $3.70 \times 10^2$<br>Sup. ósea | $1.85 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                        |                         | $(1.11 \times 10^5)$            | $(7.40 \times 10^2)$            | -                     | $1.11 \times 10^{-3}$ | $1.11 \times 10^3$ | $1.11 \times 10^4$ |
| 96 | Curio-245              | W, todos los compuestos | $2.59 \times 10^4$<br>Sup. ósea | $2.22 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                        |                         | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
| 96 | Curio-246              | W, todos los compuestos | $2.59 \times 10^4$<br>Sup. ósea | $2.22 \times 10^2$<br>Sup. Ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                        |                         | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
| 96 | Curio-247              | W, todos los compuestos | $2.96 \times 10^4$<br>Sup. ósea | $2.22 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                        |                         | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
| 96 | Curio-248              | W, todos los compuestos | $7.40 \times 10^3$<br>Sup. ósea | $7.40 \times 10^1$<br>Sup. ósea | $2.59 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                        |                         | $(1.48 \times 10^4)$            | $(1.11 \times 10^2)$            | -                     | $1.48 \times 10^{-4}$ | $1.85 \times 10^2$ | $1.85 \times 10^3$ |
| 96 | Curio-249 <sup>2</sup> | W, todos los compuestos | $1.85 \times 10^9$              | $7.40 \times 10^8$<br>Sup. ósea | $2.59 \times 10^5$    | -                     | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                        |                         | -                               | $(1.11 \times 10^9)$            | -                     | $1.48 \times 10^3$    | -                  | -                  |
| 96 | Curio-250              | W, todos los compuestos | $1.48 \times 10^3$<br>Sup. ósea | $1.11 \times 10^1$<br>Sup. ósea | $3.70 \times 10^{-3}$ | -                     | -                  | -                  |
|    |                        |                         | $(2.22 \times 10^3)$            | $(1.85 \times 10^1)$            | -                     | $2.96 \times 10^{-5}$ | $3.33 \times 10^1$ | $3.33 \times 10^2$ |
| 66 | Disprosio-155          | W, todos los compuestos | $3.33 \times 10^8$              | $1.11 \times 10^9$              | $3.70 \times 10^5$    | $1.48 \times 10^3$    | $3.70 \times 10^6$ | $7.40 \times 10^7$ |
| 66 | Disprosio-157          | W, todos los compuestos | $7.40 \times 10^8$              | $2.22 \times 10^9$              | $1.11 \times 10^6$    | $3.33 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 66 | Disprosio-159          | W, todos los compuestos | $3.70 \times 10^8$              | $7.40 \times 10^7$              | $3.70 \times 10^4$    | $1.11 \times 10^2$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 66 | Disprosio-165          | W, todos los compuestos | $3.70 \times 10^8$              | $1.85 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 66 | Disprosio-166          | W, todos los compuestos | $2.22 \times 10^7$<br>Pared IGI | $2.59 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | -                  | -                  |
|    |                        |                         | $(2.96 \times 10^7)$            | -                               | -                     | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 99 | Einstenio-250          | W, todos los compuestos | $1.48 \times 10^9$              | $1.85 \times 10^7$<br>Sup. ósea | $7.40 \times 10^3$    | -                     | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
|    |                        |                         | -                               | $(3.70 \times 10^7)$            | -                     | $7.40 \times 10^1$    | -                  | -                  |
| 99 | Einstenio-251          | W, todos los compuestos | $2.59 \times 10^8$              | $3.33 \times 10^7$<br>Sup. ósea | $1.48 \times 10^4$    | -                     | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                        |                         | -                               | $(3.70 \times 10^7)$            | -                     | $7.40 \times 10^1$    | -                  | -                  |
| 99 | Einstenio-253          | W, todos los compuestos | $7.40 \times 10^6$              | $3.70 \times 10^4$              | $2.22 \times 10^1$    | $7.40 \times 10^{-2}$ | $7.40 \times 10^4$ | $7.40 \times 10^5$ |
| 99 | Einstenio-254          | W, todos los compuestos | $2.96 \times 10^5$<br>Sup. ósea | $2.59 \times 10^3$<br>Sup. ósea | 1.11                  | -                     | -                  | -                  |
|    |                        |                         | $7.40 \times 10^5$              | $3.70 \times 10^3$              | -                     | $7.40 \times 10^{-3}$ | $7.40 \times 10^3$ | $7.40 \times 10^4$ |
| 99 | Einstenio-254m         | W, todos los compuestos | $1.11 \times 10^7$<br>Pared IGI | $3.70 \times 10^5$              | $1.48 \times 10^2$    | $3.70 \times 10^{-1}$ | -                  | -                  |
|    |                        |                         | $(1.11 \times 10^7)$            | -                               | -                     | -                     | $1.48 \times 10^5$ | $1.48 \times 10^6$ |
| 68 | Erbio-161              | W, todos los compuestos | $7.40 \times 10^8$              | $2.22 \times 10^9$              | $1.11 \times 10^6$    | $3.33 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 68 | Erbio-165              | W, todos los compuestos | $2.22 \times 10^9$              | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $1.11 \times 10^4$    | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
| 68 | Erbio-169              | W, todos los compuestos | $1.11 \times 10^8$<br>Pared IGI | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
|    |                        |                         | $(1.48 \times 10^8)$            | -                               | -                     | -                     | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 68 | Erbio-171              | W, todos los compuestos | $1.48 \times 10^8$              | $3.70 \times 10^8$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 68 | Erbio-172              | W, todos los compuestos | $3.70 \times 10^7$<br>Pared IGI | $3.70 \times 10^7$              | $2.22 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    |                        |                         | $3.70 \times 10^7$              | -                               | -                     | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |

|    |                           |                                                                       |                                              |                                              |                    |                    |                    |                    |
|----|---------------------------|-----------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------|--------------------|--------------------|--------------------|
| 21 | Escandio-43               | Y, todos los compuestos                                               | $2.59 \times 10^8$                           | $7.40 \times 10^8$                           | $3.33 \times 10^5$ | $1.11 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 21 | Escandio-44               | Y, todos los compuestos                                               | $1.48 \times 10^8$                           | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 21 | Escandio-44m              | Y, todos los compuestos                                               | $1.85 \times 10^7$                           | $2.59 \times 10^7$                           | $1.11 \times 10^4$ | $3.70 \times 10^1$ | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 21 | Escandio-46               | Y, todos los compuestos                                               | $3.33 \times 10^7$                           | $7.40 \times 10^6$                           | $3.70 \times 10^3$ | $1.11 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 21 | Escandio-47               | Y, todos los compuestos                                               | $7.40 \times 10^7$<br>Pared IGI              | $1.11 \times 10^8$                           | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                           | Y, todos los compuestos                                               | $1.11 \times 10^8$                           | -                                            | -                  | -                  | $1.48 \times 10^5$ | $1.48 \times 10^7$ |
| 21 | Escandio-48               | Y, todos los compuestos                                               | $2.96 \times 10^7$                           | $3.70 \times 10^7$                           | $2.22 \times 10^4$ | $7.40 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 21 | Escandio-49 <sup>2</sup>  | Y, todos los compuestos                                               | $7.40 \times 10^8$                           | $1.85 \times 10^9$                           | $7.40 \times 10^5$ | $2.96 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 50 | Estaño-110                | D, todos los compuestos excepto los señalados en W                    | $1.48 \times 10^8$                           | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                           | W, sulfuros, óxidos, hidróxidos, haluros, nitratos y fosfato estánico | -                                            | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 50 | Estaño-111 <sup>2</sup>   | D, ver $^{110}\text{Sn}$                                              | $2.59 \times 10^9$                           | $7.40 \times 10^9$                           | $3.33 \times 10^6$ | $1.11 \times 10^4$ | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $1.11 \times 10^{10}$                        | $3.70 \times 10^6$ | $1.48 \times 10^4$ | -                  | -                  |
| 50 | Estaño-113                | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $7.40 \times 10^7$<br>( $7.40 \times 10^7$ ) | $3.70 \times 10^7$                           | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $1.85 \times 10^7$                           | $7.40 \times 10^3$ | $2.96 \times 10^1$ | -                  | -                  |
| 50 | Estaño-117m               | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $7.40 \times 10^7$<br>( $7.40 \times 10^7$ ) | $3.70 \times 10^7$<br>( $7.40 \times 10^7$ ) | $1.85 \times 10^4$ | -                  | -                  | -                  |
|    |                           |                                                                       |                                              |                                              | -                  | $1.11 \times 10^2$ | $1.11 \times 10^5$ | $1.11 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $3.70 \times 10^7$                           | $2.22 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 50 | Estaño-119m               | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $1.11 \times 10^8$<br>( $1.48 \times 10^8$ ) | $7.40 \times 10^7$                           | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $3.70 \times 10^7$                           | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
| 50 | Estaño-121                | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $2.22 \times 10^8$<br>( $2.22 \times 10^8$ ) | $7.40 \times 10^8$                           | $2.22 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 50 | Estaño-121m               | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $1.11 \times 10^8$<br>( $1.48 \times 10^8$ ) | $3.33 \times 10^7$                           | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $1.85 \times 10^7$                           | $7.40 \times 10^3$ | $2.96 \times 10^1$ | -                  | -                  |
| 50 | Estaño-123                | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $1.85 \times 10^7$<br>( $2.22 \times 10^7$ ) | $2.22 \times 10^7$                           | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $7.40 \times 10^6$                           | $2.59 \times 10^3$ | 7.40               | -                  | -                  |
| 50 | Estaño-123m <sup>2</sup>  | D, ver $^{110}\text{Sn}$                                              | $1.85 \times 10^9$                           | $3.70 \times 10^9$                           | $1.85 \times 10^6$ | $7.40 \times 10^3$ | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $3.70 \times 10^9$                           | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 50 | Estaño-125                | D, ver $^{110}\text{Sn}$<br>Pared IGI                                 | $1.48 \times 10^7$<br>( $1.85 \times 10^7$ ) | $3.33 \times 10^7$                           | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $1.48 \times 10^7$                           | $3.70 \times 10^3$ | $1.85 \times 10^1$ | -                  | -                  |
| 50 | Estaño-126                | D, ver $^{110}\text{Sn}$                                              | $1.11 \times 10^7$                           | $2.22 \times 10^6$                           | $7.40 \times 10^2$ | 2.96               | $1.48 \times 10^5$ | $1.48 \times 10^6$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $2.59 \times 10^6$                           | $1.11 \times 10^3$ | 3.33               | -                  | -                  |
| 50 | Estaño-127                | D, ver $^{110}\text{Sn}$                                              | $2.59 \times 10^8$                           | $7.40 \times 10^8$                           | $2.96 \times 10^5$ | $1.11 \times 10^3$ | $3.33 \times 10^6$ | $3.33 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $7.40 \times 10^8$                           | $2.96 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
| 50 | Estaño-128 <sup>2</sup>   | D, ver $^{110}\text{Sn}$                                              | $3.33 \times 10^8$                           | $1.11 \times 10^9$                           | $3.70 \times 10^5$ | $1.48 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                           | W, ver $^{110}\text{Sn}$                                              | -                                            | $1.48 \times 10^9$                           | $3.70 \times 10^5$ | $1.85 \times 10^3$ | -                  | -                  |
| 38 | Estroncio-80 <sup>2</sup> | D, todos los compuestos solubles excepto $\text{SrTiO}_3$             | $1.48 \times 10^8$                           | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                           | Y, todos los compuestos insolubles y $\text{SrTiO}_3$                 | -                                            | $3.70 \times 10^8$                           | $1.85 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 38 | Estroncio-81 <sup>2</sup> | D, ver $^{80}\text{Sr}$                                               | $1.11 \times 10^9$                           | $2.96 \times 10^9$                           | $1.11 \times 10^6$ | $3.70 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                           | Y, ver $^{80}\text{Sr}$                                               | $7.40 \times 10^8$                           | $2.96 \times 10^9$                           | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
| 38 | Estroncio-82              | D, ver $^{80}\text{Sr}$<br>Pared IGI                                  | $1.11 \times 10^7$<br>( $7.40 \times 10^6$ ) | $1.48 \times 10^7$                           | $7.40 \times 10^3$ | $2.22 \times 10^1$ | -                  | -                  |
|    |                           |                                                                       |                                              | -                                            | -                  | -                  | $1.11 \times 10^5$ | $1.11 \times 10^6$ |
|    |                           | Y, ver $^{80}\text{Sr}$                                               | $7.40 \times 10^6$                           | $3.33 \times 10^6$                           | $1.48 \times 10^3$ | 3.70               | -                  | -                  |

|     |                            |                                                                                                                                                               |                                    |                                 |                    |                       |                    |                    |
|-----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|--------------------|-----------------------|--------------------|--------------------|
| 38  | Estroncio-83               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $1.11 \times 10^8$                 | $2.59 \times 10^8$              | $1.11 \times 10^5$ | $3.70 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | $7.40 \times 10^7$                 | $1.48 \times 10^8$              | $3.70 \times 10^4$ | $1.85 \times 10^2$    | -                  | -                  |
| 38  | Estroncio-85m <sup>2</sup> | D, ver $^{80}\text{Sr}$                                                                                                                                       | $7.40 \times 10^9$                 | $2.22 \times 10^{10}$           | $1.11 \times 10^7$ | $3.33 \times 10^4$    | $1.11 \times 10^8$ | $1.11 \times 10^9$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | -                                  | $2.96 \times 10^{10}$           | $1.48 \times 10^7$ | $3.70 \times 10^4$    | -                  | -                  |
| 38  | Estroncio-85               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $1.11 \times 10^8$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$ | $1.48 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | -                                  | $7.40 \times 10^7$              | $2.22 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 38  | Estroncio-87m              | D, ver $^{80}\text{Sr}$                                                                                                                                       | $1.85 \times 10^9$                 | $3.70 \times 10^9$              | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | $1.48 \times 10^9$                 | $7.40 \times 10^9$              | $2.22 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 38  | Estroncio-89               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $2.22 \times 10^7$<br>Pared IGI    | $2.96 \times 10^7$              | $1.48 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
|     |                            |                                                                                                                                                               | $2.22 \times 10^7$                 | -                               | -                  | -                     | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | $1.85 \times 10^7$                 | $3.70 \times 10^6$              | $2.22 \times 10^3$ | 7.40                  | -                  | -                  |
| 38  | Estroncio-90               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $1.11 \times 10^6$<br>Sup. ósea    | $7.40 \times 10^5$<br>Sup. ósea | $2.96 \times 10^2$ | -                     | -                  | -                  |
|     |                            |                                                                                                                                                               | $(1.48 \times 10^6)$               | $7.40 \times 10^5$              | -                  | 1.11                  | $1.85 \times 10^4$ | $1.85 \times 10^5$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | -                                  | $1.48 \times 10^5$              | $7.40 \times 10^1$ | $2.22 \times 10^{-1}$ | -                  | -                  |
| 38  | Estroncio-91               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $7.40 \times 10^7$                 | $2.22 \times 10^8$              | $7.40 \times 10^4$ | $2.96 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | -                                  | $1.48 \times 10^8$              | $3.70 \times 10^4$ | $1.85 \times 10^2$    | -                  | -                  |
| 38  | Estroncio-92               | D, ver $^{80}\text{Sr}$                                                                                                                                       | $1.11 \times 10^8$                 | $3.33 \times 10^8$              | $1.48 \times 10^5$ | $3.70 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|     |                            | Y, ver $^{80}\text{Sr}$                                                                                                                                       | -                                  | $2.59 \times 10^8$              | $1.11 \times 10^5$ | $3.33 \times 10^2$    | -                  | -                  |
| 63  | Europio-145                | W, todos los compuestos                                                                                                                                       | $7.40 \times 10^7$                 | $7.40 \times 10^7$              | $2.96 \times 10^4$ | $1.11 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 63  | Europio-146                | W, todos los compuestos                                                                                                                                       | $3.70 \times 10^7$                 | $3.70 \times 10^7$              | $1.85 \times 10^4$ | $7.40 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 63  | Europio-147                | W, todos los compuestos                                                                                                                                       | $1.11 \times 10^8$                 | $7.40 \times 10^7$              | $2.59 \times 10^4$ | $7.40 \times 10^1$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 63  | Europio-148                | W, todos los compuestos                                                                                                                                       | $3.70 \times 10^7$                 | $1.48 \times 10^7$              | $3.70 \times 10^3$ | $1.85 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 63  | Europio-149                | W, todos los compuestos                                                                                                                                       | $3.70 \times 10^8$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$ | $1.48 \times 10^2$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 63  | Europio-150<br>(12.62h)    | W, todos los compuestos                                                                                                                                       | $2.96 \times 10^7$                 | $7.40 \times 10^5$              | $2.96 \times 10^2$ | 1.11                  | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 63  | Europio-150<br>(34.2y)     | W, todos los compuestos                                                                                                                                       | $2.96 \times 10^7$                 | $7.40 \times 10^5$              | $2.96 \times 10^2$ | 1.11                  | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 63  | Europio-152                | W, todos los compuestos                                                                                                                                       | $2.96 \times 10^7$                 | $7.40 \times 10^5$              | $3.70 \times 10^2$ | 1.11                  | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 63  | Europio-152m               | W, todos los compuestos                                                                                                                                       | $1.11 \times 10^8$                 | $2.22 \times 10^8$              | $1.11 \times 10^5$ | $3.33 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 63  | Europio-154                | W, todos los compuestos                                                                                                                                       | $1.85 \times 10^7$                 | $7.40 \times 10^5$              | $2.96 \times 10^2$ | 1.11                  | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 63  | Europio-155                | W, todos los compuestos                                                                                                                                       | $1.48 \times 10^8$                 | $3.33 \times 10^6$<br>Sup. ósea | $1.48 \times 10^3$ | -                     | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|     |                            |                                                                                                                                                               | -                                  | $(3.70 \times 10^6)$            | -                  | 7.40                  | -                  | -                  |
| 63  | Europio-156                | W, todos los compuestos                                                                                                                                       | $2.22 \times 10^7$                 | $1.85 \times 10^7$              | $7.40 \times 10^3$ | $2.22 \times 10^1$    | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
| 63  | Europio-157                | W, todos los compuestos                                                                                                                                       | $7.40 \times 10^7$                 | $1.85 \times 10^8$              | $7.40 \times 10^4$ | $2.59 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 63  | Europio-158 <sup>2</sup>   | W, todos los compuestos                                                                                                                                       | $7.40 \times 10^8$                 | $2.22 \times 10^9$              | $7.40 \times 10^5$ | $2.96 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 100 | Fermio-252                 | W, todos los compuestos                                                                                                                                       | $1.85 \times 10^7$                 | $3.70 \times 10^5$              | $1.85 \times 10^2$ | $7.40 \times 10^{-1}$ | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
| 100 | Fermio-253                 | W, todos los compuestos                                                                                                                                       | $3.70 \times 10^7$                 | $3.70 \times 10^5$              | $1.48 \times 10^2$ | $3.70 \times 10^{-1}$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 100 | Fermio-254                 | W, todos los compuestos                                                                                                                                       | $1.11 \times 10^8$                 | $3.33 \times 10^6$              | $1.48 \times 10^3$ | 3.70                  | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 100 | Fermio-255                 | W, todos los compuestos                                                                                                                                       | $1.85 \times 10^7$                 | $7.40 \times 10^5$              | $3.33 \times 10^2$ | 1.11                  | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 100 | Fermio-257                 | W, todos los compuestos                                                                                                                                       | $7.40 \times 10^5$<br>Sup. ósea    | $7.40 \times 10^3$<br>Sup. ósea | 2.59               | -                     | -                  | -                  |
|     |                            |                                                                                                                                                               | $(1.48 \times 10^6)$               | $7.40 \times 10^3$              | -                  | $1.11 \times 10^{-2}$ | $1.85 \times 10^4$ | $1.85 \times 10^5$ |
| 9   | Flúor-18 <sup>2</sup>      | D, fluoruros de H, Li, Na, K, Rb, Cs, y Fr                                                                                                                    | $1.85 \times 10^9$<br>Pared Estom. | $2.59 \times 10^9$              | $1.11 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|     |                            |                                                                                                                                                               | $(1.85 \times 10^9)$               | -                               | -                  | -                     | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|     |                            | W, fluoruros de Be, Mg Ca, Sr, Ba, Ra, Al, Ga, In, Tl, As, Sb, Bi, Fe, Ru, Os, Co, Ni, Pd, Pt, Cu, Ag, Au, Zn, Cd, Hg, Sc, Y, Ti, Zr, V, Nb, Ta, Mn, Tc, y Re | -                                  | $3.33 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|     |                            | Y, fluoruro de lantano                                                                                                                                        | -                                  | $2.96 \times 10^9$              | $1.11 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 15  | Fósforo-32                 | D, todos los compuestos excepto los fosfatos señalados en W                                                                                                   | $2.22 \times 10^7$                 | $3.33 \times 10^7$              | $1.48 \times 10^4$ | $3.70 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|     |                            | W, fosfatos de $\text{Zn}^{2+}$ , $\text{S}^{3+}$ , $\text{Mg}^{2+}$ , $\text{Fe}^{3+}$ , $\text{Bi}^{3+}$ , y lantánidos                                     | -                                  | $1.48 \times 10^7$              | $7.40 \times 10^3$ | $1.85 \times 10^1$    | -                  | -                  |

|    |                            |                                                      |                                                              |                                 |                       |                       |                    |                    |
|----|----------------------------|------------------------------------------------------|--------------------------------------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 15 | Fósforo-33                 | D, ver $^{32}\text{P}$                               | $2.22 \times 10^8$                                           | $2.96 \times 10^9$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
|    |                            | W, ver $^{32}\text{P}$                               | -                                                            | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
| 87 | Franco-222 <sup>2</sup>    | D, todos los compuestos                              | $7.40 \times 10^7$                                           | $1.85 \times 10^7$              | $7.40 \times 10^3$    | $2.22 \times 10^1$    | $1.11 \times 10^5$ | $1.11 \times 10^7$ |
| 87 | Franco-223 <sup>2</sup>    | D, todos los compuestos                              | $2.22 \times 10^7$                                           | $2.96 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
| 64 | Gadolinio-145 <sup>2</sup> | D, todos los compuestos excepto los señalados en W   | $1.85 \times 10^9$<br>Pared Estom.<br>( $1.85 \times 10^9$ ) | $7.40 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                            | W, óxidos, hidróxidos, y fluoruros                   | -                                                            | $7.40 \times 10^9$              | $2.59 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
| 64 | Gadolinio-146              | D, ver $^{145}\text{Gd}$                             | $3.70 \times 10^7$                                           | $3.70 \times 10^6$              | $1.85 \times 10^3$    | 7.40                  | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $1.11 \times 10^7$              | $3.70 \times 10^3$    | $1.48 \times 10^1$    | -                  | -                  |
| 64 | Gadolinio-147              | D, ver $^{145}\text{Gd}$                             | $7.40 \times 10^7$                                           | $1.48 \times 10^8$              | $7.40 \times 10^4$    | $2.22 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $1.48 \times 10^8$              | $3.70 \times 10^4$    | $1.85 \times 10^2$    | -                  | -                  |
| 64 | Gadolinio-148              | D, ver $^{145}\text{Gd}$                             | $3.70 \times 10^5$<br>Sup. ósea                              | $2.96 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                            |                                                      | ( $7.40 \times 10^5$ )                                       | ( $7.40 \times 10^6$ )          | -                     | $7.40 \times 10^{-4}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $1.11 \times 10^3$<br>Sup. ósea | $3.70 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                            |                                                      | -                                                            | ( $2.22 \times 10^3$ )          | -                     | $2.96 \times 10^{-3}$ | -                  | -                  |
| 64 | Gadolinio-149              | D, ver $^{145}\text{Gd}$                             | $1.11 \times 10^8$                                           | $7.40 \times 10^7$              | $3.33 \times 10^4$    | $1.11 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $7.40 \times 10^7$              | $3.70 \times 10^4$    | $1.11 \times 10^2$    | -                  | -                  |
| 64 | Gadolinio-151              | D, ver $^{145}\text{Gd}$                             | $2.22 \times 10^8$<br>Sup. ósea                              | $1.48 \times 10^7$<br>Sup. ósea | $7.40 \times 10^3$    | -                     | $3.33 \times 10^6$ | $3.33 \times 10^7$ |
|    |                            |                                                      | -                                                            | ( $2.22 \times 10^7$ )          | -                     | $3.33 \times 10^1$    | -                  | -                  |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $3.70 \times 10^7$              | $1.85 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
| 64 | Gadolinio-152              | D, ver $^{145}\text{Gd}$                             | $7.40 \times 10^5$<br>Sup. ósea                              | $3.70 \times 10^2$<br>Sup. ósea | $1.48 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                            |                                                      | ( $1.11 \times 10^6$ )                                       | ( $7.40 \times 10^2$ )          | -                     | $1.11 \times 10^{-3}$ | $1.48 \times 10^4$ | $1.48 \times 10^5$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $1.48 \times 10^3$<br>Sup. ósea | $7.40 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                            |                                                      | -                                                            | ( $2.96 \times 10^3$ )          | -                     | $3.70 \times 10^{-3}$ | -                  | -                  |
| 64 | Gadolinio-153              | D, ver $^{145}\text{Gd}$                             | $1.85 \times 10^8$<br>Sup. ósea                              | $3.70 \times 10^6$<br>Sup. ósea | $2.22 \times 10^3$    | -                     | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                            |                                                      | -                                                            | ( $7.40 \times 10^6$ )          | -                     | $1.11 \times 10^1$    | -                  | -                  |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $2.22 \times 10^7$              | $7.40 \times 10^3$    | $2.96 \times 10^1$    | -                  | -                  |
| 64 | Gadolinio-159              | D, ver $^{145}\text{Gd}$                             | $1.11 \times 10^8$                                           | $2.96 \times 10^8$              | $1.11 \times 10^5$    | $3.70 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                            | W, ver $^{145}\text{Gd}$                             | -                                                            | $2.22 \times 10^8$              | $7.40 \times 10^4$    | $2.96 \times 10^2$    | -                  | -                  |
| 31 | Galio-65 <sup>2</sup>      | D, todos los compuestos excepto los señalados en W   | $1.85 \times 10^9$<br>Pared Estom.<br>( $2.22 \times 10^9$ ) | $7.40 \times 10^9$              | $2.59 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                            |                                                      | -                                                            | -                               | -                     | -                     | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
|    |                            | W, óxidos, hidróxidos, carburos, haluros, y nitratos | -                                                            | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $1.11 \times 10^4$    | -                  | -                  |
| 31 | Galio-66                   | D, ver $^{65}\text{Ga}$                              | $3.70 \times 10^7$                                           | $1.48 \times 10^8$              | $3.70 \times 10^4$    | $1.85 \times 10^2$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
| 31 | Galio-67                   | D, ver $^{65}\text{Ga}$                              | $2.59 \times 10^8$                                           | $3.70 \times 10^9$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | $3.70 \times 10^5$ | $3.70 \times 10^7$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $3.70 \times 10^8$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | -                  | -                  |
| 31 | Galio-68 <sup>2</sup>      | D, ver $^{65}\text{Ga}$                              | $7.40 \times 10^8$                                           | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $1.85 \times 10^9$              | $7.40 \times 10^5$    | $2.59 \times 10^3$    | -                  | -                  |
| 31 | Galio-70 <sup>2</sup>      | D, ver $^{65}\text{Ga}$                              | $1.85 \times 10^9$<br>Pared Estom.<br>( $2.59 \times 10^9$ ) | $7.40 \times 10^9$              | $2.59 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                            |                                                      | -                                                            | -                               | -                     | -                     | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $1.11 \times 10^4$    | -                  | -                  |
| 31 | Galio-72                   | D, ver $^{65}\text{Ga}$                              | $3.70 \times 10^7$                                           | $1.48 \times 10^8$              | $3.70 \times 10^4$    | $1.85 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
| 31 | Galio-73                   | D, ver $^{65}\text{Ga}$                              | $1.85 \times 10^8$                                           | $7.40 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                            | W, ver $^{65}\text{Ga}$                              | -                                                            | $7.40 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 32 | Germanio-66                | D, todos los compuestos excepto los señalados en W   | $7.40 \times 10^8$                                           | $1.11 \times 10^9$              | $3.70 \times 10^5$    | $1.48 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                            | W, óxidos, sulfuros, y haluros                       | -                                                            | $7.40 \times 10^8$              | $2.96 \times 10^5$    | $1.11 \times 10^3$    | -                  | -                  |
| 32 | Germanio-67 <sup>2</sup>   | D, ver $^{66}\text{Ge}$                              | $1.11 \times 10^9$<br>Pared Estom.<br>( $1.48 \times 10^9$ ) | $3.33 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
|    |                            |                                                      | -                                                            | -                               | -                     | -                     | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
|    |                            | W, ver $^{66}\text{Ge}$                              | -                                                            | $3.70 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |

|    |                          |                                                    |                                    |                                 |                    |                       |                    |                    |
|----|--------------------------|----------------------------------------------------|------------------------------------|---------------------------------|--------------------|-----------------------|--------------------|--------------------|
| 32 | Germanio-68              | D, ver $^{66}\text{Ge}$                            | $1.85 \times 10^8$                 | $1.48 \times 10^8$              | $7.40 \times 10^4$ | $1.85 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $3.70 \times 10^6$              | $1.48 \times 10^3$ | 3.70                  | -                  | -                  |
| 32 | Germanio-69              | D, ver $^{66}\text{Ge}$                            | $3.70 \times 10^8$                 | $7.40 \times 10^8$              | $2.22 \times 10^5$ | $7.40 \times 10^2$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $2.96 \times 10^8$              | $1.11 \times 10^5$ | $3.70 \times 10^2$    | -                  | -                  |
| 32 | Germanio-71              | D, ver $^{66}\text{Ge}$                            | $1.85 \times 10^{10}$              | $1.48 \times 10^{10}$           | $7.40 \times 10^6$ | $2.22 \times 10^4$    | $2.59 \times 10^8$ | $2.59 \times 10^9$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $1.48 \times 10^9$              | $7.40 \times 10^5$ | $2.22 \times 10^3$    | -                  | -                  |
| 32 | Germanio-75 <sup>2</sup> | D, ver $^{66}\text{Ge}$                            | $1.48 \times 10^9$                 | $2.96 \times 10^9$              | $1.11 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                          |                                                    | $2.59 \times 10^9$                 | -                               | -                  | -                     | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $2.96 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 32 | Germanio-77              | D, ver $^{66}\text{Ge}$                            | $3.33 \times 10^8$                 | $3.70 \times 10^8$              | $1.48 \times 10^5$ | $3.70 \times 10^2$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $2.22 \times 10^8$              | $7.40 \times 10^4$ | $2.96 \times 10^2$    | -                  | -                  |
| 32 | Germanio-78 <sup>2</sup> | D, ver $^{66}\text{Ge}$                            | $7.40 \times 10^8$<br>Pared Estom. | $7.40 \times 10^8$              | $3.33 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
|    |                          |                                                    | $(7.40 \times 10^8)$               | -                               | -                  | -                     | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                          | W, ver $^{66}\text{Ge}$                            | -                                  | $7.40 \times 10^8$              | $3.33 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 72 | Hafnio-170               | D, todos los compuestos excepto los señalados en W | $1.11 \times 10^8$                 | $2.22 \times 10^8$              | $7.40 \times 10^4$ | $2.96 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                          | W, óxidos, hidróxidos, carburos, y nitratos        | -                                  | $1.85 \times 10^8$              | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
| 72 | Hafnio-172               | D, ver $^{170}\text{Hf}$                           | $3.70 \times 10^7$                 | $3.33 \times 10^5$<br>Sup. ósea | $1.48 \times 10^2$ | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          |                                                    | -                                  | $(7.40 \times 10^5)$            | -                  | 1.11                  | -                  | -                  |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $1.48 \times 10^6$<br>Sup. ósea | $7.40 \times 10^2$ | -                     | -                  | -                  |
|    |                          |                                                    | -                                  | $(2.22 \times 10^6)$            | -                  | -                     | -                  | -                  |
| 72 | Hafnio-173               | D, ver $^{170}\text{Hf}$                           | $1.85 \times 10^8$                 | $3.70 \times 10^8$              | $1.85 \times 10^5$ | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 72 | Hafnio-175               | D, ver $^{170}\text{Hf}$                           | $1.11 \times 10^8$                 | $3.33 \times 10^7$              | $1.48 \times 10^4$ | -                     | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                          |                                                    | -                                  | $3.70 \times 10^7$              | -                  | $3.70 \times 10^1$    | -                  | -                  |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $3.70 \times 10^7$              | $1.85 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 72 | Hafnio-177m <sup>2</sup> | D, ver $^{170}\text{Hf}$                           | $7.40 \times 10^8$                 | $2.22 \times 10^9$              | $7.40 \times 10^5$ | $2.96 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $3.33 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 72 | Hafnio-178m              | D, ver $^{170}\text{Hf}$                           | $1.11 \times 10^7$                 | $3.70 \times 10^4$<br>Sup. ósea | $1.85 \times 10^1$ | -                     | $1.11 \times 10^5$ | $1.11 \times 10^6$ |
|    |                          |                                                    | -                                  | $(7.40 \times 10^4)$            | -                  | $1.11 \times 10^{-1}$ | -                  | -                  |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $1.85 \times 10^5$<br>Sup. ósea | $7.40 \times 10^1$ | -                     | -                  | -                  |
|    |                          |                                                    | -                                  | $(3.33 \times 10^5)$            | -                  | $3.70 \times 10^{-1}$ | -                  | -                  |
| 72 | Hafnio-179m              | D, ver $^{170}\text{Hf}$                           | $3.70 \times 10^7$                 | $1.11 \times 10^7$<br>Sup. ósea | $3.70 \times 10^3$ | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                          |                                                    | -                                  | $(2.22 \times 10^7)$            | -                  | $2.96 \times 10^1$    | -                  | -                  |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $2.22 \times 10^7$              | $1.11 \times 10^4$ | $2.96 \times 10^1$    | -                  | -                  |
| 72 | Hafnio-180m              | D, ver $^{170}\text{Hf}$                           | $2.59 \times 10^8$                 | $7.40 \times 10^8$              | $3.33 \times 10^5$ | $1.11 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $1.11 \times 10^9$              | $3.70 \times 10^5$ | $1.48 \times 10^3$    | -                  | -                  |
| 72 | Hafnio-181               | D, ver $^{170}\text{Hf}$                           | $3.70 \times 10^7$                 | $7.40 \times 10^6$<br>Sup. ósea | $2.59 \times 10^3$ | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          |                                                    | -                                  | $(1.48 \times 10^7)$            | -                  | $2.22 \times 10^1$    | -                  | -                  |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $1.48 \times 10^7$              | $7.40 \times 10^3$ | $2.22 \times 10^1$    | -                  | -                  |
| 72 | Hafnio-182               | D, ver $^{170}\text{Hf}$                           | $7.40 \times 10^6$<br>Sup. ósea    | $2.96 \times 10^4$<br>Sup. ósea | $1.11 \times 10^1$ | -                     | -                  | -                  |
|    |                          |                                                    | $(1.48 \times 10^7)$               | $(7.40 \times 10^4)$            | -                  | $7.40 \times 10^{-2}$ | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $1.11 \times 10^5$<br>Sup. ósea | $3.70 \times 10^1$ | -                     | -                  | -                  |
|    |                          |                                                    | -                                  | $(2.59 \times 10^5)$            | -                  | $3.70 \times 10^{-1}$ | -                  | -                  |
| 72 | Hafnio-182m <sup>2</sup> | D, ver $^{170}\text{Hf}$                           | $1.48 \times 10^9$                 | $3.33 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $3.70 \times 10^9$              | $2.22 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 72 | Hafnio-183 <sup>2</sup>  | D, ver $^{170}\text{Hf}$                           | $7.40 \times 10^8$                 | $1.85 \times 10^9$              | $7.40 \times 10^5$ | $2.22 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $2.22 \times 10^9$              | $7.40 \times 10^5$ | $2.96 \times 10^3$    | -                  | -                  |
| 72 | Hafnio-184               | D, ver $^{170}\text{Hf}$                           | $7.40 \times 10^7$                 | $2.96 \times 10^8$              | $1.11 \times 10^5$ | $3.70 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                          | W, ver $^{170}\text{Hf}$                           | -                                  | $2.22 \times 10^8$              | $1.11 \times 10^5$ | $3.33 \times 10^2$    | -                  | -                  |

|    |                                     |                                                                                                                                                             |                                                                    |                       |                    |                       |                    |                    |
|----|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------|--------------------|-----------------------|--------------------|--------------------|
| 1  | Hidrógeno-3                         | Agua, CDA incluye absorción.<br>Gas (HT o T2) Sumersión <sup>1</sup> :<br>Usar los valores previos como<br>HT y T2 oxidante en aire y en<br>el cuerpo a HTO | $2.96 \times 10^9$                                                 | $2.96 \times 10^9$    | $7.40 \times 10^5$ | $3.70 \times 10^3$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 26 | Hierro-52                           | D, todos los compuestos<br>excepto los señalados en W                                                                                                       | $3.33 \times 10^7$                                                 | $1.11 \times 10^8$    | $3.70 \times 10^4$ | $1.48 \times 10^2$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                                     | W, óxidos, hidróxidos, y<br>haluros                                                                                                                         | -                                                                  | $7.40 \times 10^7$    | $3.70 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
| 26 | Hierro-55                           | D, ver $^{52}\text{Fe}$                                                                                                                                     | $3.33 \times 10^8$                                                 | $7.40 \times 10^7$    | $2.96 \times 10^4$ | $1.11 \times 10^2$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                                     | W, ver $^{52}\text{Fe}$                                                                                                                                     | -                                                                  | $1.48 \times 10^8$    | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
| 26 | Hierro-59                           | D, ver $^{52}\text{Fe}$                                                                                                                                     | $2.96 \times 10^7$                                                 | $1.11 \times 10^7$    | $3.70 \times 10^3$ | $1.85 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                                     | W, ver $^{52}\text{Fe}$                                                                                                                                     | -                                                                  | $1.85 \times 10^7$    | $7.40 \times 10^3$ | $2.59 \times 10^1$    | -                  | -                  |
| 26 | Hierro-60                           | D, ver $^{52}\text{Fe}$                                                                                                                                     | $1.11 \times 10^6$                                                 | $2.22 \times 10^5$    | $1.11 \times 10^2$ | $3.33 \times 10^{-1}$ | $1.48 \times 10^4$ | $1.48 \times 10^5$ |
|    |                                     | W, ver $^{52}\text{Fe}$                                                                                                                                     | -                                                                  | $7.40 \times 10^5$    | $2.96 \times 10^2$ | 1.11                  | -                  | -                  |
| 67 | Holmio-155 <sup>2</sup>             | W, todos los compuestos                                                                                                                                     | $1.48 \times 10^9$                                                 | $7.40 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$    | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
| 67 | Holmio-157 <sup>2</sup>             | W, todos los compuestos                                                                                                                                     | $1.11 \times 10^{10}$                                              | $3.70 \times 10^{10}$ | $2.22 \times 10^7$ | $7.40 \times 10^4$    | $1.48 \times 10^8$ | $1.48 \times 10^9$ |
| 67 | Holmio-159 <sup>2</sup>             | W, todos los compuestos                                                                                                                                     | $7.40 \times 10^9$                                                 | $3.70 \times 10^{10}$ | $1.48 \times 10^7$ | $3.70 \times 10^4$    | $1.11 \times 10^5$ | $1.11 \times 10^9$ |
| 67 | Holmio-161                          | W, todos los compuestos                                                                                                                                     | $3.70 \times 10^9$                                                 | $1.48 \times 10^{10}$ | $7.40 \times 10^6$ | $2.22 \times 10^4$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 67 | Holmio-162 <sup>2</sup>             | W, todos los compuestos                                                                                                                                     | $1.85 \times 10^{10}$<br>Pared Estom.<br>( $2.96 \times 10^{10}$ ) | $7.40 \times 10^{10}$ | $3.70 \times 10^7$ | $1.11 \times 10^5$    | -                  | -                  |
|    |                                     |                                                                                                                                                             | -                                                                  | -                     | -                  | $3.70 \times 10^8$    | $3.70 \times 10^9$ |                    |
| 67 | Holmio-162m <sup>2</sup>            | W, todos los compuestos                                                                                                                                     | $1.85 \times 10^9$                                                 | $1.11 \times 10^{10}$ | $3.70 \times 10^6$ | $1.48 \times 10^4$    | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
| 67 | Holmio-164 <sup>2</sup>             | W, todos los compuestos                                                                                                                                     | $7.40 \times 10^9$<br>Pared Estom.<br>( $7.40 \times 10^9$ )       | $2.22 \times 10^{10}$ | $1.11 \times 10^7$ | $3.33 \times 10^4$    | -                  | -                  |
|    |                                     |                                                                                                                                                             | -                                                                  | -                     | -                  | $1.11 \times 10^8$    | $1.11 \times 10^9$ |                    |
| 67 | Holmio-164m <sup>2</sup>            | W, todos los compuestos                                                                                                                                     | $3.70 \times 10^9$                                                 | $1.11 \times 10^{10}$ | $3.70 \times 10^6$ | $1.48 \times 10^4$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 67 | Holmio-166                          | W, todos los compuestos                                                                                                                                     | $3.33 \times 10^7$<br>Pared IGI<br>( $3.33 \times 10^7$ )          | $7.40 \times 10^7$    | $2.59 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
|    |                                     |                                                                                                                                                             | -                                                                  | -                     | -                  | $3.70 \times 10^5$    | $3.70 \times 10^6$ |                    |
| 67 | Holmio-166m                         | W, todos los compuestos                                                                                                                                     | $2.22 \times 10^7$                                                 | $2.59 \times 10^5$    | $1.11 \times 10^2$ | $3.33 \times 10^{-1}$ | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
| 67 | Holmio-167                          | W, todos los compuestos                                                                                                                                     | $7.40 \times 10^8$                                                 | $2.22 \times 10^9$    | $7.40 \times 10^5$ | $2.96 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 49 | Indio-109                           | D, todos los compuestos<br>excepto los señalados en W                                                                                                       | $7.40 \times 10^8$                                                 | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                                     | W, óxidos, hidróxidos,<br>haluros, y nitratos                                                                                                               | -                                                                  | $2.22 \times 10^9$    | $1.11 \times 10^6$ | $3.33 \times 10^3$    | -                  | -                  |
| 49 | Indio-110<br>(4.9h)                 | D, ver $^{109}\text{In}$                                                                                                                                    | $1.85 \times 10^8$                                                 | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 49 | Indio-110 <sup>2</sup><br>(69.1min) | D, ver $^{109}\text{In}$                                                                                                                                    | $1.85 \times 10^8$                                                 | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 49 | Indio-111                           | D, ver $^{109}\text{In}$                                                                                                                                    | $1.48 \times 10^8$                                                 | $2.22 \times 10^8$    | $1.11 \times 10^5$ | $3.33 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $2.22 \times 10^8$    | $1.11 \times 10^5$ | $3.33 \times 10^2$    | -                  | -                  |
| 49 | Indio-112 <sup>2</sup>              | D, ver $^{109}\text{In}$                                                                                                                                    | $7.40 \times 10^9$                                                 | $2.22 \times 10^{10}$ | $1.11 \times 10^7$ | $3.33 \times 10^4$    | $7.40 \times 10^7$ | $7.40 \times 10^8$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $2.59 \times 10^{10}$ | $1.11 \times 10^7$ | $3.70 \times 10^4$    | -                  | -                  |
| 49 | Indio-113m <sup>2</sup>             | D, ver $^{109}\text{In}$                                                                                                                                    | $1.85 \times 10^9$                                                 | $3.70 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$    | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $7.40 \times 10^9$    | $2.96 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
| 49 | Indio-114m                          | D, ver $^{109}\text{In}$<br>Pared IGI<br>( $1.48 \times 10^7$ )                                                                                             | $1.11 \times 10^7$<br>Pared IGI<br>( $1.48 \times 10^7$ )          | $2.22 \times 10^6$    | $1.11 \times 10^3$ | 3.33                  | -                  | -                  |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $3.70 \times 10^6$    | $1.48 \times 10^3$ | 3.70                  | -                  | -                  |
| 49 | Indio-115                           | D, ver $^{109}\text{In}$                                                                                                                                    | $1.48 \times 10^6$                                                 | $3.70 \times 10^4$    | $2.22 \times 10^1$ | $7.40 \times 10^{-2}$ | $1.85 \times 10^4$ | $1.85 \times 10^5$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $1.85 \times 10^5$    | $7.40 \times 10^1$ | $2.96 \times 10^{-1}$ | -                  | -                  |
| 49 | Indio-115m                          | D, ver $^{109}\text{In}$                                                                                                                                    | $3.70 \times 10^8$                                                 | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $1.85 \times 10^9$    | $7.40 \times 10^5$ | $2.59 \times 10^3$    | -                  | -                  |
| 49 | Indio-116m <sup>2</sup>             | D, ver $^{109}\text{In}$                                                                                                                                    | $7.40 \times 10^8$                                                 | $2.96 \times 10^9$    | $1.11 \times 10^6$ | $3.70 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 49 | Indio-117 <sup>2</sup>              | D, ver $^{109}\text{In}$                                                                                                                                    | $2.22 \times 10^9$                                                 | $7.40 \times 10^9$    | $2.59 \times 10^6$ | $7.40 \times 10^3$    | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
| 49 | Indio-117m <sup>2</sup>             | D, ver $^{109}\text{In}$                                                                                                                                    | $3.70 \times 10^8$                                                 | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.85 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | -                  | -                  |
| 49 | Indio-119m <sup>2</sup>             | D, ver $^{109}\text{In}$<br>Pared Estom.<br>( $1.85 \times 10^9$ )                                                                                          | $1.48 \times 10^9$<br>Pared Estom.<br>( $1.85 \times 10^9$ )       | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
|    |                                     | W, ver $^{109}\text{In}$                                                                                                                                    | -                                                                  | $3.70 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |

|    |                          |                                                        |                                      |                       |                      |                       |                      |                      |
|----|--------------------------|--------------------------------------------------------|--------------------------------------|-----------------------|----------------------|-----------------------|----------------------|----------------------|
| 77 | Iridio-182 <sup>2</sup>  | D, todos los compuestos excepto los señalados en W y Y | 1.48x10 <sup>9</sup><br>Pared Estom. | 3.70x10 <sup>9</sup>  | 2.22x10 <sup>6</sup> | 7.40x10 <sup>3</sup>  | -                    | -                    |
|    |                          |                                                        | (1.48x10 <sup>9</sup> )              | -                     | -                    | -                     | 2.22x10 <sup>7</sup> | 2.22x10 <sup>8</sup> |
|    |                          | W, haluros, nitratos, e iridio metálico                | -                                    | 7.40x10 <sup>9</sup>  | 2.22x10 <sup>6</sup> | 7.40x10 <sup>3</sup>  | -                    | -                    |
|    |                          | Y, óxidos e hidróxidos                                 | -                                    | 3.70x10 <sup>9</sup>  | 1.85x10 <sup>6</sup> | 7.40x10 <sup>3</sup>  | -                    | -                    |
| 77 | Iridio-184               | D, ver <sup>182</sup> Ir                               | 2.96x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>  | 3.70x10 <sup>5</sup> | 1.11x10 <sup>3</sup>  | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.85x10 <sup>3</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup>  | -                    | -                    |
| 77 | Iridio-185               | D, ver <sup>182</sup> Ir                               | 1.85x10 <sup>8</sup>                 | 3.70x10 <sup>8</sup>  | 1.85x10 <sup>5</sup> | 7.40x10 <sup>2</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 3.70x10 <sup>8</sup>  | 1.85x10 <sup>5</sup> | 7.40x10 <sup>2</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 3.70x10 <sup>8</sup>  | 1.48x10 <sup>5</sup> | 3.70x10 <sup>2</sup>  | -                    | -                    |
| 77 | Iridio-186               | D, ver <sup>182</sup> Ir                               | 7.40x10 <sup>7</sup>                 | 2.96x10 <sup>8</sup>  | 1.11x10 <sup>5</sup> | 3.70x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 2.22x10 <sup>8</sup>  | 1.11x10 <sup>5</sup> | 3.33x10 <sup>2</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 2.22x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.96x10 <sup>2</sup>  | -                    | -                    |
| 77 | Iridio-187               | D, ver <sup>182</sup> Ir                               | 3.70x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.85x10 <sup>3</sup>  | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup>  | -                    | -                    |
| 77 | Iridio-188               | D, ver <sup>182</sup> Ir                               | 7.40x10 <sup>7</sup>                 | 1.85x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.48x10 <sup>8</sup>  | 3.70x10 <sup>4</sup> | 1.85x10 <sup>2</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>8</sup>  | 3.70x10 <sup>4</sup> | 1.85x10 <sup>2</sup>  | -                    | -                    |
| 77 | Iridio-189               | D, ver <sup>182</sup> Ir                               | 1.85x10 <sup>8</sup><br>Pared IGI    | 1.85x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.59x10 <sup>2</sup>  | -                    | -                    |
|    |                          |                                                        | (1.85x10 <sup>8</sup> )              | -                     | -                    | -                     | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.48x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 1.85x10 <sup>2</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 1.48x10 <sup>8</sup>  | 3.70x10 <sup>4</sup> | 1.85x10 <sup>2</sup>  | -                    | -                    |
| 77 | Iridio-190               | D, ver <sup>182</sup> Ir                               | 3.70x10 <sup>7</sup>                 | 3.33x10 <sup>7</sup>  | 1.48x10 <sup>4</sup> | 3.70x10 <sup>1</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 3.70x10 <sup>7</sup>  | 1.48x10 <sup>4</sup> | 3.70x10 <sup>1</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 3.33x10 <sup>7</sup>  | 1.48x10 <sup>4</sup> | 3.70x10 <sup>1</sup>  | -                    | -                    |
| 77 | Iridio-190m <sup>2</sup> | D, ver <sup>182</sup> Ir                               | 7.40x10 <sup>9</sup>                 | 7.40x10 <sup>9</sup>  | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>  | 7.40x10 <sup>7</sup> | 7.40x10 <sup>8</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>9</sup>  | 3.33x10 <sup>6</sup> | 1.11x10 <sup>4</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>9</sup>  | 2.96x10 <sup>6</sup> | 1.11x10 <sup>4</sup>  | -                    | -                    |
| 77 | Iridio-192               | D, ver <sup>182</sup> Ir                               | 3.33x10 <sup>7</sup>                 | 1.11x10 <sup>7</sup>  | 3.70x10 <sup>3</sup> | 1.48x10 <sup>1</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.48x10 <sup>7</sup>  | 7.40x10 <sup>3</sup> | 2.22x10 <sup>1</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>6</sup>  | 3.33x10 <sup>3</sup> | 1.11x10 <sup>1</sup>  | -                    | -                    |
| 77 | Iridio-192m              | D, ver <sup>182</sup> Ir                               | 1.11x10 <sup>8</sup>                 | 3.33x10 <sup>6</sup>  | 1.48x10 <sup>3</sup> | 3.70                  | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>6</sup>  | 3.33x10 <sup>3</sup> | 1.11x10 <sup>1</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>5</sup>  | 2.22x10 <sup>2</sup> | 7.40x10 <sup>-1</sup> | -                    | -                    |
| 77 | Iridio-194               | D, ver <sup>182</sup> Ir                               | 3.70x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>  | 3.70x10 <sup>4</sup> | 1.48x10 <sup>2</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>7</sup>  | 3.33x10 <sup>4</sup> | 1.11x10 <sup>2</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>7</sup>  | 2.96x10 <sup>4</sup> | 1.11x10 <sup>2</sup>  | -                    | -                    |
| 77 | Iridio-194m              | D, ver <sup>182</sup> Ir                               | 2.22x10 <sup>7</sup>                 | 3.33x10 <sup>6</sup>  | 1.48x10 <sup>3</sup> | 3.70                  | 3.33x10 <sup>5</sup> | 3.33x10 <sup>6</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>6</sup>  | 2.59x10 <sup>3</sup> | 7.40                  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 3.70x10 <sup>6</sup>  | 1.48x10 <sup>3</sup> | 3.70                  | -                    | -                    |
| 77 | Iridio-195               | D, ver <sup>182</sup> Ir                               | 3.70x10 <sup>8</sup>                 | 1.48x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 2.22x10 <sup>3</sup>  | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.85x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 2.59x10 <sup>3</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 1.48x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 2.22x10 <sup>3</sup>  | -                    | -                    |
| 77 | Iridio-195m              | D, ver <sup>182</sup> Ir                               | 2.96x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>  | 3.70x10 <sup>5</sup> | 1.11x10 <sup>3</sup>  | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                          | W, ver <sup>182</sup> Ir                               | -                                    | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup>  | -                    | -                    |
|    |                          | Y, ver <sup>182</sup> Ir                               | -                                    | 7.40x10 <sup>8</sup>  | 3.33x10 <sup>5</sup> | 1.11x10 <sup>3</sup>  | -                    | -                    |
| 70 | Iterbio-162 <sup>2</sup> | W, todos los compuestos, excepto los señalados en Y    | 2.59x10 <sup>9</sup>                 | 1.11x10 <sup>10</sup> | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup>  | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                          | Y, óxidos, hidróxidos, y fluoruros                     | -                                    | 1.11x10 <sup>10</sup> | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup>  | -                    | -                    |
| 70 | Iterbio-166              | W, ver <sup>162</sup> Yb                               | 3.70x10 <sup>7</sup>                 | 7.40x10 <sup>7</sup>  | 2.96x10 <sup>4</sup> | 1.11x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                          | Y, ver <sup>162</sup> Yb                               | -                                    | 7.40x10 <sup>7</sup>  | 2.96x10 <sup>4</sup> | 1.11x10 <sup>2</sup>  | -                    | -                    |
| 70 | Iterbio-167 <sup>2</sup> | W, ver <sup>162</sup> Yb                               | 1.11x10 <sup>10</sup>                | 2.96x10 <sup>10</sup> | 1.11x10 <sup>7</sup> | 3.70x10 <sup>4</sup>  | 1.48x10 <sup>8</sup> | 1.48x10 <sup>9</sup> |
|    |                          | Y, ver <sup>162</sup> Yb                               | -                                    | 2.59x10 <sup>10</sup> | 1.11x10 <sup>7</sup> | 3.70x10 <sup>4</sup>  | -                    | -                    |

|    |                          |                                                     |                                    |                              |                    |                       |                    |                    |
|----|--------------------------|-----------------------------------------------------|------------------------------------|------------------------------|--------------------|-----------------------|--------------------|--------------------|
| 70 | Iterbio-169              | W, ver $^{162}\text{Yb}$                            | $7.40 \times 10^7$                 | $2.96 \times 10^7$           | $1.48 \times 10^4$ | $3.70 \times 10^1$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          | Y, ver $^{162}\text{Yb}$                            | -                                  | $2.59 \times 10^7$           | $1.11 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
| 70 | Iterbio-175              | W, ver $^{162}\text{Yb}$                            | $1.11 \times 10^8$<br>Pared IGI    | $1.48 \times 10^8$           | $3.70 \times 10^4$ | $1.85 \times 10^2$    | -                  | -                  |
|    |                          |                                                     | $(1.11 \times 10^8)$               | -                            | -                  | -                     | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 70 | Iterbio-177 <sup>2</sup> | Y, ver $^{162}\text{Yb}$                            | -                                  | $1.11 \times 10^8$           | $3.70 \times 10^4$ | $1.85 \times 10^2$    | -                  | -                  |
|    |                          | W, ver $^{162}\text{Yb}$                            | $7.40 \times 10^8$                 | $1.85 \times 10^9$           | $7.40 \times 10^5$ | $2.59 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 70 | Iterbio-178 <sup>2</sup> | Y, ver $^{162}\text{Yb}$                            | -                                  | $1.85 \times 10^9$           | $7.40 \times 10^5$ | $2.22 \times 10^3$    | -                  | -                  |
|    |                          | W, ver $^{162}\text{Yb}$                            | $3.70 \times 10^8$                 | $1.48 \times 10^9$           | $7.40 \times 10^5$ | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 36 | Kriptón-74 <sup>2</sup>  | Y, ver $^{162}\text{Yb}$                            | -                                  | $1.48 \times 10^9$           | $7.40 \times 10^5$ | $1.85 \times 10^3$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $1.11 \times 10^5$ | $3.70 \times 10^2$    | -                  | -                  |
| 36 | Kriptón-76               | Sumersión <sup>1</sup>                              | -                                  | -                            | $3.33 \times 10^5$ | $1.48 \times 10^3$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $1.48 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 36 | Kriptón-77 <sup>2</sup>  | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^5$ | $2.59 \times 10^3$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $2.59 \times 10^7$ | $1.11 \times 10^5$    | -                  | -                  |
| 36 | Kriptón-81               | Sumersión <sup>1</sup>                              | -                                  | -                            | $3.70 \times 10^8$ | $1.85 \times 10^6$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $3.70 \times 10^8$ | $1.85 \times 10^6$    | -                  | -                  |
| 36 | Kriptón-83m <sup>2</sup> | Sumersión <sup>1</sup>                              | -                                  | -                            | $3.70 \times 10^8$ | $1.85 \times 10^6$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $3.70 \times 10^6$ | $2.59 \times 10^4$    | -                  | -                  |
| 36 | Kriptón-85               | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^5$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^5$ | $3.70 \times 10^3$    | -                  | -                  |
| 36 | Kriptón-85m              | Sumersión <sup>1</sup>                              | -                                  | -                            | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^4$ | $3.33 \times 10^2$    | -                  | -                  |
| 36 | Kriptón-87 <sup>2</sup>  | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^5$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                          | Sumersión <sup>1</sup>                              | -                                  | -                            | $7.40 \times 10^4$ | $3.33 \times 10^2$    | -                  | -                  |
| 57 | Lantano-131 <sup>2</sup> | D, todos los compuestos excepto los señalados en W  | $1.85 \times 10^9$                 | $3.70 \times 10^9$           | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
|    |                          | W, óxidos y hidróxidos                              | -                                  | $7.40 \times 10^9$           | $2.59 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 57 | Lantano-132              | D, ver $^{131}\text{La}$                            | $1.11 \times 10^8$                 | $3.70 \times 10^8$           | $1.48 \times 10^5$ | $3.70 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.70 \times 10^8$           | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 57 | Lantano-135              | D, ver $^{131}\text{La}$                            | $1.48 \times 10^9$                 | $3.70 \times 10^9$           | $1.48 \times 10^6$ | $3.70 \times 10^3$    | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.33 \times 10^9$           | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 57 | Lantano-137              | D, ver $^{131}\text{La}$                            | $3.70 \times 10^8$                 | $2.22 \times 10^6$<br>Hígado | $1.11 \times 10^3$ | -                     | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                          |                                                     | -                                  | $(2.59 \times 10^6)$         | -                  | 3.70                  | -                  | -                  |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $1.11 \times 10^7$<br>Hígado | $3.70 \times 10^3$ | -                     | -                  | -                  |
|    |                          |                                                     | -                                  | $(1.11 \times 10^7)$         | -                  | $1.48 \times 10^1$    | -                  | -                  |
| 57 | Lantano-138              | D, ver $^{131}\text{La}$                            | $3.33 \times 10^7$                 | $1.48 \times 10^5$           | $3.70 \times 10^1$ | $1.85 \times 10^{-1}$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.70 \times 10^5$           | $2.22 \times 10^2$ | $7.40 \times 10^{-1}$ | -                  | -                  |
| 57 | Lantano-140              | D, ver $^{131}\text{La}$                            | $2.22 \times 10^7$                 | $3.70 \times 10^7$           | $2.22 \times 10^4$ | $7.40 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.70 \times 10^7$           | $1.85 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 57 | Lantano-141              | D, ver $^{131}\text{La}$                            | $1.48 \times 10^8$                 | $3.33 \times 10^8$           | $1.48 \times 10^5$ | $3.70 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.70 \times 10^8$           | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 57 | Lantano-142 <sup>2</sup> | D, ver $^{131}\text{La}$                            | $2.96 \times 10^8$                 | $7.40 \times 10^8$           | $3.33 \times 10^5$ | $1.11 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $1.11 \times 10^9$           | $3.70 \times 10^5$ | $1.85 \times 10^3$    | -                  | -                  |
| 57 | Lantano-143 <sup>2</sup> | D, ver $^{131}\text{La}$                            | $1.48 \times 10^9$<br>Pared Estom. | $3.70 \times 10^9$           | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                          |                                                     | $(1.48 \times 10^9)$               | -                            | -                  | -                     | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                          | W, ver $^{131}\text{La}$                            | -                                  | $3.33 \times 10^9$           | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 71 | Lutecio-169              | W, todos los compuestos, excepto los señalados en Y | $1.11 \times 10^8$                 | $1.48 \times 10^8$           | $7.40 \times 10^4$ | $2.22 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                          | Y, óxidos, hidróxidos, y fluoruros                  | -                                  | $1.48 \times 10^8$           | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
| 71 | Lutecio-170              | W, ver $^{169}\text{Lu}$                            | $3.70 \times 10^7$                 | $7.40 \times 10^7$           | $3.33 \times 10^4$ | $1.11 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                          | Y, ver $^{169}\text{Lu}$                            | -                                  | $7.40 \times 10^7$           | $2.96 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
| 71 | Lutecio-171              | W, ver $^{169}\text{Lu}$                            | $7.40 \times 10^7$                 | $7.40 \times 10^7$           | $2.96 \times 10^4$ | $1.11 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                          | Y, ver $^{169}\text{Lu}$                            | -                                  | $7.40 \times 10^7$           | $2.96 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
| 71 | Lutecio-172              | W, ver $^{169}\text{Lu}$                            | $3.70 \times 10^7$                 | $3.70 \times 10^7$           | $1.85 \times 10^4$ | $7.40 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                          | Y, ver $^{169}\text{Lu}$                            | -                                  | $3.70 \times 10^7$           | $1.85 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 71 | Lutecio-173              | W, ver $^{169}\text{Lu}$                            | $1.85 \times 10^8$<br>Sup. ósea    | $3.70 \times 10^3$           | -                  | $2.59 \times 10^6$    | $2.59 \times 10^7$ |                    |
|    |                          |                                                     | -                                  | $(1.85 \times 10^7)$         | -                  | $2.22 \times 10^1$    | -                  | -                  |
|    |                          | Y, ver $^{169}\text{Lu}$                            | -                                  | $1.11 \times 10^7$           | $3.70 \times 10^3$ | $1.48 \times 10^1$    | -                  | -                  |

|     |                            |                                                      |                                    |                                 |                    |                       |                    |                    |
|-----|----------------------------|------------------------------------------------------|------------------------------------|---------------------------------|--------------------|-----------------------|--------------------|--------------------|
| 71  | Lutecio-174                | W, ver $^{169}\text{Lu}$                             | $1.85 \times 10^8$                 | $3.70 \times 10^6$<br>Sup. ósea | $1.85 \times 10^3$ | -                     | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|     |                            |                                                      | -                                  | $(7.40 \times 10^6)$            | -                  | $1.11 \times 10^1$    | -                  | -                  |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^6$              | $2.22 \times 10^3$ | 7.40                  | -                  | -                  |
| 71  | Lutecio-174m               | W, ver $^{169}\text{Lu}$                             | $7.40 \times 10^7$<br>Pared IGI    | $7.40 \times 10^6$<br>Sup. ósea | $3.70 \times 10^3$ | -                     | -                  | -                  |
|     |                            |                                                      | $(1.11 \times 10^8)$               | $(1.11 \times 10^7)$            | -                  | $1.85 \times 10^1$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^6$              | $3.33 \times 10^3$ | $1.11 \times 10^1$    | -                  | -                  |
| 71  | Lutecio-176                | W, ver $^{169}\text{Lu}$                             | $2.59 \times 10^7$                 | $1.85 \times 10^5$<br>Sup. ósea | $7.40 \times 10^1$ | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|     |                            |                                                      | -                                  | $(3.70 \times 10^5)$            | -                  | $7.40 \times 10^{-1}$ | -                  | -                  |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $2.96 \times 10^5$              | $1.11 \times 10^2$ | $3.70 \times 10^{-1}$ | -                  | -                  |
| 71  | Lutecio-176m               | W, ver $^{169}\text{Lu}$                             | $2.96 \times 10^8$                 | $1.11 \times 10^9$              | $3.70 \times 10^5$ | $1.11 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^8$              | $3.33 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 71  | Lutecio-177                | W, ver $^{169}\text{Lu}$                             | $7.40 \times 10^7$<br>Pared IGI    | $7.40 \times 10^7$              | $3.33 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
|     |                            |                                                      | $(1.11 \times 10^8)$               | -                               | -                  | -                     | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^7$              | $3.33 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
| 71  | Lutecio-177m               | W, ver $^{169}\text{Lu}$                             | $2.59 \times 10^7$                 | $3.70 \times 10^6$<br>Sup. ósea | $1.85 \times 10^3$ | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|     |                            |                                                      | -                                  | $(3.70 \times 10^6)$            | -                  | 7.40                  | -                  | -                  |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $2.96 \times 10^6$              | $1.11 \times 10^3$ | 3.70                  | -                  | -                  |
| 71  | Lutecio-178 <sup>2</sup>   | W, ver $^{169}\text{Lu}$                             | $1.48 \times 10^9$<br>Pared Estom. | $3.70 \times 10^9$              | $1.85 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
|     |                            |                                                      | $(1.48 \times 10^9)$               | -                               | -                  | -                     | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $3.70 \times 10^9$              | $1.85 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 71  | Lutecio-178m <sup>2</sup>  | W, ver $^{169}\text{Lu}$                             | $1.85 \times 10^9$<br>Pared Estom. | $7.40 \times 10^9$              | $2.96 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|     |                            |                                                      | $(2.22 \times 10^9)$               | -                               | -                  | -                     | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^9$              | $2.59 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 71  | Lutecio-179                | W, ver $^{169}\text{Lu}$                             | $2.22 \times 10^8$                 | $7.40 \times 10^8$              | $2.96 \times 10^5$ | $1.11 \times 10^3$    | $3.33 \times 10^6$ | $3.33 \times 10^7$ |
|     |                            | Y, ver $^{169}\text{Lu}$                             | -                                  | $7.40 \times 10^8$              | $2.22 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 12  | Magnesio-28                | D, todos los compuestos excepto los señalados en W   | $2.59 \times 10^7$                 | $7.40 \times 10^7$              | $2.59 \times 10^4$ | $7.40 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|     |                            | W, óxidos, hidróxidos, carburos, haluros, y nitratos | -                                  | $3.70 \times 10^7$              | $1.85 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 25  | Manganeso-51 <sup>2</sup>  | D, todos los compuestos excepto los señalados en W   | $7.40 \times 10^8$                 | $1.85 \times 10^9$              | $7.40 \times 10^5$ | $2.59 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|     |                            | W, óxidos, hidróxidos, haluros, y nitratos           | -                                  | $2.22 \times 10^9$              | $1.11 \times 10^6$ | $2.96 \times 10^3$    | -                  | -                  |
| 25  | Manganeso-52               | D, ver $^{51}\text{Mn}$                              | $2.59 \times 10^7$                 | $3.70 \times 10^7$              | $1.85 \times 10^4$ | $7.40 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|     |                            | W, ver $^{51}\text{Mn}$                              | -                                  | $3.33 \times 10^7$              | $1.48 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
| 25  | Manganeso-52m <sup>2</sup> | D, ver $^{51}\text{Mn}$                              | $1.11 \times 10^9$<br>Pared Estom. | $3.33 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|     |                            |                                                      | $(1.48 \times 10^9)$               | -                               | -                  | -                     | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|     |                            | W, ver $^{51}\text{Mn}$                              | -                                  | $3.70 \times 10^9$              | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 25  | Manganeso-53               | D, ver $^{51}\text{Mn}$                              | $1.85 \times 10^9$                 | $3.70 \times 10^8$<br>Sup. ósea | $1.85 \times 10^5$ | -                     | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|     |                            |                                                      | -                                  | $(7.40 \times 10^8)$            | -                  | $1.11 \times 10^3$    | -                  | -                  |
|     |                            | W, ver $^{51}\text{Mn}$                              | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 25  | Manganeso-54               | D, ver $^{51}\text{Mn}$                              | $7.40 \times 10^7$                 | $3.33 \times 10^7$              | $1.48 \times 10^4$ | $3.70 \times 10^1$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|     |                            | W, ver $^{51}\text{Mn}$                              | -                                  | $2.96 \times 10^7$              | $1.11 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
| 25  | Manganeso-56               | D, ver $^{51}\text{Mn}$                              | $1.85 \times 10^8$                 | $7.40 \times 10^8$              | $2.22 \times 10^5$ | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|     |                            | W, ver $^{51}\text{Mn}$                              | -                                  | $7.40 \times 10^8$              | $3.33 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
| 101 | Mendelevio-257             | W, todos los compuestos                              | $2.59 \times 10^8$                 | $2.96 \times 10^6$<br>Sup. ósea | $1.48 \times 10^3$ | -                     | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|     |                            |                                                      | -                                  | $(3.33 \times 10^6)$            | -                  | 3.70                  | -                  | -                  |
| 101 | Mendelevio-258             | W, todos los compuestos                              | $1.11 \times 10^6$<br>Sup. ósea    | $7.40 \times 10^3$<br>Sup. ósea | 3.70               |                       |                    |                    |
|     |                            |                                                      | $1.85 \times 10^6$                 | $1.11 \times 10^4$              | -                  | $1.85 \times 10^{-2}$ | $2.22 \times 10^4$ | $2.22 \times 10^5$ |

|    |                            |                                                      |                        |                    |                    |                    |                    |                    |
|----|----------------------------|------------------------------------------------------|------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 80 | Mercurio-193               | Vapor                                                | -                      | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.48 \times 10^3$ | -                  | -                  |
|    |                            | Orgánico D                                           | $7.40 \times 10^8$     | $2.22 \times 10^9$ | $1.11 \times 10^6$ | $3.33 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $7.40 \times 10^8$     | $1.48 \times 10^9$ | $7.40 \times 10^5$ | $2.22 \times 10^3$ | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $1.48 \times 10^9$ | $7.40 \times 10^5$ | $2.22 \times 10^3$ | -                  | -                  |
| 80 | Mercurio-193m              | Vapor                                                | -                      | $2.96 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
|    |                            | Orgánico D                                           | $1.48 \times 10^8$     | $3.70 \times 10^8$ | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                            | D, sulfatos                                          | $1.11 \times 10^8$     | $3.33 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                            | W, óxidos, hidróxidos, haluros, nitratos, y sulfuros | -                      | $2.96 \times 10^8$ | $1.11 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
| 80 | Mercurio-194               | Vapor                                                | -                      | $1.11 \times 10^6$ | $3.70 \times 10^2$ | 1.48               | -                  | -                  |
|    |                            | Orgánico D                                           | $7.40 \times 10^5$     | $1.11 \times 10^6$ | $3.70 \times 10^2$ | 1.48               | $7.40 \times 10^3$ | $7.40 \times 10^4$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $2.96 \times 10^7$     | $1.48 \times 10^6$ | $7.40 \times 10^2$ | 2.22               | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $3.70 \times 10^6$ | $1.85 \times 10^3$ | 7.40               | -                  | -                  |
| 80 | Mercurio-195               | Vapor                                                | -                      | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.48 \times 10^3$ | -                  | -                  |
|    |                            | Orgánico D                                           | $7.40 \times 10^8$     | $1.85 \times 10^9$ | $7.40 \times 10^5$ | $2.22 \times 10^3$ | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $3.70 \times 10^8$     | $1.48 \times 10^9$ | $3.70 \times 10^5$ | $1.85 \times 10^3$ | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.85 \times 10^3$ | -                  | -                  |
| 80 | Mercurio-195m              | Vapor                                                | -                      | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $2.22 \times 10^2$ | -                  | -                  |
|    |                            | Orgánico D                                           | $1.11 \times 10^8$     | $2.22 \times 10^8$ | $1.11 \times 10^5$ | $2.96 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $7.40 \times 10^7$     | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.59 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |
| 80 | Mercurio-197               | Vapor                                                | -                      | $2.96 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
|    |                            | Orgánico D                                           | $2.59 \times 10^8$     | $3.70 \times 10^8$ | $2.22 \times 10^5$ | $7.40 \times 10^2$ | $3.33 \times 10^6$ | $3.33 \times 10^7$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $2.22 \times 10^8$     | $3.70 \times 10^8$ | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $3.33 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
| 80 | Mercurio-197m              | Vapor                                                | -                      | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.59 \times 10^2$ | -                  | -                  |
|    |                            | Orgánico D                                           | $1.48 \times 10^8$     | $3.33 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $1.11 \times 10^8$     | $2.59 \times 10^8$ | $1.11 \times 10^5$ | $3.70 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.59 \times 10^2$ | -                  | -                  |
| 80 | Mercurio-199m <sup>2</sup> | Vapor                                                | -                      | $2.96 \times 10^9$ | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
|    |                            | Orgánico D                                           | $2.22 \times 10^9$     | $7.40 \times 10^9$ | $2.59 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                            |                                                      | ( $3.70 \times 10^9$ ) | -                  | -                  | -                  | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $2.22 \times 10^9$     | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
| 80 | Mercurio-203               | Vapor                                                | -                      | $2.96 \times 10^7$ | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                            | Orgánico D                                           | $1.85 \times 10^7$     | $2.96 \times 10^7$ | $1.11 \times 10^4$ | $3.70 \times 10^1$ | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
|    |                            | D, ver $^{193m}\text{Hg}$                            | $7.40 \times 10^7$     | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | W, ver $^{193m}\text{Hg}$                            | -                      | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 42 | Molibdeno-90               | D, todos los compuestos excepto los señalados en Y   | $1.48 \times 10^8$     | $2.59 \times 10^8$ | $1.11 \times 10^5$ | $3.70 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | Y, óxidos, hidróxidos, y $\text{MoS}_2$              | $7.40 \times 10^7$     | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.22 \times 10^2$ | -                  | -                  |
| 42 | Molibdeno-93               | D, ver $^{90}\text{Mo}$                              | $1.48 \times 10^8$     | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.96 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                            | Y, ver $^{90}\text{Mo}$                              | $7.40 \times 10^8$     | $7.40 \times 10^6$ | $2.96 \times 10^3$ | 7.40               | -                  | -                  |
| 42 | Molibdeno-93m              | D, ver $^{90}\text{Mo}$                              | $3.33 \times 10^8$     | $7.40 \times 10^8$ | $2.59 \times 10^5$ | $7.40 \times 10^2$ | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                            | Y, ver $^{90}\text{Mo}$                              | $1.48 \times 10^8$     | $3.70 \times 10^8$ | $2.22 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 42 | Molibdeno-99               | D, ver $^{90}\text{Mo}$                              | $7.40 \times 10^7$     | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                            |                                                      | ( $3.70 \times 10^7$ ) | -                  | -                  | -                  | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                            | Y, ver $^{90}\text{Mo}$                              | $3.70 \times 10^7$     | $3.70 \times 10^7$ | $2.22 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 42 | Molibdeno-101 <sup>2</sup> | D, ver $^{90}\text{Mo}$                              | $1.48 \times 10^9$     | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                            |                                                      | ( $1.85 \times 10^9$ ) | -                  | -                  | -                  | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                            | Y, ver $^{90}\text{Mo}$                              | -                      | $3.70 \times 10^9$ | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |

|    |                                          |                                                     |                                      |                                   |                       |                       |                      |                      |
|----|------------------------------------------|-----------------------------------------------------|--------------------------------------|-----------------------------------|-----------------------|-----------------------|----------------------|----------------------|
| 60 | Neodimio-136 <sup>2</sup>                | W, todos los compuestos, excepto los señalados en Y | 3.70x10 <sup>8</sup>                 | 2.22x10 <sup>9</sup>              | 7.40x10 <sup>5</sup>  | 2.96x10 <sup>3</sup>  | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                                          | Y, óxidos, hidróxidos, carburos, y fluoruros        | -                                    | 1.85x10 <sup>9</sup>              | 7.40x10 <sup>5</sup>  | 2.96x10 <sup>3</sup>  | -                    | -                    |
| 60 | Neodimio-138                             | W, ver <sup>136</sup> Nd                            | 7.40x10 <sup>7</sup>                 | 2.22x10 <sup>8</sup>              | 1.11x10 <sup>5</sup>  | 3.33x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 1.85x10 <sup>8</sup>              | 7.40x10 <sup>4</sup>  | 2.59x10 <sup>2</sup>  | -                    | -                    |
| 60 | Neodimio-139 <sup>2</sup>                | W, ver <sup>136</sup> Nd                            | 3.33x10 <sup>9</sup>                 | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup>  | 1.85x10 <sup>4</sup>  | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup>  | 1.48x10 <sup>4</sup>  | -                    | -                    |
| 60 | Neodimio-139m                            | W, ver <sup>136</sup> Nd                            | 1.85x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 2.59x10 <sup>5</sup>  | 7.40x10 <sup>2</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 3.70x10 <sup>8</sup>              | 2.22x10 <sup>5</sup>  | 7.40x10 <sup>2</sup>  | -                    | -                    |
| 60 | Neodimio-141                             | W, ver <sup>136</sup> Nd                            | 7.40x10 <sup>9</sup>                 | 2.59x10 <sup>10</sup>             | 1.11x10 <sup>7</sup>  | 3.70x10 <sup>4</sup>  | 7.40x10 <sup>7</sup> | 7.40x10 <sup>8</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 2.22x10 <sup>10</sup>             | 1.11x10 <sup>7</sup>  | 3.33x10 <sup>4</sup>  | -                    | -                    |
| 60 | Neodimio-147                             | W, ver <sup>136</sup> Nd                            | 3.70x10 <sup>7</sup><br>Pared IGI    | 3.33x10 <sup>7</sup>              | 1.48x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | -                    | -                    |
|    |                                          |                                                     | 3.70x10 <sup>7</sup>                 | -                                 | -                     | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 2.96x10 <sup>7</sup>              | 1.48x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | -                    | -                    |
| 60 | Neodimio-149 <sup>2</sup>                | W, ver <sup>136</sup> Nd                            | 3.70x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.48x10 <sup>3</sup>  | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 7.40x10 <sup>8</sup>              | 3.70x10 <sup>5</sup>  | 1.11x10 <sup>3</sup>  | -                    | -                    |
| 60 | Neodimio-151 <sup>2</sup>                | W, ver <sup>136</sup> Nd                            | 2.59x10 <sup>9</sup>                 | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup>  | 1.11x10 <sup>4</sup>  | 3.33x10 <sup>7</sup> | 3.33x10 <sup>8</sup> |
|    |                                          | Y, ver <sup>136</sup> Nd                            | -                                    | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup>  | 1.11x10 <sup>4</sup>  | -                    | -                    |
| 93 | Neptunio-232 <sup>2</sup>                | W, todos los compuestos                             | 3.70x10 <sup>9</sup>                 | 7.40x10 <sup>7</sup><br>Sup. ósea | 2.59x10 <sup>4</sup>  | -                     | 7.40x10 <sup>7</sup> | 7.40x10 <sup>8</sup> |
|    |                                          |                                                     | -                                    | (1.85x10 <sup>7</sup> )           | -                     | 2.22x10 <sup>2</sup>  | -                    | -                    |
| 93 | Neptunio-233 <sup>2</sup>                | W, todos los compuestos                             | 2.96x10 <sup>10</sup>                | 1.11x10 <sup>11</sup>             | 3.70x10 <sup>7</sup>  | 1.48x10 <sup>5</sup>  | 3.70x10 <sup>8</sup> | 3.70x10 <sup>9</sup> |
| 93 | Neptunio-234                             | W, todos los compuestos                             | 7.40x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>              | 3.70x10 <sup>4</sup>  | 1.48x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
| 93 | Neptunio-235                             | W, todos los compuestos                             | 7.40x10 <sup>8</sup><br>Pared IGI    | 2.96x10 <sup>7</sup><br>Sup. ósea | 1.11x10 <sup>4</sup>  | -                     | -                    | -                    |
|    |                                          |                                                     | (7.40x10 <sup>8</sup> )              | (3.70x10 <sup>7</sup> )           | -                     | 7.40x10 <sup>1</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
| 93 | Neptunio-236<br>(22.5 h)                 | W, todos los compuestos                             | 1.11x10 <sup>8</sup><br>Sup. ósea    | 1.11x10 <sup>6</sup><br>Sup. ósea | 3.70x10 <sup>2</sup>  | -                     | -                    | -                    |
|    |                                          |                                                     | (1.48x10 <sup>8</sup> )              | (2.59x10 <sup>6</sup> )           | -                     | 3.70                  | 1.85x10 <sup>6</sup> | 1.85x10 <sup>7</sup> |
| 93 | Neptunio-236<br>(1.15x10 <sup>5</sup> y) | W, todos los compuestos                             | 1.11x10 <sup>5</sup><br>Sup. ósea    | 7.40x10 <sup>2</sup><br>Sup. ósea | 3.33x10 <sup>-1</sup> | -                     | -                    | -                    |
|    |                                          |                                                     | (2.22x10 <sup>5</sup> )              | (1.85)                            | -                     | 2.96x10 <sup>-3</sup> | 3.33x10 <sup>3</sup> | 3.33x10 <sup>4</sup> |
| 93 | Neptunio-237                             | W, todos los compuestos                             | 1.85x10 <sup>4</sup><br>Sup. ósea    | 1.48x10 <sup>2</sup><br>Sup. ósea | 7.40x10 <sup>-2</sup> | -                     | -                    | -                    |
|    |                                          |                                                     | (3.70x10 <sup>4</sup> )              | (3.70x10 <sup>2</sup> )           | -                     | 3.70x10 <sup>-4</sup> | 7.40x10 <sup>2</sup> | 7.40x10 <sup>3</sup> |
| 93 | Neptunio-238                             | W, todos los compuestos                             | 3.70x10 <sup>7</sup>                 | 2.22x10 <sup>6</sup><br>Sup. ósea | 1.11x10 <sup>3</sup>  | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                                          |                                                     | -                                    | (7.40x10 <sup>6</sup> )           | -                     | 7.40                  | -                    | -                    |
| 93 | Neptunio-239                             | W, todos los compuestos                             | 7.40x10 <sup>7</sup><br>Pared IGI    | 7.40x10 <sup>7</sup>              | 3.33x10 <sup>4</sup>  | 1.11x10 <sup>2</sup>  | -                    | -                    |
|    |                                          |                                                     | 7.40x10 <sup>7</sup>                 | -                                 | -                     | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
| 93 | Neptunio-240 <sup>2</sup>                | W, todos los compuestos                             | 7.40x10 <sup>8</sup>                 | 2.96x10 <sup>9</sup>              | 1.11x10 <sup>6</sup>  | 3.70x10 <sup>3</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
| 41 | Niobio-88 <sup>2</sup>                   | W, todos los compuestos, excepto los señalados en Y | 1.85x10 <sup>9</sup><br>Pared Estom. | 7.40x10 <sup>9</sup>              | 3.33x10 <sup>6</sup>  | 1.11x10 <sup>4</sup>  | -                    | -                    |
|    |                                          |                                                     | (2.59x10 <sup>9</sup> )              | -                                 | -                     | -                     | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                                          | Y, óxidos e hidróxidos                              | -                                    | 7.40x10 <sup>9</sup>              | 3.33x10 <sup>6</sup>  | 1.11x10 <sup>4</sup>  | -                    | -                    |
| 41 | Niobio-89<br>(122 min)                   | W, ver <sup>88</sup> Nb                             | 1.85x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 2.96x10 <sup>5</sup>  | 1.11x10 <sup>3</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>88</sup> Nb                             | -                                    | 7.40x10 <sup>8</sup>              | 2.22x10 <sup>5</sup>  | 7.40x10 <sup>2</sup>  | -                    | -                    |
| 41 | Niobio-89m<br>(66min)                    | W, ver <sup>88</sup> Nb                             | 3.70x10 <sup>8</sup>                 | 1.48x10 <sup>9</sup>              | 7.40x10 <sup>5</sup>  | 2.22x10 <sup>3</sup>  | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>88</sup> Nb                             | -                                    | 1.48x10 <sup>9</sup>              | 7.40x10 <sup>5</sup>  | 1.85x10 <sup>3</sup>  | -                    | -                    |
| 41 | Niobio-90                                | W, ver <sup>88</sup> Nb                             | 3.70x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>              | 3.70x10 <sup>4</sup>  | 1.48x10 <sup>2</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                                          | Y, ver <sup>88</sup> Nb                             | -                                    | 7.40x10 <sup>7</sup>              | 3.70x10 <sup>4</sup>  | 1.11x10 <sup>2</sup>  | -                    | -                    |
| 41 | Niobio-93m                               | W, ver <sup>88</sup> Nb                             | 3.33x10 <sup>8</sup><br>Pared IGI    | 7.40x10 <sup>7</sup>              | 2.96x10 <sup>4</sup>  | 1.11x10 <sup>2</sup>  | -                    | -                    |
|    |                                          |                                                     | (3.70x10 <sup>8</sup> )              | -                                 | -                     | -                     | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                                          | Y, ver <sup>88</sup> Nb                             | -                                    | 7.40x10 <sup>6</sup>              | 2.59x10 <sup>3</sup>  | 7.40                  | -                    | -                    |
| 41 | Niobio-94                                | W, ver <sup>88</sup> Nb                             | 3.33x10 <sup>7</sup>                 | 7.40x10 <sup>6</sup>              | 2.96x10 <sup>3</sup>  | 1.11x10 <sup>1</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                                          | Y, ver <sup>88</sup> Nb                             | -                                    | 7.40x10 <sup>5</sup>              | 2.22x10 <sup>2</sup>  | 7.40x10 <sup>-1</sup> | -                    | -                    |

|    |                        |                                                    |                                 |                    |                    |                    |                    |                    |
|----|------------------------|----------------------------------------------------|---------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 41 | Niobio-95m             | W, ver $^{88}\text{Nb}$                            | $7.40 \times 10^7$<br>Pared IGI | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                        |                                                    | $(7.40 \times 10^7)$            | -                  | -                  | -                  | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                        | Y, ver $^{88}\text{Nb}$                            | -                               | $7.40 \times 10^7$ | $3.33 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 41 | Niobio-95              | W, ver $^{88}\text{Nb}$                            | $7.40 \times 10^7$              | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                        | Y, ver $^{88}\text{Nb}$                            | -                               | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 41 | Niobio-96              | W, ver $^{88}\text{Nb}$                            | $3.70 \times 10^7$              | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | Y, ver $^{88}\text{Nb}$                            | -                               | $7.40 \times 10^7$ | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 41 | Niobio-97 <sup>2</sup> | W, ver $^{88}\text{Nb}$                            | $7.40 \times 10^8$              | $2.96 \times 10^9$ | $1.11 \times 10^6$ | $3.70 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                        | Y, ver $^{88}\text{Nb}$                            | -                               | $2.59 \times 10^9$ | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
| 41 | Niobio-98 <sup>2</sup> | W, ver $^{88}\text{Nb}$                            | $3.70 \times 10^8$              | $1.85 \times 10^9$ | $7.40 \times 10^5$ | $2.96 \times 10^3$ | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                        | Y, ver $^{88}\text{Nb}$                            | -                               | $1.85 \times 10^9$ | $7.40 \times 10^5$ | $2.59 \times 10^3$ | -                  | -                  |
| 28 | Níquel-56              | D, todos los compuestos excepto los señalados en W | $3.70 \times 10^7$              | $7.40 \times 10^7$ | $2.96 \times 10^4$ | $1.11 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | W, óxidos, hidróxidos, y carburos                  | -                               | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 28 | Níquel-57              | D, ver $^{56}\text{Ni}$                            | $7.40 \times 10^7$              | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.59 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | W, ver $^{56}\text{Ni}$                            | -                               | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $2.22 \times 10^8$ | $1.11 \times 10^5$ | $3.33 \times 10^2$ | -                  | -                  |
| 28 | Níquel-59              | D, ver $^{56}\text{Ni}$                            | $7.40 \times 10^8$              | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                        | W, ver $^{56}\text{Ni}$                            | -                               | $2.59 \times 10^8$ | $1.11 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $7.40 \times 10^7$ | $2.96 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 28 | Níquel-63              | D, ver $^{56}\text{Ni}$                            | $3.33 \times 10^8$              | $7.40 \times 10^7$ | $2.59 \times 10^4$ | $7.40 \times 10^1$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                        | W, ver $^{56}\text{Ni}$                            | -                               | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $2.96 \times 10^7$ | $1.11 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
| 28 | Níquel-65              | D, ver $^{56}\text{Ni}$                            | $2.96 \times 10^8$              | $7.40 \times 10^8$ | $3.70 \times 10^5$ | $1.11 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                        | W, ver $^{56}\text{Ni}$                            | -                               | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.48 \times 10^3$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $7.40 \times 10^8$ | $2.59 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 28 | Níquel-66              | D, ver $^{56}\text{Ni}$                            | $1.48 \times 10^7$<br>Pared IGI | $7.40 \times 10^7$ | $2.59 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                        |                                                    | $(1.85 \times 10^7)$            | -                  | -                  | -                  | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
|    |                        | W, ver $^{56}\text{Ni}$                            | -                               | $2.22 \times 10^7$ | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
|    |                        | Vapor                                              | -                               | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
| 79 | Oro-193                | D, todos los compuestos excepto los señalados en W | $3.33 \times 10^8$              | $1.11 \times 10^9$ | $3.70 \times 10^5$ | $1.48 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                        | W, haluros y nitratos                              | -                               | $7.40 \times 10^8$ | $3.33 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
|    |                        | Y, óxidos e hidróxidos                             | -                               | $7.40 \times 10^8$ | $2.96 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
| 79 | Oro-194                | D, ver $^{193}\text{Au}$                           | $1.11 \times 10^8$              | $2.96 \times 10^8$ | $1.11 \times 10^5$ | $3.70 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.96 \times 10^2$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $1.85 \times 10^8$ | $7.40 \times 10^4$ | $2.59 \times 10^2$ | -                  | -                  |
| 79 | Oro-195                | D, ver $^{193}\text{Au}$                           | $1.85 \times 10^8$              | $3.70 \times 10^8$ | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $3.70 \times 10^7$ | $2.22 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $1.48 \times 10^7$ | $7.40 \times 10^3$ | $2.22 \times 10^1$ | -                  | -                  |
| 79 | Oro-198                | D, ver $^{193}\text{Au}$                           | $3.70 \times 10^7$              | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $7.40 \times 10^7$ | $2.96 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $7.40 \times 10^7$ | $2.59 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 79 | Oro-198m               | D, ver $^{193}\text{Au}$                           | $3.70 \times 10^7$              | $1.11 \times 10^8$ | $3.70 \times 10^4$ | $1.48 \times 10^2$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $3.70 \times 10^7$ | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 79 | Oro-199                | D, ver $^{193}\text{Au}$                           | $1.11 \times 10^8$<br>Pared IGI | $3.33 \times 10^8$ | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
|    |                        |                                                    | $(1.11 \times 10^8)$            | -                  | -                  | -                  | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $2.22 \times 10^2$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $1.48 \times 10^8$ | $7.40 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |
| 79 | Oro-200 <sup>2</sup>   | D, ver $^{193}\text{Au}$                           | $1.11 \times 10^9$              | $2.22 \times 10^9$ | $1.11 \times 10^6$ | $3.33 \times 10^3$ | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                        | W, ver $^{193}\text{Au}$                           | -                               | $2.96 \times 10^9$ | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
|    |                        | Y, ver $^{193}\text{Au}$                           | -                               | $2.59 \times 10^9$ | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |

|    |                         |                                                        |                                   |                       |                    |                       |                    |                    |
|----|-------------------------|--------------------------------------------------------|-----------------------------------|-----------------------|--------------------|-----------------------|--------------------|--------------------|
| 79 | Oro-200m                | D, ver $^{193}\text{Au}$                               | $3.70 \times 10^7$                | $1.48 \times 10^9$    | $3.70 \times 10^4$ | $1.85 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^5$ |
|    |                         | W, ver $^{193}\text{Au}$                               | -                                 | $1.11 \times 10^8$    | $3.70 \times 10^4$ | $1.48 \times 10^2$    | -                  | -                  |
|    |                         | Y, ver $^{193}\text{Au}$                               | -                                 | $7.40 \times 10^8$    | $3.70 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
| 79 | Oro-201 <sup>2</sup>    | D, ver $^{193}\text{Au}$                               | $2.59 \times 10^9$<br>Pared Estom | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|    |                         |                                                        | $(3.33 \times 10^9)$              | -                     | -                  | -                     | $3.70 \times 10^7$ | $3.70 \times 10^5$ |
|    |                         | W, ver $^{193}\text{Au}$                               | -                                 | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|    |                         | Y, ver $^{193}\text{Au}$                               | -                                 | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
| 76 | Osmio-180 <sup>2</sup>  | D, todos los compuestos excepto los señalados en W y Y | $3.70 \times 10^9$                | $1.48 \times 10^{10}$ | $7.40 \times 10^6$ | $1.85 \times 10^4$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                         | W, haluros y nitratos                                  | -                                 | $1.85 \times 10^{10}$ | $7.40 \times 10^6$ | $2.59 \times 10^4$    | -                  | -                  |
|    |                         | Y, óxidos e hidróxidos                                 | -                                 | $1.85 \times 10^{10}$ | $7.40 \times 10^6$ | $2.22 \times 10^4$    | -                  | -                  |
| 76 | Osmio-181 <sup>2</sup>  | D, ver $^{180}\text{Os}$                               | $3.70 \times 10^8$                | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | $7.40 \times 10^5$ | $7.40 \times 10^7$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $1.85 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$    | -                  | -                  |
| 76 | Osmio-182               | D, ver $^{180}\text{Os}$                               | $7.40 \times 10^7$                | $2.22 \times 10^8$    | $7.40 \times 10^4$ | $2.96 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $1.48 \times 10^8$    | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $1.48 \times 10^8$    | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
| 76 | Osmio-185               | D, ver $^{180}\text{Os}$                               | $7.40 \times 10^7$                | $1.85 \times 10^7$    | $7.40 \times 10^3$ | $2.59 \times 10^1$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $2.96 \times 10^7$    | $1.11 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $2.96 \times 10^7$    | $1.11 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
| 76 | Osmio-189m              | D, ver $^{180}\text{Os}$                               | $2.96 \times 10^9$                | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$    | $3.70 \times 10^7$ | $3.70 \times 10^5$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $7.40 \times 10^9$    | $2.59 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
| 76 | Osmio-191               | D, ver $^{180}\text{Os}$                               | $7.40 \times 10^7$<br>Pared IGI   | $7.40 \times 10^7$    | $3.33 \times 10^4$ | $1.11 \times 10^2$    | -                  | -                  |
|    |                         |                                                        | $(1.11 \times 10^8)$              | -                     | -                  | -                     | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $7.40 \times 10^7$    | $2.59 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $3.70 \times 10^7$    | $2.22 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 76 | Osmio-191m              | D, ver $^{180}\text{Os}$                               | $3.70 \times 10^8$                | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.48 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 76 | Osmio-193               | D, ver $^{180}\text{Os}$                               | $7.40 \times 10^7$<br>Pared IGI   | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
|    |                         |                                                        | $(7.40 \times 10^7)$              | -                     | -                  | -                     | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $1.11 \times 10^8$    | $3.70 \times 10^4$ | $1.48 \times 10^2$    | -                  | -                  |
|    |                         | Y, ver $^{180}\text{Os}$                               | -                                 | $1.11 \times 10^8$    | $3.70 \times 10^4$ | $1.48 \times 10^2$    | -                  | -                  |
| 76 | Osmio-194               | D, ver $^{180}\text{Os}$                               | $1.48 \times 10^7$<br>Pared IGI   | $1.48 \times 10^6$    | $7.40 \times 10^2$ | 2.22                  | -                  | -                  |
|    |                         |                                                        | $(2.22 \times 10^7)$              | -                     | -                  | -                     | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
|    |                         | W, ver $^{180}\text{Os}$                               | -                                 | $2.22 \times 10^6$    | $7.40 \times 10^2$ | 2.96                  | -                  | -                  |
| 8  | Oxígeno-15 <sup>2</sup> | Y, ver $^{180}\text{Os}$                               | -                                 | $2.96 \times 10^5$    | $1.11 \times 10^2$ | $3.70 \times 10^{-1}$ | -                  | -                  |
|    |                         | Sumersión <sup>1</sup>                                 | -                                 | -                     | $1.48 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
|    |                         |                                                        | -                                 | -                     | -                  | -                     | -                  | -                  |
| 46 | Paladio-100             | D, todos los compuestos excepto los señalados en W y Y | $3.70 \times 10^7$                | $3.70 \times 10^7$    | $2.22 \times 10^4$ | $7.40 \times 10^1$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                         | W, nitratos                                            | -                                 | $3.70 \times 10^7$    | $1.85 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
|    |                         | Y, óxidos e hidróxidos                                 | -                                 | $3.70 \times 10^7$    | $2.22 \times 10^4$ | $7.40 \times 10^1$    | -                  | -                  |
| 46 | Paladio-101             | D, ver $^{100}\text{Pd}$                               | $3.70 \times 10^8$                | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.85 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                         | W, ver $^{100}\text{Pd}$                               | -                                 | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.85 \times 10^3$    | -                  | -                  |
|    |                         | Y, ver $^{100}\text{Pd}$                               | -                                 | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.48 \times 10^3$    | -                  | -                  |
| 46 | Paladio-103             | D, ver $^{100}\text{Pd}$                               | $2.22 \times 10^8$<br>Pared IGI   | $2.22 \times 10^8$    | $1.11 \times 10^5$ | $3.33 \times 10^2$    | -                  | -                  |
|    |                         |                                                        | $(2.59 \times 10^8)$              | -                     | -                  | -                     | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                         | W, ver $^{100}\text{Pd}$                               | -                                 | $1.48 \times 10^8$    | $7.40 \times 10^4$ | $2.22 \times 10^2$    | -                  | -                  |
|    |                         | Y, ver $^{100}\text{Pd}$                               | -                                 | $1.48 \times 10^8$    | $3.70 \times 10^4$ | $1.85 \times 10^2$    | -                  | -                  |
| 46 | Paladio-107             | D, ver $^{100}\text{Pd}$                               | $1.11 \times 10^9$<br>Pared IGI   | $7.40 \times 10^8$    | $3.33 \times 10^5$ | -                     | -                  | -                  |
|    |                         |                                                        | $(1.48 \times 10^9)$              | $(7.40 \times 10^8)$  | -                  | $1.11 \times 10^3$    | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                         | W, ver $^{100}\text{Pd}$                               | -                                 | $2.59 \times 10^8$    | $1.11 \times 10^5$ | $3.70 \times 10^2$    | -                  | -                  |
|    |                         | Y, ver $^{100}\text{Pd}$                               | -                                 | $1.48 \times 10^7$    | $7.40 \times 10^3$ | $2.22 \times 10^1$    | -                  | -                  |

|    |                         |                                                        |                                                              |                                                        |                    |                    |                    |                    |
|----|-------------------------|--------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|
| 46 | Paladio-109             | D, ver $^{100}\text{Pd}$                               | $7.40 \times 10^7$                                           | $2.22 \times 10^8$                                     | $1.11 \times 10^5$ | $3.33 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                         | W, ver $^{100}\text{Pd}$                               | -                                                            | $1.85 \times 10^8$                                     | $7.40 \times 10^4$ | $2.96 \times 10^2$ | -                  | -                  |
|    |                         | Y, ver $^{100}\text{Pd}$                               | -                                                            | $1.85 \times 10^8$                                     | $7.40 \times 10^4$ | $2.22 \times 10^2$ | -                  | -                  |
| 47 | Plata-102 <sup>2</sup>  | D, todos los compuestos excepto los señalados en W y Y | $1.85 \times 10^9$<br>Pared Estom.<br>( $2.22 \times 10^9$ ) | $7.40 \times 10^9$                                     | $2.96 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         | W, nitratos y sulfuros                                 | -                                                            | $7.40 \times 10^9$                                     | $3.33 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
|    |                         | Y, óxidos e hidróxidos                                 | -                                                            | $7.40 \times 10^9$                                     | $2.96 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
| 47 | Plata-103 <sup>2</sup>  | D, ver $^{102}\text{Ag}$                               | $1.48 \times 10^9$                                           | $3.70 \times 10^9$                                     | $1.48 \times 10^6$ | $3.70 \times 10^3$ | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 47 | Plata-104 <sup>2</sup>  | D, ver $^{102}\text{Ag}$                               | $7.40 \times 10^8$                                           | $2.59 \times 10^9$                                     | $1.11 \times 10^6$ | $3.70 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 47 | Plata-104m <sup>2</sup> | D, ver $^{102}\text{Ag}$                               | $1.11 \times 10^9$                                           | $3.33 \times 10^9$                                     | $1.48 \times 10^6$ | $3.70 \times 10^3$ | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^9$                                     | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 47 | Plata-105               | D, ver $^{102}\text{Ag}$                               | $1.11 \times 10^8$                                           | $3.70 \times 10^7$                                     | $1.48 \times 10^4$ | $3.70 \times 10^1$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^7$                                     | $2.59 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^7$                                     | $2.59 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 47 | Plata-106 <sup>2</sup>  | D, ver $^{102}\text{Ag}$                               | $2.22 \times 10^9$<br>Pared Estom.<br>( $2.22 \times 10^9$ ) | $7.40 \times 10^9$                                     | $2.96 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^9$                                     | $3.33 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^9$                                     | $2.96 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
| 47 | Plata-106m              | D, ver $^{102}\text{Ag}$                               | $2.96 \times 10^7$                                           | $2.59 \times 10^7$                                     | $1.11 \times 10^4$ | $3.70 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^7$                                     | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^7$                                     | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
| 47 | Plata-108m              | D, ver $^{102}\text{Ag}$                               | $2.22 \times 10^7$                                           | $7.40 \times 10^6$                                     | $2.96 \times 10^3$ | $1.11 \times 10^1$ | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $1.11 \times 10^7$                                     | $3.70 \times 10^3$ | $1.48 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^5$                                     | $3.70 \times 10^2$ | 1.11               | -                  | -                  |
| 47 | Plata-110m              | D, ver $^{102}\text{Ag}$                               | $1.85 \times 10^7$                                           | $3.70 \times 10^6$                                     | $1.85 \times 10^3$ | 7.40               | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $7.40 \times 10^6$                                     | $2.96 \times 10^3$ | $1.11 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^6$                                     | $1.48 \times 10^3$ | 3.70               | -                  | -                  |
| 47 | Plata-111               | D, ver $^{102}\text{Ag}$                               | $3.33 \times 10^7$<br>Pared IGI<br>( $3.70 \times 10^7$ )    | $7.40 \times 10^7$<br>Hígado<br>( $7.40 \times 10^7$ ) | $2.22 \times 10^4$ | -                  | -                  | -                  |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^7$                                     | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^7$                                     | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
| 47 | Plata-112               | D, ver $^{102}\text{Ag}$                               | $1.11 \times 10^8$                                           | $2.96 \times 10^8$                                     | $1.11 \times 10^5$ | $3.70 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.70 \times 10^8$                                     | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^8$                                     | $1.48 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
| 47 | Plata-115 <sup>2</sup>  | D, ver $^{102}\text{Ag}$                               | $1.11 \times 10^9$<br>Pared Estom.<br>( $1.11 \times 10^9$ ) | $3.33 \times 10^9$                                     | $1.48 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
|    |                         | W, ver $^{102}\text{Ag}$                               | -                                                            | $3.33 \times 10^9$                                     | $1.48 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
|    |                         | Y, ver $^{102}\text{Ag}$                               | -                                                            | $2.96 \times 10^9$                                     | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
| 78 | Platino-186             | D, todos los compuestos                                | $3.70 \times 10^8$                                           | $1.48 \times 10^9$                                     | $7.40 \times 10^5$ | $1.85 \times 10^3$ | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 78 | Platino-188             | D, todos los compuestos                                | $7.40 \times 10^7$                                           | $7.40 \times 10^7$                                     | $2.59 \times 10^4$ | $7.40 \times 10^1$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 78 | Platino-189             | D, todos los compuestos                                | $3.70 \times 10^8$                                           | $1.11 \times 10^9$                                     | $3.70 \times 10^5$ | $1.48 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 78 | Platino-191             | D, todos los compuestos                                | $1.48 \times 10^8$                                           | $2.96 \times 10^8$                                     | $1.48 \times 10^5$ | $3.70 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 78 | Platino-193             | D, todos los compuestos                                | $1.48 \times 10^9$<br>Pared IGI<br>( $1.85 \times 10^9$ )    | $7.40 \times 10^8$                                     | $3.70 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
|    |                         |                                                        | -                                                            | -                                                      | -                  | -                  | $2.22 \times 10^7$ | $2.22 \times 10^8$ |
| 78 | Platino-193m            | D, todos los compuestos                                | $1.11 \times 10^8$<br>Pared IGI<br>( $1.11 \times 10^9$ )    | $2.22 \times 10^8$                                     | $1.11 \times 10^5$ | $2.96 \times 10^2$ | -                  | -                  |
|    |                         |                                                        | -                                                            | -                                                      | -                  | -                  | $1.48 \times 10^6$ | $1.48 \times 10^7$ |

|    |                           |                                                   |                                 |                                 |                       |                       |                    |                    |
|----|---------------------------|---------------------------------------------------|---------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 78 | Platino-195m              | D, todos los compuestos                           | $7.40 \times 10^7$<br>Pared IGI | $1.48 \times 10^8$              | $7.40 \times 10^4$    | $2.22 \times 10^2$    | -                  | -                  |
|    |                           |                                                   | $(7.40 \times 10^7)$            | -                               | -                     | -                     | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 78 | Platino-197               | D, todos los compuestos                           | $1.11 \times 10^8$              | $3.70 \times 10^8$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 78 | Platino-197m <sup>2</sup> | D, todos los compuestos                           | $7.40 \times 10^8$              | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 78 | Platino-199 <sup>2</sup>  | D, todos los compuestos                           | $1.85 \times 10^9$              | $3.70 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
| 78 | Platino-200               | D, todos los compuestos                           | $3.70 \times 10^7$              | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.85 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 82 | Plomo-195m <sup>2</sup>   | D, todos los compuestos                           | $2.22 \times 10^9$              | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $1.11 \times 10^4$    | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
| 82 | Plomo-198                 | D, todos los compuestos                           | $1.11 \times 10^9$              | $2.22 \times 10^9$              | $1.11 \times 10^6$    | $3.33 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 82 | Plomo-199 <sup>2</sup>    | D, todos los compuestos                           | $7.40 \times 10^9$              | $2.59 \times 10^9$              | $1.11 \times 10^6$    | $3.70 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 82 | Plomo-200                 | D, todos los compuestos                           | $1.11 \times 10^8$              | $2.22 \times 10^8$              | $1.11 \times 10^5$    | $3.33 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 82 | Plomo-201                 | D, todos los compuestos                           | $2.59 \times 10^8$              | $7.40 \times 10^8$              | $2.96 \times 10^5$    | $1.11 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 82 | Plomo-202                 | D, todos los compuestos                           | $3.70 \times 10^6$              | $1.85 \times 10^6$              | $7.40 \times 10^2$    | 2.59                  | $7.40 \times 10^4$ | $7.40 \times 10^5$ |
| 82 | Plomo-202m                | D, todos los compuestos                           | $3.33 \times 10^8$              | $1.11 \times 10^9$              | $3.70 \times 10^5$    | $1.48 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 82 | Plomo-203                 | D, todos los compuestos                           | $1.85 \times 10^8$              | $3.33 \times 10^8$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
| 82 | Plomo-205                 | D, todos los compuestos                           | $1.48 \times 10^8$              | $3.70 \times 10^7$              | $2.22 \times 10^4$    | $7.40 \times 10^1$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 82 | Plomo-209                 | D, todos los compuestos                           | $7.40 \times 10^8$              | $2.22 \times 10^9$              | $7.40 \times 10^5$    | $2.96 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 82 | Plomo-210                 | D, todos los compuestos                           | $2.22 \times 10^4$<br>Sup. ósea | $7.40 \times 10^3$<br>Sup. ósea | 3.70                  | -                     | -                  | -                  |
|    |                           |                                                   | $(3.70 \times 10^4)$            | $(1.48 \times 10^4)$            | -                     | $2.22 \times 10^{-2}$ | $3.70 \times 10^2$ | $3.70 \times 10^3$ |
| 82 | Plomo-211 <sup>2</sup>    | D, todos los compuestos                           | $3.70 \times 10^8$              | $2.22 \times 10^7$              | $1.11 \times 10^4$    | $3.33 \times 10^1$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 82 | Plomo-212                 | D, todos los compuestos                           | $2.96 \times 10^6$<br>Sup. ósea | $1.11 \times 10^6$<br>Sup. ósea | $3.70 \times 10^2$    | 1.85                  | -                  | -                  |
|    |                           |                                                   | $(3.70 \times 10^6)$            | -                               | -                     | -                     | $7.40 \times 10^4$ | $7.40 \times 10^5$ |
| 82 | Plomo-214 <sup>2</sup>    | D, todos los compuestos                           | $3.33 \times 10^8$              | $2.96 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 94 | Plutonio-234              | W, todos los compuestos, excepto PuO <sub>2</sub> | $2.96 \times 10^8$              | $7.40 \times 10^6$              | $3.33 \times 10^3$    | $1.11 \times 10^1$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                           | Y, PuO <sub>2</sub>                               | -                               | $7.40 \times 10^6$              | $2.96 \times 10^3$    | $1.11 \times 10^1$    | -                  | -                  |
| 94 | Plutonio-235 <sup>2</sup> | W, ver <sup>234</sup> Pu                          | $3.33 \times 10^{10}$           | $1.11 \times 10^{11}$           | $3.70 \times 10^7$    | $1.48 \times 10^5$    | $3.70 \times 10^8$ | $3.70 \times 10^9$ |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $1.11 \times 10^{11}$           | $3.70 \times 10^7$    | $1.11 \times 10^5$    | -                  | -                  |
| 94 | Plutonio-236              | W, ver <sup>234</sup> Pu                          | $7.40 \times 10^4$              | $7.40 \times 10^2$              | $2.96 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $1.48 \times 10^5$              | $1.48 \times 10^3$              | -                     | $1.85 \times 10^{-3}$ | $2.22 \times 10^3$ | $2.22 \times 10^4$ |
| 94 | Plutonio-237              | W, ver <sup>234</sup> Pu                          | $3.70 \times 10^8$              | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.85 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^7$ |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
| 94 | Plutonio-238              | W, ver <sup>234</sup> Pu                          | $3.33 \times 10^4$<br>Sup. ósea | $2.59 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $(7.40 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
| 94 | Plutonio-239              | W, ver <sup>234</sup> Pu                          | $2.96 \times 10^4$<br>Sup. ósea | $2.22 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
|    |                           | W, ver <sup>234</sup> Pu                          | -                               | $7.40 \times 10^2$<br>Sup. ósea | $2.59 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $(7.40 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | -                  | -                  |
| 94 | Plutonio-240              | W, ver <sup>234</sup> Pu                          | $2.96 \times 10^4$<br>Sup. ósea | $2.22 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
|    |                           | W, ver <sup>234</sup> Pu                          | -                               | $7.40 \times 10^2$<br>Sup. ósea | $2.59 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $(7.40 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | -                  | -                  |
| 94 | Plutonio-241              | W, ver <sup>234</sup> Pu                          | $1.48 \times 10^6$<br>Sup. ósea | $1.11 \times 10^4$<br>Sup. ósea | 3.70                  | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $(2.59 \times 10^6)$            | $(2.22 \times 10^4)$            | -                     | $2.96 \times 10^{-2}$ | $3.70 \times 10^4$ | $3.70 \times 10^5$ |
|    |                           | W, ver <sup>234</sup> Pu                          | -                               | $2.96 \times 10^4$<br>Sup. ósea | $1.11 \times 10^1$    | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $(3.70 \times 10^4)$            | -                     | $3.70 \times 10^{-2}$ | -                  | -                  |
| 94 | Plutonio-242              | W, ver <sup>234</sup> Pu                          | $2.96 \times 10^4$<br>Sup. ósea | $2.59 \times 10^2$<br>Sup. ósea | $1.11 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | $(3.70 \times 10^4)$            | $(3.70 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$ | $7.40 \times 10^3$ |
|    |                           | W, ver <sup>234</sup> Pu                          | -                               | $7.40 \times 10^2$<br>Sup. ósea | $2.59 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           | Y, ver <sup>234</sup> Pu                          | -                               | $(7.40 \times 10^2)$            | -                     | $7.40 \times 10^{-4}$ | -                  | -                  |

|    |                               |                                                     |                                        |                                     |                       |                       |                       |                    |
|----|-------------------------------|-----------------------------------------------------|----------------------------------------|-------------------------------------|-----------------------|-----------------------|-----------------------|--------------------|
| 94 | Plutonio-243                  | W, ver $^{234}\text{Pu}$                            | $7.40 \times 10^8$                     | $1.48 \times 10^9$                  | $7.40 \times 10^5$    | $1.85 \times 10^3$    | $7.40 \times 10^6$    | $7.40 \times 10^7$ |
|    |                               | Y, ver $^{234}\text{Pu}$                            | -                                      | $1.48 \times 10^9$                  | $7.40 \times 10^5$    | $1.85 \times 10^3$    | -                     | -                  |
| 94 | Plutonio-244                  | W, ver $^{234}\text{Pu}$                            | $2.96 \times 10^4$                     | $2.59 \times 10^2$                  | $1.11 \times 10^{-1}$ | -                     | -                     | -                  |
|    |                               |                                                     | Sup. ósea<br>( $7.40 \times 10^4$ )    | Sup. ósea<br>( $3.70 \times 10^2$ ) | -                     | $7.40 \times 10^{-4}$ | $7.40 \times 10^2$    | $7.40 \times 10^3$ |
|    |                               | Y, ver $^{234}\text{Pu}$                            | -                                      | $7.40 \times 10^2$                  | $2.59 \times 10^{-1}$ | -                     | -                     | -                  |
|    |                               |                                                     | -                                      | ( $7.40 \times 10^2$ )              | -                     | $7.40 \times 10^{-4}$ | -                     | -                  |
| 94 | Plutonio-245                  | W, ver $^{234}\text{Pu}$                            | $7.40 \times 10^7$                     | $1.85 \times 10^8$                  | $7.40 \times 10^4$    | $2.22 \times 10^2$    | $1.11 \times 10^6$    | $1.11 \times 10^7$ |
|    |                               | Y, ver $^{234}\text{Pu}$                            | -                                      | $1.48 \times 10^8$                  | $7.40 \times 10^4$    | $2.22 \times 10^2$    | -                     | -                  |
| 94 | Plutonio-246                  | W, ver $^{234}\text{Pu}$                            | $1.48 \times 10^7$                     | $1.11 \times 10^7$                  | $3.70 \times 10^3$    | $1.48 \times 10^1$    | -                     | -                  |
|    |                               |                                                     | Pared IGI<br>( $1.48 \times 10^7$ )    | -                                   | -                     | -                     | $2.22 \times 10^5$    | $2.22 \times 10^6$ |
|    |                               | Y, ver $^{234}\text{Pu}$                            | -                                      | $1.11 \times 10^7$                  | $3.70 \times 10^3$    | $1.48 \times 10^1$    | -                     | -                  |
| 84 | Polonio-203 <sup>2</sup>      | D, todos los compuestos excepto los señalados en W  | $1.11 \times 10^9$                     | $2.22 \times 10^9$                  | $1.11 \times 10^6$    | $3.33 \times 10^3$    | $1.11 \times 10^7$    | $1.11 \times 10^8$ |
|    |                               | W, óxidos, hidróxidos, y nitratos                   | -                                      | $3.33 \times 10^9$                  | $1.48 \times 10^6$    | $3.70 \times 10^3$    | -                     | -                  |
| 84 | Polonio-205 <sup>2</sup>      | D, ver $^{203}\text{Po}$                            | $7.40 \times 10^8$                     | $1.48 \times 10^9$                  | $7.40 \times 10^5$    | $1.85 \times 10^3$    | $1.11 \times 10^7$    | $1.11 \times 10^8$ |
|    |                               | W, ver $^{203}\text{Po}$                            | -                                      | $2.59 \times 10^9$                  | $1.11 \times 10^6$    | $3.70 \times 10^3$    | -                     | -                  |
| 84 | Polonio-207                   | D, ver $^{203}\text{Po}$                            | $2.96 \times 10^8$                     | $1.11 \times 10^9$                  | $3.70 \times 10^5$    | $1.11 \times 10^3$    | $3.70 \times 10^6$    | $3.70 \times 10^7$ |
|    |                               | W, ver $^{203}\text{Po}$                            | -                                      | $1.11 \times 10^9$                  | $3.70 \times 10^5$    | $1.48 \times 10^3$    | -                     | -                  |
| 84 | Polonio-210                   | D, ver $^{203}\text{Po}$                            | $1.11 \times 10^5$                     | $2.22 \times 10^4$                  | $1.11 \times 10^1$    | $3.33 \times 10^{-2}$ | $1.48 \times 10^{-3}$ | $1.48 \times 10^4$ |
|    |                               | W, ver $^{203}\text{Po}$                            | -                                      | $2.22 \times 10^4$                  | $1.11 \times 10^1$    | $3.33 \times 10^{-2}$ | -                     | -                  |
| 19 | Potasio-40                    | D, todos los compuestos                             | $1.11 \times 10^7$                     | $1.48 \times 10^7$                  | $7.40 \times 10^3$    | $2.22 \times 10^1$    | $1.48 \times 10^5$    | $1.48 \times 10^6$ |
| 19 | Potasio-42                    | D, todos los compuestos                             | $1.85 \times 10^8$                     | $1.85 \times 10^8$                  | $7.40 \times 10^4$    | $2.59 \times 10^2$    | $2.22 \times 10^6$    | $2.22 \times 10^7$ |
| 19 | Potasio-43                    | D, todos los compuestos                             | $2.22 \times 10^8$                     | $3.33 \times 10^8$                  | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $3.33 \times 10^6$    | $3.33 \times 10^7$ |
| 19 | Potasio-44 <sup>2</sup>       | D, todos los compuestos                             | $7.40 \times 10^8$                     | $2.59 \times 10^9$                  | $1.11 \times 10^6$    | $3.33 \times 10^3$    | -                     | -                  |
|    |                               |                                                     | Pared Estom.<br>( $1.48 \times 10^9$ ) | -                                   | -                     | -                     | $1.85 \times 10^7$    | $1.85 \times 10^8$ |
| 19 | Potasio-45 <sup>2</sup>       | D, todos los compuestos                             | $1.11 \times 10^9$                     | $3.70 \times 10^9$                  | $1.85 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
|    |                               |                                                     | Pared Estom.<br>( $1.85 \times 10^9$ ) | -                                   | -                     | -                     | $2.59 \times 10^7$    | $2.59 \times 10^8$ |
| 59 | Praseodimio-136 <sup>2</sup>  | W, todos los compuestos, excepto los señalados en Y | $1.85 \times 10^9$                     | $7.40 \times 10^9$                  | $3.70 \times 10^6$    | $1.11 \times 10^4$    | -                     | -                  |
|    |                               |                                                     | Pared Estom.<br>( $2.59 \times 10^9$ ) | -                                   | -                     | -                     | $3.70 \times 10^7$    | $3.70 \times 10^8$ |
|    |                               | Y, óxidos, hidróxidos, carburos, y fluoruros        | -                                      | $7.40 \times 10^9$                  | $3.33 \times 10^6$    | $1.11 \times 10^4$    | -                     | -                  |
| 59 | Praseodimio-137 <sup>2</sup>  | W, ver $^{136}\text{Pr}$                            | $1.48 \times 10^9$                     | $7.40 \times 10^9$                  | $2.22 \times 10^6$    | $7.40 \times 10^3$    | $1.85 \times 10^7$    | $1.85 \times 10^8$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $3.70 \times 10^9$                  | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
| 59 | Praseodimio-138m              | W, ver $^{136}\text{Pr}$                            | $3.70 \times 10^8$                     | $1.85 \times 10^9$                  | $7.40 \times 10^5$    | $2.96 \times 10^3$    | $3.70 \times 10^6$    | $3.70 \times 10^7$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $1.48 \times 10^9$                  | $7.40 \times 10^5$    | $2.22 \times 10^3$    | -                     | -                  |
| 59 | Praseodimio-139               | W, ver $^{136}\text{Pr}$                            | $1.48 \times 10^9$                     | $3.70 \times 10^9$                  | $1.85 \times 10^6$    | $7.40 \times 10^3$    | $2.22 \times 10^7$    | $2.22 \times 10^8$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $3.70 \times 10^9$                  | $1.85 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
| 59 | Praseodimio-142               | W, ver $^{136}\text{Pr}$                            | $3.70 \times 10^7$                     | $7.40 \times 10^7$                  | $3.33 \times 10^4$    | $1.11 \times 10^2$    | $3.70 \times 10^5$    | $3.70 \times 10^6$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $7.40 \times 10^7$                  | $2.96 \times 10^4$    | $1.11 \times 10^2$    | -                     | -                  |
| 59 | Praseodimio-142m <sup>2</sup> | W, ver $^{136}\text{Pr}$                            | $2.96 \times 10^9$                     | $7.40 \times 10^9$                  | $2.59 \times 10^6$    | $7.40 \times 10^3$    | $3.70 \times 10^7$    | $3.70 \times 10^8$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $3.70 \times 10^9$                  | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
| 59 | Praseodimio-143               | W, ver $^{136}\text{Pr}$                            | $3.33 \times 10^7$                     | $2.96 \times 10^7$                  | $1.11 \times 10^4$    | $3.70 \times 10^1$    | -                     | -                  |
|    |                               |                                                     | Pared IGI<br>( $3.70 \times 10^7$ )    | -                                   | -                     | -                     | $7.40 \times 10^5$    | $7.40 \times 10^6$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $2.59 \times 10^7$                  | $1.11 \times 10^4$    | $3.33 \times 10^1$    | -                     | -                  |
| 59 | Praseodimio-144 <sup>2</sup>  | W, ver $^{136}\text{Pr}$                            | $1.11 \times 10^9$                     | $3.70 \times 10^9$                  | $1.85 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
|    |                               |                                                     | Pared Estom.<br>( $1.48 \times 10^9$ ) | -                                   | -                     | -                     | $2.22 \times 10^7$    | $2.22 \times 10^8$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $3.70 \times 10^9$                  | $1.85 \times 10^6$    | $7.40 \times 10^3$    | -                     | -                  |
| 59 | Praseodimio-145               | W, ver $^{136}\text{Pr}$                            | $1.11 \times 10^8$                     | $3.33 \times 10^8$                  | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $1.48 \times 10^6$    | $1.48 \times 10^7$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $2.96 \times 10^8$                  | $1.11 \times 10^5$    | $3.70 \times 10^2$    | -                     | -                  |
| 59 | Praseodimio-147 <sup>2</sup>  | W, ver $^{136}\text{Pr}$                            | $1.85 \times 10^9$                     | $7.40 \times 10^9$                  | $2.96 \times 10^6$    | $1.11 \times 10^4$    | -                     | -                  |
|    |                               |                                                     | Pared Estom.<br>( $2.96 \times 10^9$ ) | -                                   | -                     | -                     | $3.70 \times 10^7$    | $3.70 \times 10^8$ |
|    |                               | Y, ver $^{136}\text{Pr}$                            | -                                      | $7.40 \times 10^9$                  | $2.96 \times 10^6$    | $1.11 \times 10^4$    | -                     | -                  |

|    |                              |                                                     |                                                                 |                                   |                       |                       |                      |                      |
|----|------------------------------|-----------------------------------------------------|-----------------------------------------------------------------|-----------------------------------|-----------------------|-----------------------|----------------------|----------------------|
| 61 | Prometio-141 <sup>2</sup>    | W, todos los compuestos, excepto los señalados en Y | 1.85x10 <sup>9</sup><br>Pared Estom.<br>(2.22x10 <sup>9</sup> ) | 7.40x10 <sup>9</sup>              | 2.96x10 <sup>6</sup>  | 1.11x10 <sup>4</sup>  | -                    | -                    |
|    |                              | Y, óxidos, hidróxidos, carburos, y fluoruros        | -                                                               | 7.40x10 <sup>9</sup>              | 2.59x10 <sup>6</sup>  | 7.40x10 <sup>3</sup>  | -                    | -                    |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 2.59x10 <sup>7</sup>              | 1.11x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-143                 | W, ver <sup>141</sup> Pm                            | 1.85x10 <sup>8</sup>                                            | 2.22x10 <sup>7</sup>              | 7.40x10 <sup>3</sup>  | 2.96x10 <sup>1</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 2.59x10 <sup>7</sup>              | 1.11x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-144                 | W, ver <sup>141</sup> Pm                            | 3.70x10 <sup>7</sup>                                            | 3.70x10 <sup>6</sup>              | 1.85x10 <sup>3</sup>  | 7.40                  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 3.70x10 <sup>6</sup>              | 1.85x10 <sup>3</sup>  | 7.40                  | -                    | -                    |
| 61 | Prometio-145                 | W, ver <sup>141</sup> Pm                            | 3.70x10 <sup>8</sup>                                            | 7.40x10 <sup>6</sup><br>Sup. ósea | 2.59x10 <sup>3</sup>  | -                     | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                              |                                                     | -                                                               | (7.40x10 <sup>6</sup> )           | -                     | 1.11x10 <sup>1</sup>  | -                    | -                    |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 7.40x10 <sup>6</sup>              | 2.96x10 <sup>3</sup>  | 1.11x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-146                 | W, ver <sup>141</sup> Pm                            | 7.40x10 <sup>7</sup>                                            | 1.85x10 <sup>6</sup>              | 7.40x10 <sup>2</sup>  | 2.59                  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 1.48x10 <sup>6</sup>              | 7.40x10 <sup>2</sup>  | 2.22                  | -                    | -                    |
| 61 | Prometio-147                 | W, ver <sup>141</sup> Pm                            | 1.48x10 <sup>8</sup><br>Pared IGI                               | 3.70x10 <sup>6</sup><br>Sup. ósea | 1.85x10 <sup>3</sup>  | -                     | -                    | -                    |
|    |                              |                                                     | (1.85x10 <sup>8</sup> )                                         | (7.40x10 <sup>6</sup> )           | -                     | 1.11x10 <sup>1</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 3.70x10 <sup>6</sup>              | 2.22x10 <sup>3</sup>  | 7.40                  | -                    | -                    |
| 61 | Prometio-148                 | W, ver <sup>141</sup> Pm                            | 1.48x10 <sup>7</sup><br>Pared IGI                               | 1.85x10 <sup>7</sup>              | 7.40x10 <sup>3</sup>  | 2.96x10 <sup>1</sup>  | -                    | -                    |
|    |                              |                                                     | (1.85x10 <sup>7</sup> )                                         | -                                 | -                     | -                     | 2.59x10 <sup>5</sup> | 2.59x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 1.85x10 <sup>7</sup>              | 7.40x10 <sup>3</sup>  | 2.59x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-148m                | W, ver <sup>141</sup> Pm                            | 2.59x10 <sup>7</sup>                                            | 1.11x10 <sup>7</sup>              | 3.70x10 <sup>3</sup>  | 1.48x10 <sup>1</sup>  | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 1.11x10 <sup>7</sup>              | 3.70x10 <sup>3</sup>  | 1.85x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-149                 | W, ver <sup>141</sup> Pm                            | 3.70x10 <sup>7</sup><br>Pared IGI                               | 7.40x10 <sup>7</sup>              | 2.96x10 <sup>4</sup>  | 1.11x10 <sup>2</sup>  | -                    | -                    |
|    |                              |                                                     | (3.70x10 <sup>7</sup> )                                         | -                                 | -                     | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 7.40x10 <sup>7</sup>              | 2.96x10 <sup>4</sup>  | 7.40x10 <sup>1</sup>  | -                    | -                    |
| 61 | Prometio-150                 | W, ver <sup>141</sup> Pm                            | 1.85x10 <sup>8</sup>                                            | 7.40x10 <sup>8</sup>              | 2.96x10 <sup>5</sup>  | 1.11x10 <sup>3</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 7.40x10 <sup>8</sup>              | 2.59x10 <sup>5</sup>  | 7.40x10 <sup>2</sup>  | -                    | -                    |
| 61 | Prometio-151                 | W, ver <sup>141</sup> Pm                            | 7.40x10 <sup>7</sup>                                            | 1.48x10 <sup>8</sup>              | 3.70x10 <sup>4</sup>  | 1.85x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              | Y, ver <sup>141</sup> Pm                            | -                                                               | 1.11x10 <sup>8</sup>              | 3.70x10 <sup>4</sup>  | 1.48x10 <sup>2</sup>  | -                    | -                    |
| 91 | Protactinio-227 <sup>2</sup> | W, todos los compuestos, excepto los señalados en Y | 1.48x10 <sup>8</sup>                                            | 3.70x10 <sup>6</sup>              | 1.85x10 <sup>3</sup>  | 7.40                  | 1.85x10 <sup>6</sup> | 1.85x10 <sup>7</sup> |
|    |                              | Y, óxidos e hidróxidos                              | -                                                               | 3.70x10 <sup>6</sup>              | 1.48x10 <sup>3</sup>  | 3.70                  | -                    | -                    |
| 91 | Protactinio-228              | W, ver <sup>227</sup> Pa                            | 3.70x10 <sup>7</sup>                                            | 3.70x10 <sup>5</sup><br>Sup. ósea | 1.85x10 <sup>2</sup>  | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              |                                                     | -                                                               | (7.40x10 <sup>5</sup> )           | -                     | 1.11                  | -                    | -                    |
|    |                              | Y, ver <sup>227</sup> Pa                            | -                                                               | 3.70x10 <sup>5</sup>              | 1.85x10 <sup>2</sup>  | 7.40x10 <sup>-1</sup> | -                    | -                    |
| 91 | Protactinio-230              | W, ver <sup>227</sup> Pa                            | 2.22x10 <sup>7</sup><br>Sup. ósea                               | 1.85x10 <sup>5</sup>              | 7.40x10 <sup>1</sup>  | 2.59x10 <sup>-1</sup> | -                    | -                    |
|    |                              |                                                     | (3.33x10 <sup>7</sup> )                                         | -                                 | -                     | -                     | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                              | Y, ver <sup>227</sup> Pa                            | -                                                               | 1.48x10 <sup>5</sup>              | 3.70x10 <sup>1</sup>  | 1.85x10 <sup>-1</sup> | -                    | -                    |
| 91 | Protactinio-231              | W, ver <sup>227</sup> Pa                            | 7.40x10 <sup>3</sup><br>Sup. ósea                               | 7.40x10 <sup>1</sup><br>Sup. ósea | 2.22x10 <sup>-2</sup> | -                     | -                    | -                    |
|    |                              |                                                     | (1.85x10 <sup>4</sup> )                                         | (1.48x10 <sup>2</sup> )           | -                     | 2.22x10 <sup>-4</sup> | 2.22x10 <sup>2</sup> | 2.22x10 <sup>3</sup> |
|    |                              | Y, ver <sup>227</sup> Pa                            | -                                                               | 1.48x10 <sup>2</sup><br>Sup. ósea | 7.40x10 <sup>-2</sup> | -                     | -                    | -                    |
|    |                              |                                                     | -                                                               | (2.22x10 <sup>2</sup> )           | -                     | 2.96x10 <sup>-4</sup> | -                    | -                    |
| 91 | Protactinio-232              | W, ver <sup>227</sup> Pa                            | 3.70x10 <sup>7</sup>                                            | 7.40x10 <sup>5</sup><br>Sup. Ósea | 3.33x10 <sup>2</sup>  | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              |                                                     | -                                                               | (2.22x10 <sup>6</sup> )           | -                     | 2.96                  | -                    | -                    |
|    |                              | Y, ver <sup>227</sup> Pa                            | -                                                               | 2.22x10 <sup>6</sup><br>Sup. Ósea | 7.40x10 <sup>2</sup>  | -                     | -                    | -                    |
|    |                              |                                                     | -                                                               | (2.59x10 <sup>6</sup> )           | -                     | 3.70                  | -                    | -                    |
| 91 | Protactinio-233              | W, ver <sup>227</sup> Pa                            | 3.70x10 <sup>7</sup><br>Pared IGI                               | 2.59x10 <sup>7</sup>              | 1.11x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | -                    | -                    |
|    |                              |                                                     | (7.40x10 <sup>7</sup> )                                         | -                                 | -                     | -                     | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                              | Y, ver <sup>227</sup> Pa                            | -                                                               | 2.22x10 <sup>7</sup>              | 7.40x10 <sup>3</sup>  | 2.96x10 <sup>1</sup>  | -                    | -                    |

|    |                        |                                                    |                                      |                                                              |                                                     |                       |                      |                      |
|----|------------------------|----------------------------------------------------|--------------------------------------|--------------------------------------------------------------|-----------------------------------------------------|-----------------------|----------------------|----------------------|
| 91 | Protactinio-234        | W, ver <sup>227</sup> Pa                           | 7.40x10 <sup>7</sup>                 | 2.96x10 <sup>8</sup>                                         | 1.11x10 <sup>5</sup>                                | 3.70x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                        | Y, ver <sup>227</sup> Pa                           | -                                    | 2.59x10 <sup>8</sup>                                         | 1.11x10 <sup>5</sup>                                | 3.33x10 <sup>2</sup>  | -                    | -                    |
| 88 | Radio-223              | W, todos los compuestos                            | 1.85x10 <sup>5</sup><br>Sup. ósea    | 2.59x10 <sup>4</sup>                                         | 1.11x10 <sup>1</sup>                                | 3.33x10 <sup>-2</sup> | -                    | -                    |
|    |                        |                                                    | (3.33x10 <sup>5</sup> )              | -                                                            | -                                                   | -                     | 3.7x10 <sup>3</sup>  | 3.7x10 <sup>4</sup>  |
| 88 | Radio-224              | W, todos los compuestos                            | 2.96x10 <sup>5</sup><br>Sup. ósea    | 7.40x10 <sup>4</sup>                                         | 2.59x10 <sup>1</sup>                                | 7.40x10 <sup>-2</sup> | -                    | -                    |
|    |                        |                                                    | (7.40x10 <sup>5</sup> )              | -                                                            | -                                                   | -                     | 7.40x10 <sup>3</sup> | 7.40x10 <sup>4</sup> |
| 88 | Radio-225              | W, todos los compuestos                            | 2.96x10 <sup>5</sup><br>Sup. ósea    | 2.59x10 <sup>4</sup>                                         | 1.11x10 <sup>1</sup>                                | 3.33x10 <sup>-2</sup> | -                    | -                    |
|    |                        |                                                    | (7.40x10 <sup>5</sup> )              | -                                                            | -                                                   | -                     | 7.40x10 <sup>3</sup> | 7.40x10 <sup>4</sup> |
| 88 | Radio-226              | W, todos los compuestos                            | 7.40x10 <sup>4</sup><br>Sup. ósea    | 2.22x10 <sup>4</sup>                                         | 1.11x10 <sup>1</sup>                                | 3.33x10 <sup>-2</sup> | -                    | -                    |
|    |                        |                                                    | (1.85x10 <sup>5</sup> )              | -                                                            | -                                                   | -                     | 2.22x10 <sup>3</sup> | 2.22x10 <sup>4</sup> |
| 88 | Radio-227 <sup>2</sup> | W, todos los compuestos                            | 7.40x10 <sup>8</sup><br>Sup. ósea    | 3.70x10 <sup>8</sup><br>Sup. ósea                            | 2.22x10 <sup>5</sup>                                | -                     | -                    | -                    |
|    |                        |                                                    | (7.40x10 <sup>8</sup> )              | (7.40x10 <sup>8</sup> )                                      | -                                                   | 1.11x10 <sup>3</sup>  | 1.11x10 <sup>7</sup> | 1.11x10 <sup>8</sup> |
| 88 | Radio-228              | W, todos los compuestos                            | 7.40x10 <sup>4</sup><br>Sup. ósea    | 3.70x10 <sup>4</sup>                                         | 1.85x10 <sup>1</sup>                                | 7.40x10 <sup>-2</sup> | -                    | -                    |
|    |                        |                                                    | (1.48x10 <sup>5</sup> )              | -                                                            | -                                                   | -                     | 2.22x10 <sup>3</sup> | 2.22x10 <sup>4</sup> |
| 86 | Radón-220              | Sin descendientes presentes                        | -                                    | 7.40x10 <sup>8</sup>                                         | 2.59x10 <sup>5</sup>                                | 7.40x10 <sup>2</sup>  | -                    | -                    |
|    |                        | Con descendientes presentes                        | -                                    | 2.00 x10 <sup>1</sup><br>(o 12 niveles de trabajo mensuales) | 3.33x10 <sup>2</sup><br>(o 1.0 nivel de trabajo)    | 1.11                  | -                    | -                    |
| 86 | Radon-222              | Sin descendientes presentes                        | -                                    | 3.70x10 <sup>8</sup>                                         | 1.48x10 <sup>5</sup>                                | 3.70x10 <sup>2</sup>  | -                    | -                    |
|    |                        | Con descendientes presentes                        | -                                    | 3.70x10 <sup>6</sup><br>(o 4 niveles de trabajo mensuales)   | 1.11x10 <sup>3</sup><br>(o 0.33 niveles de trabajo) | 3.70                  | -                    | -                    |
| 75 | Renio-177 <sup>2</sup> | D, todos los compuestos excepto los señalados en W | 3.33x10 <sup>9</sup><br>Pared Estom  | 1.11x10 <sup>10</sup>                                        | 3.70x10 <sup>6</sup>                                | 1.48x10 <sup>4</sup>  | -                    | -                    |
|    |                        |                                                    | (3.70x10 <sup>9</sup> )              | -                                                            | -                                                   | -                     | 7.40x10 <sup>7</sup> | 7.40x10 <sup>8</sup> |
| 75 | Renio-178 <sup>2</sup> | D, ver <sup>177</sup> Re                           | 2.59x10 <sup>9</sup><br>Pared Estom. | 1.11x10 <sup>10</sup>                                        | 3.70x10 <sup>6</sup>                                | 1.48x10 <sup>4</sup>  | -                    | -                    |
|    |                        |                                                    | (3.70x10 <sup>9</sup> )              | -                                                            | -                                                   | -                     | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
| 75 | Renio-181              | D, ver <sup>177</sup> Re                           | 1.85x10 <sup>8</sup>                 | 3.33x10 <sup>8</sup>                                         | 1.48x10 <sup>5</sup>                                | 3.70x10 <sup>2</sup>  | 2.59x10 <sup>6</sup> | 2.59x10 <sup>7</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 3.33x10 <sup>8</sup>                                         | 1.48x10 <sup>5</sup>                                | 3.70x10 <sup>2</sup>  | -                    | -                    |
| 75 | Renio-182 (12.7h)      | D, ver <sup>177</sup> Re                           | 3.70x10 <sup>7</sup>                 | 7.40x10 <sup>7</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.11x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 7.40x10 <sup>7</sup>                                         | 3.33x10 <sup>4</sup>                                | 1.11x10 <sup>2</sup>  | -                    | -                    |
| 75 | Renio-182 (64.0 h)     | D, ver <sup>177</sup> Re                           | 3.70x10 <sup>7</sup>                 | 7.40x10 <sup>7</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.11x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 7.40x10 <sup>7</sup>                                         | 3.33x10 <sup>4</sup>                                | 1.11x10 <sup>2</sup>  | -                    | -                    |
| 75 | Renio-184              | D, ver <sup>177</sup> Re                           | 7.40x10 <sup>7</sup>                 | 1.48x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.85x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 3.70x10 <sup>7</sup>                                         | 2.22x10 <sup>4</sup>                                | 7.40x10 <sup>1</sup>  | -                    | -                    |
| 75 | Renio-184m             | D, ver <sup>177</sup> Re                           | 7.40x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.48x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 1.48x10 <sup>7</sup>                                         | 7.40x10 <sup>3</sup>                                | 2.22x10 <sup>1</sup>  | -                    | -                    |
| 75 | Renio-186              | D, ver <sup>177</sup> Re                           | 7.40x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.48x10 <sup>2</sup>  | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 7.40x10 <sup>7</sup>                                         | 2.59x10 <sup>4</sup>                                | 7.40x10 <sup>1</sup>  | -                    | -                    |
| 75 | Renio-186m             | D, ver <sup>177</sup> Re                           | 3.70x10 <sup>7</sup><br>Pared Estom. | 7.40x10 <sup>7</sup><br>Pared Estom.                         | 2.59x10 <sup>4</sup>                                | -                     | -                    | -                    |
|    |                        |                                                    | (7.40x10 <sup>7</sup> )              | (7.40x10 <sup>7</sup> )                                      | -                                                   | 1.11x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
| 75 | Renio-187              | D, ver <sup>177</sup> Re                           | 2.22x10 <sup>10</sup>                | 2.96x10 <sup>10</sup><br>Pared Estom.                        | 1.48x10 <sup>7</sup>                                | -                     | 2.96x10 <sup>8</sup> | 2.96x10 <sup>9</sup> |
|    |                        |                                                    | -                                    | (3.33x10 <sup>10</sup> )                                     | -                                                   | 3.70x10 <sup>4</sup>  | -                    | -                    |
| 75 | Renio-188              | D, ver <sup>177</sup> Re                           | 7.40x10 <sup>7</sup>                 | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.48x10 <sup>2</sup>  | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                        | W, ver <sup>177</sup> Re                           | -                                    | 1.11x10 <sup>8</sup>                                         | 3.70x10 <sup>4</sup>                                | 1.48x10 <sup>2</sup>  | -                    | -                    |

|    |                          |                                                        |                          |                       |                      |                      |                      |                      |
|----|--------------------------|--------------------------------------------------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| 75 | Renio-188m <sup>2</sup>  | D, ver <sup>177</sup> Re                               | 2.96x10 <sup>9</sup>     | 3.70x10 <sup>9</sup>  | 2.22x10 <sup>6</sup> | 7.40x10 <sup>3</sup> | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                          | W, ver <sup>177</sup> Re                               | -                        | 3.70x10 <sup>9</sup>  | 2.22x10 <sup>6</sup> | 7.40x10 <sup>3</sup> | -                    | -                    |
| 75 | Renio-189                | D, ver <sup>177</sup> Re                               | 1.11x10 <sup>8</sup>     | 1.85x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.59x10 <sup>2</sup> | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
|    |                          | W, ver <sup>177</sup> Re                               | -                        | 1.48x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup> | -                    | -                    |
| 45 | Rodio-99                 | D, ver <sup>99m</sup> Rh                               | 7.40x10 <sup>7</sup>     | 1.11x10 <sup>8</sup>  | 3.70x10 <sup>4</sup> | 1.48x10 <sup>2</sup> | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 7.40x10 <sup>7</sup>  | 3.33x10 <sup>4</sup> | 1.11x10 <sup>2</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 7.40x10 <sup>7</sup>  | 2.96x10 <sup>4</sup> | 1.11x10 <sup>2</sup> | -                    | -                    |
| 45 | Rodio-99m                | D, todos los compuestos excepto los señalados en W y Y | 7.40x10 <sup>8</sup>     | 2.22x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 2.96x10 <sup>3</sup> | 7.40x10 <sup>6</sup> | 7.40x10 <sup>7</sup> |
|    |                          | W, haluros                                             | -                        | 2.96x10 <sup>9</sup>  | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup> | -                    | -                    |
|    |                          | Y, óxidos e hidróxidos                                 | -                        | 2.59x10 <sup>9</sup>  | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup> | -                    | -                    |
| 45 | Rodio-100                | D, ver <sup>99m</sup> Rh                               | 7.40x10 <sup>7</sup>     | 1.85x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.59x10 <sup>2</sup> | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 1.48x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 1.48x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 1.85x10 <sup>2</sup> | -                    | -                    |
| 45 | Rodio-101                | D, ver <sup>99m</sup> Rh                               | 7.40x10 <sup>7</sup>     | 1.85x10 <sup>7</sup>  | 7.40x10 <sup>3</sup> | 2.59x10 <sup>1</sup> | 1.11x10 <sup>6</sup> | 1.11x10 <sup>7</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 2.96x10 <sup>7</sup>  | 1.11x10 <sup>4</sup> | 3.70x10 <sup>1</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 7.40x10 <sup>6</sup>  | 2.22x10 <sup>3</sup> | 7.40                 | -                    | -                    |
| 45 | Rodio-101m               | D, ver <sup>99m</sup> Rh                               | 2.22x10 <sup>8</sup>     | 3.70x10 <sup>8</sup>  | 1.85x10 <sup>5</sup> | 7.40x10 <sup>2</sup> | 2.96x10 <sup>6</sup> | 2.96x10 <sup>7</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 2.96x10 <sup>8</sup>  | 1.48x10 <sup>5</sup> | 3.70x10 <sup>2</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 2.96x10 <sup>8</sup>  | 1.11x10 <sup>5</sup> | 3.70x10 <sup>2</sup> | -                    | -                    |
| 45 | Rodio-102                | D, ver <sup>99m</sup> Rh                               | 2.22x10 <sup>7</sup>     | 3.33x10 <sup>6</sup>  | 1.48x10 <sup>3</sup> | 3.70                 | 2.96x10 <sup>5</sup> | 2.96x10 <sup>6</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 7.40x10 <sup>6</sup>  | 2.59x10 <sup>3</sup> | 7.40                 | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 2.22x10 <sup>6</sup>  | 7.40x10 <sup>2</sup> | 2.96                 | -                    | -                    |
| 45 | Rodio-102m               | D, ver <sup>99m</sup> Rh                               | 3.70x10 <sup>7</sup>     | 1.85x10 <sup>7</sup>  | 7.40x10 <sup>3</sup> | 2.59x10 <sup>1</sup> | -                    | -                    |
|    |                          | Pared IGI                                              | (3.70x10 <sup>7</sup> )  | -                     | -                    | -                    | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 1.48x10 <sup>7</sup>  | 7.40x10 <sup>3</sup> | 1.85x10 <sup>1</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 3.70x10 <sup>6</sup>  | 1.85x10 <sup>3</sup> | 7.40                 | -                    | -                    |
| 45 | Rodio-103m <sup>2</sup>  | D, ver <sup>99m</sup> Rh                               | 1.48x10 <sup>10</sup>    | 3.70x10 <sup>10</sup> | 1.85x10 <sup>7</sup> | 7.40x10 <sup>4</sup> | 2.22x10 <sup>8</sup> | 2.22x10 <sup>9</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 3.70x10 <sup>10</sup> | 1.85x10 <sup>7</sup> | 7.40x10 <sup>4</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 3.70x10 <sup>10</sup> | 1.85x10 <sup>7</sup> | 7.40x10 <sup>4</sup> | -                    | -                    |
| 45 | Rodio-105                | D, ver <sup>99m</sup> Rh                               | 1.48x10 <sup>8</sup>     | 3.70x10 <sup>8</sup>  | 1.85x10 <sup>5</sup> | 7.40x10 <sup>2</sup> | -                    | -                    |
|    |                          | Pared IGI                                              | 1.48x10 <sup>8</sup>     | -                     | -                    | -                    | 1.85x10 <sup>6</sup> | 1.85x10 <sup>7</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 2.22x10 <sup>8</sup>  | 1.11x10 <sup>5</sup> | 3.33x10 <sup>2</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 2.22x10 <sup>8</sup>  | 7.40x10 <sup>4</sup> | 2.96x10 <sup>2</sup> | -                    | -                    |
| 45 | Rodio-106m               | D, ver <sup>99m</sup> Rh                               | 2.96x10 <sup>8</sup>     | 1.11x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup> | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 1.48x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 1.85x10 <sup>3</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 1.48x10 <sup>9</sup>  | 3.70x10 <sup>5</sup> | 1.85x10 <sup>3</sup> | -                    | -                    |
| 45 | Rodio-107 <sup>2</sup>   | D, ver <sup>99m</sup> Rh                               | 2.59x10 <sup>9</sup>     | 7.40x10 <sup>9</sup>  | 3.70x10 <sup>6</sup> | 1.11x10 <sup>4</sup> | -                    | -                    |
|    |                          | Pared Estom.                                           | (3.33x10 <sup>9</sup> )  | -                     | -                    | -                    | 3.70x10 <sup>7</sup> | 3.70x10 <sup>8</sup> |
|    |                          | W, ver <sup>99m</sup> Rh                               | -                        | 1.11x10 <sup>10</sup> | 3.70x10 <sup>6</sup> | 1.48x10 <sup>4</sup> | -                    | -                    |
|    |                          | Y, ver <sup>99m</sup> Rh                               | -                        | 1.11x10 <sup>10</sup> | 3.70x10 <sup>6</sup> | 1.11x10 <sup>4</sup> | -                    | -                    |
| 37 | Rubidio-79 <sup>2</sup>  | D, todos los compuestos                                | 1.48x10 <sup>9</sup>     | 3.70x10 <sup>9</sup>  | 1.85x10 <sup>6</sup> | 7.40x10 <sup>3</sup> | -                    | -                    |
|    |                          | Pared Estom.                                           | (2.22x10 <sup>9</sup> )  | -                     | -                    | -                    | 2.96x10 <sup>7</sup> | 2.96x10 <sup>8</sup> |
| 37 | Rubidio-81               | D, todos los compuestos                                | 1.48x10 <sup>9</sup>     | 1.85x10 <sup>9</sup>  | 7.40x10 <sup>5</sup> | 2.59x10 <sup>3</sup> | 1.85x10 <sup>7</sup> | 1.85x10 <sup>8</sup> |
| 37 | Rubidio-81m <sup>2</sup> | D, todos los compuestos                                | 7.40x10 <sup>9</sup>     | 1.11x10 <sup>10</sup> | 3.70x10 <sup>6</sup> | 1.85x10 <sup>4</sup> | -                    | -                    |
|    |                          | Pared Estom.                                           | (1.11x10 <sup>10</sup> ) | -                     | -                    | -                    | 1.48x10 <sup>8</sup> | 1.48x10 <sup>9</sup> |

|    |                           |                                                        |                                    |                                 |                       |                       |                    |                    |
|----|---------------------------|--------------------------------------------------------|------------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 37 | Rubidio-82m               | D, todos los compuestos                                | $3.70 \times 10^8$                 | $7.40 \times 10^8$              | $2.59 \times 10^5$    | $7.40 \times 10^2$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 37 | Rubidio-83                | D, todos los compuestos                                | $2.22 \times 10^7$                 | $3.70 \times 10^7$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
| 37 | Rubidio-84                | D, todos los compuestos                                | $1.85 \times 10^7$                 | $2.96 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 37 | Rubidio-86                | D, todos los compuestos                                | $1.85 \times 10^7$                 | $2.96 \times 10^7$              | $1.11 \times 10^4$    | $3.70 \times 10^1$    | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 37 | Rubidio-87                | D, todos los compuestos                                | $3.70 \times 10^7$                 | $7.40 \times 10^7$              | $2.22 \times 10^4$    | $7.40 \times 10^1$    | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 37 | Rubidio-88 <sup>2</sup>   | D, todos los compuestos                                | $7.40 \times 10^8$<br>Pared Estom. | $2.22 \times 10^9$              | $1.11 \times 10^6$    | $3.33 \times 10^3$    | -                  | -                  |
|    |                           |                                                        | $1.11 \times 10^9$                 | -                               | -                     | -                     | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 37 | Rubidio-89 <sup>2</sup>   | D, todos los compuestos                                | $1.48 \times 10^9$<br>Pared Estom. | $3.70 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                           |                                                        | $(2.22 \times 10^9)$               | -                               | -                     | -                     | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
| 44 | Rutenio-94 <sup>2</sup>   | D, todos los compuestos excepto los señalados en W y Y | $7.40 \times 10^8$                 | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                           | W, haluros                                             | -                                  | $2.22 \times 10^9$              | $1.11 \times 10^6$    | $3.33 \times 10^3$    | -                  | -                  |
|    |                           | Y, óxidos e hidróxidos                                 | -                                  | $2.22 \times 10^9$              | $7.40 \times 10^5$    | $2.96 \times 10^3$    | -                  | -                  |
| 44 | Rutenio-97                | D, ver <sup>94</sup> Ru                                | $2.96 \times 10^8$                 | $7.40 \times 10^8$              | $2.96 \times 10^5$    | $1.11 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                           | W, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
|    |                           | Y, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 44 | Rutenio-103               | D, ver <sup>94</sup> Ru                                | $7.40 \times 10^7$                 | $7.40 \times 10^7$              | $2.59 \times 10^4$    | $7.40 \times 10^1$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                           | W, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^7$              | $1.48 \times 10^4$    | $3.70 \times 10^1$    | -                  | -                  |
|    |                           | Y, ver <sup>94</sup> Ru                                | -                                  | $2.22 \times 10^7$              | $1.11 \times 10^4$    | $3.33 \times 10^1$    | -                  | -                  |
| 44 | Rutenio-105               | D, ver <sup>94</sup> Ru                                | $1.85 \times 10^8$                 | $3.70 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
|    |                           | W, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^8$              | $2.22 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
|    |                           | Y, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 44 | Rutenio-106               | D, ver <sup>94</sup> Ru                                | $7.40 \times 10^6$<br>Pared IGI    | $3.33 \times 10^6$              | $1.48 \times 10^3$    | 3.70                  | -                  | -                  |
|    |                           |                                                        | $(7.40 \times 10^6)$               | -                               | -                     | -                     | $1.11 \times 10^5$ | $1.11 \times 10^6$ |
|    |                           | W, ver <sup>94</sup> Ru                                | -                                  | $1.85 \times 10^6$              | $7.40 \times 10^2$    | 2.96                  | -                  | -                  |
|    |                           | Y, ver <sup>94</sup> Ru                                | -                                  | $3.70 \times 10^5$              | $1.85 \times 10^2$    | $7.40 \times 10^{-1}$ | -                  | -                  |
| 62 | Samario-141 <sup>2</sup>  | W, todos los compuestos                                | $1.85 \times 10^9$<br>Pared Estom. | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                           |                                                        | $(2.22 \times 10^9)$               | -                               | -                     | -                     | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
| 62 | Samario-141m <sup>2</sup> | W, todos los compuestos                                | $1.11 \times 10^9$                 | $3.70 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 62 | Samario-142 <sup>2</sup>  | W, todos los compuestos                                | $2.96 \times 10^8$                 | $1.11 \times 10^9$              | $3.70 \times 10^5$    | $1.48 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 62 | Samario-145               | W, todos los compuestos                                | $2.22 \times 10^8$                 | $1.85 \times 10^7$              | $7.40 \times 10^3$    | $2.59 \times 10^1$    | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
| 62 | Samario-146               | W, todos los compuestos                                | $3.70 \times 10^5$<br>Sup. ósea    | $1.48 \times 10^7$<br>Sup. ósea | $3.70 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           |                                                        | $(1.11 \times 10^6)$               | $(2.22 \times 10^3)$            | -                     | $3.33 \times 10^{-3}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
| 62 | Samario-147               | W, todos los compuestos                                | $7.40 \times 10^5$<br>Sup. ósea    | $1.48 \times 10^7$<br>Sup. ósea | $7.40 \times 10^{-1}$ | -                     | -                  | -                  |
|    |                           |                                                        | $(1.11 \times 10^6)$               | $2.59 \times 10^3$              | -                     | $3.70 \times 10^{-3}$ | $1.48 \times 10^4$ | $1.48 \times 10^5$ |
| 62 | Samario-151               | W, todos los compuestos                                | $3.70 \times 10^8$<br>Pared IGI    | $3.70 \times 10^6$<br>Sup. ósea | $1.48 \times 10^3$    | -                     | -                  | -                  |
|    |                           |                                                        | $(3.70 \times 10^8)$               | $(7.40 \times 10^6)$            | -                     | 7.40                  | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 62 | Samario-153               | W, todos los compuestos                                | $7.40 \times 10^7$<br>Pared IGI    | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
|    |                           |                                                        | $(7.40 \times 10^7)$               | -                               | -                     | -                     | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 62 | Samario-155 <sup>2</sup>  | W, todos los compuestos                                | $2.22 \times 10^9$<br>Pared Estom. | $7.40 \times 10^9$              | $3.33 \times 10^6$    | $1.11 \times 10^4$    | -                  | -                  |
|    |                           |                                                        | $(2.96 \times 10^9)$               | -                               | -                     | -                     | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 62 | Samario-156               | W, todos los compuestos                                | $1.85 \times 10^8$                 | $3.33 \times 10^8$              | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
| 34 | Selenio-70 <sup>2</sup>   | D, todos los compuestos excepto los señalados en W     | $7.40 \times 10^8$                 | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $1.85 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                           | W, óxidos, hidróxidos, carburos, y elemental Se        | $3.70 \times 10^8$                 | $1.48 \times 10^9$              | $7.40 \times 10^5$    | $2.22 \times 10^3$    | -                  | -                  |
| 34 | Selenio-73                | D, ver <sup>70</sup> Se                                | $1.11 \times 10^8$                 | $3.70 \times 10^8$              | $1.85 \times 10^5$    | $7.40 \times 10^2$    | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                           | W, ver <sup>70</sup> Se                                | -                                  | $7.40 \times 10^8$              | $2.59 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
| 34 | Selenio-73m <sup>2</sup>  | D, ver <sup>70</sup> Se                                | $2.22 \times 10^9$                 | $7.40 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                           | W, ver <sup>70</sup> Se                                | $1.11 \times 10^9$                 | $3.70 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |

|    |                           |                                                                              |                                                                    |                       |                    |                       |                    |                    |
|----|---------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------|--------------------|-----------------------|--------------------|--------------------|
| 34 | Selenio-75                | D, ver $^{70}\text{Se}$                                                      | $1.85 \times 10^7$                                                 | $2.59 \times 10^7$    | $1.11 \times 10^4$ | $3.70 \times 10^1$    | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
|    |                           | W, ver $^{70}\text{Se}$                                                      | -                                                                  | $2.22 \times 10^7$    | $1.11 \times 10^4$ | $2.96 \times 10^1$    | -                  | -                  |
| 34 | Selenio-79                | D, ver $^{70}\text{Se}$                                                      | $2.22 \times 10^7$                                                 | $2.96 \times 10^7$    | $1.11 \times 10^4$ | $3.70 \times 10^1$    | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
|    |                           | W, ver $^{70}\text{Se}$                                                      | -                                                                  | $2.22 \times 10^7$    | $7.40 \times 10^3$ | $2.96 \times 10^1$    | -                  | -                  |
| 34 | Selenio-81 <sup>2</sup>   | D, ver $^{70}\text{Se}$                                                      | $2.22 \times 10^9$<br>Pared Estom.<br>( $2.96 \times 10^9$ )       | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|    |                           | W, ver $^{70}\text{Se}$                                                      | -                                                                  | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$    | -                  | -                  |
|    |                           | D, ver $^{70}\text{Se}$                                                      | $1.48 \times 10^9$                                                 | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.33 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 34 | Selenio-81m <sup>2</sup>  | W, ver $^{70}\text{Se}$                                                      | $7.40 \times 10^8$                                                 | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                           | D, ver $^{70}\text{Se}$                                                      | $1.48 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 34 | Selenio-83 <sup>2</sup>   | W, ver $^{70}\text{Se}$                                                      | $1.11 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
|    |                           | D, todos los compuestos excepto los señalados en W y Y                       | $3.33 \times 10^8$                                                 | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.48 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 14 | Silicio-31                | W, óxidos, hidróxidos, carburos, y nitratos                                  | -                                                                  | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.85 \times 10^3$    | -                  | -                  |
|    |                           | Y, vidrio de aluminosilicato                                                 | -                                                                  | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.48 \times 10^3$    | -                  | -                  |
|    |                           | D, ver $^{31}\text{Si}$                                                      | $7.40 \times 10^7$<br>Pared IGI<br>( $1.11 \times 10^8$ )          | $7.40 \times 10^6$    | $3.70 \times 10^3$ | $1.11 \times 10^1$    | -                  | -                  |
| 14 | Silicio-32                | W, ver $^{31}\text{Si}$                                                      | -                                                                  | $3.70 \times 10^6$    | $1.85 \times 10^3$ | 7.40                  | -                  | -                  |
|    |                           | Y, ver $^{31}\text{Si}$                                                      | -                                                                  | $1.85 \times 10^5$    | $7.40 \times 10^1$ | $2.59 \times 10^{-1}$ | -                  | -                  |
|    |                           | D, todos los compuestos                                                      | $1.48 \times 10^7$                                                 | $2.22 \times 10^7$    | $1.11 \times 10^4$ | $3.33 \times 10^1$    | $2.22 \times 10^5$ | $2.22 \times 10^6$ |
| 11 | Sodio-22                  | D, todos los compuestos                                                      | $1.48 \times 10^8$                                                 | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.59 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 11 | Sodio-24                  | D, todos los compuestos                                                      | $1.11 \times 10^{10}$<br>Pared Estom.<br>( $1.11 \times 10^{10}$ ) | $2.22 \times 10^{10}$ | $7.40 \times 10^6$ | $2.96 \times 10^4$    | -                  | -                  |
| 81 | Talio-194 <sup>2</sup>    | D, todos los compuestos                                                      | $1.85 \times 10^9$<br>Pared Estom.<br>( $2.59 \times 10^9$ )       | $7.40 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$    | -                  | -                  |
|    |                           | D, todos los compuestos                                                      | $2.22 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
|    |                           | D, todos los compuestos                                                      | $2.59 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 81 | Talio-195 <sup>2</sup>    | D, todos los compuestos                                                      | $7.40 \times 10^9$                                                 | $1.11 \times 10^9$    | $3.70 \times 10^5$ | $1.85 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 81 | Talio-197                 | D, todos los compuestos                                                      | $1.11 \times 10^9$                                                 | $1.85 \times 10^9$    | $7.40 \times 10^5$ | $2.96 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 81 | Talio-198                 | D, todos los compuestos                                                      | $2.22 \times 10^9$                                                 | $2.96 \times 10^9$    | $1.48 \times 10^5$ | $3.70 \times 10^3$    | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
| 81 | Talio-198m <sup>2</sup>   | D, todos los compuestos                                                      | $2.96 \times 10^8$                                                 | $3.70 \times 10^8$    | $1.85 \times 10^5$ | $7.40 \times 10^2$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 81 | Talio-199                 | D, todos los compuestos                                                      | $7.40 \times 10^8$                                                 | $7.40 \times 10^8$    | $3.33 \times 10^5$ | $1.11 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 81 | Talio-200                 | D, todos los compuestos                                                      | $1.48 \times 10^8$                                                 | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.59 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
| 81 | Talio-201                 | D, todos los compuestos                                                      | $7.40 \times 10^7$                                                 | $7.40 \times 10^7$    | $3.33 \times 10^4$ | $1.11 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 81 | Talio-202                 | D, todos los compuestos                                                      | $1.48 \times 10^7$                                                 | $1.85 \times 10^7$    | $7.40 \times 10^3$ | $2.59 \times 10^1$    | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
| 81 | Talio-204                 | D, todos los compuestos                                                      | $1.48 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.85 \times 10^6$ | $7.40 \times 10^3$    | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
| 73 | Tantalio-172 <sup>2</sup> | W, todos los compuestos, excepto los señalados en Y                          | -                                                                  | $3.70 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
|    |                           | Y, elemental Ta, óxidos, hidróxidos, haluros, carburos, nitratos, y nitrides | -                                                                  | $3.70 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 73 | Tantalio-173              | W, ver $^{172}\text{Ta}$                                                     | $2.59 \times 10^8$                                                 | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$    | $3.33 \times 10^6$ | $3.33 \times 10^7$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 73 | Tantalio-174 <sup>2</sup> | W, ver $^{172}\text{Ta}$                                                     | $1.11 \times 10^9$                                                 | $3.70 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$    | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $3.33 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 73 | Tantalio-175              | W, ver $^{172}\text{Ta}$                                                     | $2.22 \times 10^8$                                                 | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $3.70 \times 10^8$    | $2.22 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 73 | Tantalio-176              | W, ver $^{172}\text{Ta}$                                                     | $1.48 \times 10^8$                                                 | $3.70 \times 10^8$    | $1.85 \times 10^5$ | $7.40 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $3.70 \times 10^8$    | $1.85 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 73 | Tantalio-177              | W, ver $^{172}\text{Ta}$                                                     | $3.70 \times 10^8$                                                 | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $7.40 \times 10^8$    | $2.59 \times 10^5$ | $7.40 \times 10^2$    | -                  | -                  |
| 73 | Tantalio-178              | W, ver $^{172}\text{Ta}$                                                     | $7.40 \times 10^8$                                                 | $3.33 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.70 \times 10^3$    | -                  | -                  |
| 73 | Tantalio-179              | W, ver $^{172}\text{Ta}$                                                     | $7.40 \times 10^8$                                                 | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.96 \times 10^2$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $3.33 \times 10^7$    | $1.48 \times 10^4$ | $3.70 \times 10^1$    | -                  | -                  |
| 73 | Tantalio-180              | W, ver $^{172}\text{Ta}$                                                     | $3.70 \times 10^7$                                                 | $1.48 \times 10^7$    | $7.40 \times 10^3$ | $2.22 \times 10^1$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                           | Y, ver $^{172}\text{Ta}$                                                     | -                                                                  | $7.40 \times 10^5$    | $3.70 \times 10^2$ | 1.11                  | -                  | -                  |

|    |                            |                                                    |                                    |                       |                    |                    |                    |                    |
|----|----------------------------|----------------------------------------------------|------------------------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|
| 73 | Tantalio-180m              | W, ver $^{172}\text{Ta}$                           | $7.40 \times 10^8$                 | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.33 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $2.22 \times 10^9$    | $7.40 \times 10^5$ | $2.96 \times 10^3$ | -                  | -                  |
| 73 | Tantalio-182               | W, ver $^{172}\text{Ta}$                           | $2.96 \times 10^7$                 | $1.11 \times 10^7$    | $3.70 \times 10^3$ | $1.85 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $3.70 \times 10^6$    | $2.22 \times 10^3$ | 7.40               | -                  | -                  |
| 73 | Tantalio-182m <sup>2</sup> | W, ver $^{172}\text{Ta}$                           | $7.40 \times 10^9$<br>Pared Estom. | $1.85 \times 10^{10}$ | $7.40 \times 10^6$ | $2.96 \times 10^4$ | -                  | -                  |
|    |                            |                                                    | $(7.40 \times 10^9)$               | -                     | -                  | -                  | $1.11 \times 10^8$ | $1.11 \times 10^9$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $1.48 \times 10^{10}$ | $7.40 \times 10^6$ | $2.22 \times 10^4$ | -                  | -                  |
| 73 | Tantalio-183               | W, ver $^{172}\text{Ta}$                           | $3.33 \times 10^7$<br>Pared IGI    | $3.70 \times 10^7$    | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
|    |                            |                                                    | $(3.70 \times 10^7)$               | -                     | -                  | -                  | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $3.70 \times 10^7$    | $1.48 \times 10^4$ | $3.70 \times 10^1$ | -                  | -                  |
| 73 | Tantalio-184               | W, ver $^{172}\text{Ta}$                           | $7.40 \times 10^7$                 | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.96 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.59 \times 10^2$ | -                  | -                  |
| 73 | Tantalio-185 <sup>2</sup>  | W, ver $^{172}\text{Ta}$                           | $1.11 \times 10^9$                 | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.70 \times 10^3$ | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $2.22 \times 10^9$    | $1.11 \times 10^6$ | $3.33 \times 10^3$ | -                  | -                  |
| 73 | Tantalio-186 <sup>2</sup>  | W, ver $^{172}\text{Ta}$                           | $1.85 \times 10^9$<br>Pared Estom. | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
|    |                            |                                                    | $(2.59 \times 10^9)$               | -                     | -                  | -                  | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                            | Y, ver $^{172}\text{Ta}$                           | -                                  | $7.40 \times 10^9$    | $3.33 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
| 43 | Tecnecio-93                | D, ver $^{93m}\text{Tc}$                           | $1.11 \times 10^9$                 | $2.59 \times 10^9$    | $1.11 \times 10^6$ | $3.70 \times 10^3$ | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $3.70 \times 10^9$    | $1.48 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
| 43 | Tecnecio-93m <sup>2</sup>  | D, todos los compuestos excepto los señalados en W | $2.59 \times 10^9$                 | $7.40 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$ | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                            | W, óxidos, hidróxidos, haluros, y nitratos         | -                                  | $1.11 \times 10^{10}$ | $3.70 \times 10^6$ | $1.48 \times 10^4$ | -                  | -                  |
| 43 | Tecnecio-94                | D, ver $^{93m}\text{Tc}$                           | $3.33 \times 10^8$                 | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^8$    | $3.70 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
| 43 | Tecnecio-94m <sup>2</sup>  | D, ver $^{93m}\text{Tc}$                           | $7.40 \times 10^8$                 | $1.48 \times 10^9$    | $7.40 \times 10^5$ | $2.22 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $2.22 \times 10^9$    | $7.40 \times 10^5$ | $2.96 \times 10^3$ | -                  | -                  |
| 43 | Tecnecio-95                | D, ver $^{93m}\text{Tc}$                           | $3.70 \times 10^8$                 | $7.40 \times 10^8$    | $3.33 \times 10^5$ | $1.11 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^8$    | $2.96 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
| 43 | Tecnecio-95m               | D, ver $^{93m}\text{Tc}$                           | $1.48 \times 10^8$                 | $1.85 \times 10^8$    | $7.40 \times 10^4$ | $2.96 \times 10^2$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^7$    | $2.96 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 43 | Tecnecio-96                | D, ver $^{93m}\text{Tc}$                           | $7.40 \times 10^7$                 | $1.11 \times 10^8$    | $3.70 \times 10^4$ | $1.85 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^7$    | $3.33 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 43 | Tecnecio-96m <sup>2</sup>  | D, ver $^{93m}\text{Tc}$                           | $7.40 \times 10^9$                 | $1.11 \times 10^{10}$ | $3.70 \times 10^6$ | $1.48 \times 10^4$ | $7.40 \times 10^7$ | $7.40 \times 10^8$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |
| 43 | Tecnecio-97                | D, ver $^{93m}\text{Tc}$                           | $1.48 \times 10^9$                 | $1.85 \times 10^9$    | $7.40 \times 10^5$ | $2.59 \times 10^3$ | $1.85 \times 10^7$ | $1.85 \times 10^8$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $2.22 \times 10^8$    | $7.40 \times 10^4$ | $2.96 \times 10^2$ | -                  | -                  |
| 43 | Tecnecio-97m               | D, ver $^{93m}\text{Tc}$                           | $1.85 \times 10^8$<br>Pared Estom. | $2.59 \times 10^8$    | $1.11 \times 10^5$ | -                  | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                            |                                                    | -                                  | $(2.59 \times 10^8)$  | -                  | $3.70 \times 10^2$ | -                  | -                  |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $3.70 \times 10^7$    | $1.85 \times 10^4$ | $7.40 \times 10^1$ | -                  | -                  |
| 43 | Tecnecio-98                | D, ver $^{93m}\text{Tc}$                           | $3.70 \times 10^7$                 | $7.40 \times 10^7$    | $2.59 \times 10^4$ | $7.40 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $1.11 \times 10^7$    | $3.70 \times 10^3$ | $1.48 \times 10^1$ | -                  | -                  |
| 43 | Tecnecio-99                | D, ver $^{93m}\text{Tc}$                           | $1.48 \times 10^8$<br>Pared Estom. | $1.85 \times 10^8$    | $7.40 \times 10^4$ | -                  | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
|    |                            |                                                    | -                                  | $(2.22 \times 10^8)$  | -                  | $2.96 \times 10^2$ | -                  | -                  |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $2.59 \times 10^7$    | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
| 43 | Tecnecio-99m               | D, ver $^{93m}\text{Tc}$                           | $2.96 \times 10^9$                 | $7.40 \times 10^9$    | $2.22 \times 10^6$ | $7.40 \times 10^3$ | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                            | W, ver $^{93m}\text{Tc}$                           | -                                  | $7.40 \times 10^9$    | $3.70 \times 10^6$ | $1.11 \times 10^4$ | -                  | -                  |

|    |                           |                                                    |                                      |                                   |                      |                      |                      |                      |
|----|---------------------------|----------------------------------------------------|--------------------------------------|-----------------------------------|----------------------|----------------------|----------------------|----------------------|
| 43 | Tecnecio-101 <sup>2</sup> | D, ver <sup>93m</sup> Tc                           | 3.33x10 <sup>9</sup><br>Pared Estom. | 1.11x10 <sup>10</sup>             | 3.70x10 <sup>6</sup> | 1.85x10 <sup>4</sup> | -                    | -                    |
|    |                           |                                                    | (3.70x10 <sup>9</sup> )              | -                                 | -                    | -                    | 7.40x10 <sup>7</sup> | 7.40x10 <sup>8</sup> |
|    |                           | W, ver <sup>93m</sup> Tc                           | -                                    | 1.48x10 <sup>10</sup>             | 7.40x10 <sup>6</sup> | 1.85x10 <sup>4</sup> | -                    | -                    |
| 43 | Tecnecio-104 <sup>2</sup> | D, ver <sup>93m</sup> Tc                           | 7.40x10 <sup>8</sup><br>Pared Estom. | 2.59x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup> | -                    | -                    |
|    |                           |                                                    | (1.11x10 <sup>9</sup> )              | -                                 | -                    | -                    | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
|    |                           | W, ver <sup>93m</sup> Tc                           | -                                    | 3.33x10 <sup>9</sup>              | 1.48x10 <sup>6</sup> | 3.70x10 <sup>3</sup> | -                    | -                    |
| 52 | Telurio-116               | D, todos los compuestos excepto los señalados en W | 2.96x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 3.33x10 <sup>5</sup> | 1.11x10 <sup>3</sup> | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                           | W, óxidos, hidróxidos, y nitratos                  | -                                    | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup> | 1.48x10 <sup>3</sup> | -                    | -                    |
| 52 | Telurio-121               | D, ver <sup>116</sup> Te                           | 1.11x10 <sup>8</sup>                 | 1.48x10 <sup>8</sup>              | 7.40x10 <sup>4</sup> | 2.22x10 <sup>2</sup> | 1.48x10 <sup>6</sup> | 1.48x10 <sup>7</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.11x10 <sup>8</sup>              | 3.70x10 <sup>4</sup> | 1.48x10 <sup>2</sup> | -                    | -                    |
| 52 | Telurio-121m              | D, ver <sup>116</sup> Te                           | 1.85x10 <sup>7</sup><br>Sup. ósea    | 7.40x10 <sup>6</sup><br>Sup. ósea | 2.96x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (2.59x10 <sup>7</sup> )              | (1.48x10 <sup>7</sup> )           | -                    | 1.85x10 <sup>1</sup> | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.48x10 <sup>7</sup>              | 7.40x10 <sup>3</sup> | 2.22x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-123               | D, ver <sup>116</sup> Te                           | 1.85x10 <sup>7</sup><br>Sup. ósea    | 7.40x10 <sup>6</sup><br>Sup. ósea | 2.96x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (3.70x10 <sup>7</sup> )              | (1.85x10 <sup>7</sup> )           | -                    | 2.59x10 <sup>1</sup> | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.48x10 <sup>7</sup><br>Sup. ósea | 7.40x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | -                                    | (3.70x10 <sup>7</sup> )           | -                    | 7.40x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-123m              | D, ver <sup>116</sup> Te                           | 2.22x10 <sup>7</sup><br>Sup. ósea    | 7.40x10 <sup>6</sup><br>Sup. ósea | 3.33x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (3.70x10 <sup>7</sup> )              | (1.85x10 <sup>7</sup> )           | -                    | 2.96x10 <sup>1</sup> | 3.70x10 <sup>5</sup> | 3.70x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.85x10 <sup>7</sup>              | 7.40x10 <sup>3</sup> | 2.96x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-125m              | D, ver <sup>116</sup> Te                           | 3.70x10 <sup>7</sup><br>Sup. ósea    | 1.48x10 <sup>7</sup><br>Sup. ósea | 7.40x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (3.70x10 <sup>7</sup> )              | (3.70x10 <sup>7</sup> )           | -                    | 3.70x10 <sup>1</sup> | 7.40x10 <sup>5</sup> | 7.40x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 2.59x10 <sup>7</sup>              | 1.11x10 <sup>4</sup> | 3.70x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-127               | D, ver <sup>116</sup> Te                           | 2.59x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 3.33x10 <sup>5</sup> | 1.11x10 <sup>3</sup> | 3.70x10 <sup>6</sup> | 3.70x10 <sup>7</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 7.40x10 <sup>8</sup>              | 2.59x10 <sup>5</sup> | 7.40x10 <sup>2</sup> | -                    | -                    |
| 52 | Telurio-127m              | D, ver <sup>116</sup> Te                           | 2.22x10 <sup>7</sup>                 | 1.11x10 <sup>7</sup><br>Sup. ósea | 3.70x10 <sup>3</sup> | -                    | 3.33x10 <sup>5</sup> | 3.33x10 <sup>6</sup> |
|    |                           |                                                    | -                                    | (1.48x10 <sup>7</sup> )           | -                    | 2.22x10 <sup>1</sup> | -                    | -                    |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.11x10 <sup>7</sup>              | 3.70x10 <sup>3</sup> | 1.48x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-129 <sup>2</sup>  | D, ver <sup>116</sup> Te                           | 1.11x10 <sup>9</sup>                 | 2.22x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.33x10 <sup>3</sup> | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 2.59x10 <sup>9</sup>              | 1.11x10 <sup>6</sup> | 3.70x10 <sup>3</sup> | -                    | -                    |
| 52 | Telurio-129m              | D, ver <sup>116</sup> Te                           | 1.85x10 <sup>7</sup>                 | 2.22x10 <sup>7</sup>              | 1.11x10 <sup>4</sup> | 3.33x10 <sup>1</sup> | 2.59x10 <sup>5</sup> | 2.59x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 7.40x10 <sup>6</sup>              | 3.70x10 <sup>3</sup> | 1.11x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-131 <sup>2</sup>  | D, ver <sup>116</sup> Te                           | 1.11x10 <sup>8</sup><br>Tiroide      | 1.85x10 <sup>8</sup><br>Tiroide   | 7.40x10 <sup>4</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (2.22x10 <sup>8</sup> )              | (3.70x10 <sup>8</sup> )           | -                    | 7.40x10 <sup>2</sup> | 2.96x10 <sup>6</sup> | 2.96x10 <sup>7</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 1.85x10 <sup>8</sup><br>Tiroide   | 7.40x10 <sup>4</sup> | -                    | -                    | -                    |
|    |                           |                                                    | -                                    | (3.70x10 <sup>8</sup> )           | -                    | 7.40x10 <sup>2</sup> | -                    | -                    |
| 52 | Telurio-132               | D, ver <sup>116</sup> Te                           | 7.40x10 <sup>6</sup><br>Tiroide      | 7.40x10 <sup>6</sup><br>Tiroide   | 3.33x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (2.59x10 <sup>7</sup> )              | (2.96x10 <sup>7</sup> )           | -                    | 3.70x10 <sup>1</sup> | 3.33x10 <sup>5</sup> | 3.33x10 <sup>6</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 7.40x10 <sup>6</sup><br>Tiroide   | 3.33x10 <sup>3</sup> | -                    | -                    | -                    |
|    |                           |                                                    | -                                    | (2.22x10 <sup>7</sup> )           | -                    | 3.33x10 <sup>1</sup> | -                    | -                    |
| 52 | Telurio-133 <sup>2</sup>  | D, ver <sup>116</sup> Te                           | 3.70x10 <sup>8</sup><br>Tiroide      | 7.40x10 <sup>8</sup><br>Tiroide   | 3.33x10 <sup>5</sup> | -                    | -                    | -                    |
|    |                           |                                                    | (1.11x10 <sup>9</sup> )              | (2.22x10 <sup>9</sup> )           | -                    | 2.96x10 <sup>3</sup> | 1.48x10 <sup>7</sup> | 1.48x10 <sup>8</sup> |
|    |                           | W, ver <sup>116</sup> Te                           | -                                    | 7.40x10 <sup>8</sup><br>Tiroide   | 3.33x10 <sup>5</sup> | -                    | -                    | -                    |
|    |                           |                                                    | -                                    | (2.22x10 <sup>9</sup> )           | -                    | 2.96x10 <sup>3</sup> | -                    | -                    |

|    |                           |                                                           |                                      |                                   |                       |                       |                       |                       |
|----|---------------------------|-----------------------------------------------------------|--------------------------------------|-----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 52 | Telurio-133m <sup>2</sup> | D, ver <sup>116</sup> Te                                  | 1.11x10 <sup>8</sup><br>Tiroide      | 1.85x10 <sup>8</sup><br>Tiroide   | 7.40x10 <sup>4</sup>  | -                     | -                     | -                     |
|    |                           |                                                           | (2.22x10 <sup>8</sup> )              | 3.70x10 <sup>8</sup>              | -                     | 7.40x10 <sup>2</sup>  | 3.33x10 <sup>6</sup>  | 3.33x10 <sup>7</sup>  |
|    |                           | W, ver <sup>116</sup> Te                                  | -                                    | 1.85x10 <sup>8</sup><br>Tiroide   | 7.40x10 <sup>4</sup>  | -                     | -                     | -                     |
|    |                           |                                                           | -                                    | (3.70x10 <sup>8</sup> )           | -                     | 7.40x10 <sup>2</sup>  | -                     | -                     |
| 52 | Telurio-134 <sup>2</sup>  | D, ver <sup>116</sup> Te                                  | 7.40x10 <sup>8</sup><br>Tiroide      | 7.40x10 <sup>8</sup><br>Tiroide   | 3.70x10 <sup>5</sup>  | -                     | -                     | -                     |
|    |                           |                                                           | (7.40x10 <sup>8</sup> )              | (1.85x10 <sup>9</sup> )           | -                     | 2.59x10 <sup>3</sup>  | 1.11x10 <sup>7</sup>  | 1.11x10 <sup>8</sup>  |
|    |                           | W, ver <sup>116</sup> Te                                  | -                                    | 7.40x10 <sup>8</sup><br>Tiroide   | 3.70x10 <sup>5</sup>  | -                     | -                     | -                     |
|    |                           |                                                           | -                                    | (1.85x10 <sup>9</sup> )           | -                     | 2.59x10 <sup>3</sup>  | -                     | -                     |
| 65 | Terbio-147 <sup>2</sup>   | W, todos los compuestos                                   | 3.33x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.85x10 <sup>3</sup>  | 3.70x10 <sup>6</sup>  | 3.70x10 <sup>7</sup>  |
| 65 | Terbio-149                | W, todos los compuestos                                   | 1.85x10 <sup>8</sup>                 | 2.59x10 <sup>7</sup>              | 1.11x10 <sup>4</sup>  | 3.70x10 <sup>1</sup>  | 2.59x10 <sup>5</sup>  | 2.59x10 <sup>7</sup>  |
| 65 | Terbio-150                | W, todos los compuestos                                   | 1.85x10 <sup>8</sup>                 | 7.40x10 <sup>8</sup>              | 3.33x10 <sup>5</sup>  | 1.11x10 <sup>3</sup>  | 2.59x10 <sup>5</sup>  | 2.59x10 <sup>7</sup>  |
| 65 | Terbio-151                | W, todos los compuestos                                   | 1.48x10 <sup>8</sup>                 | 3.33x10 <sup>8</sup>              | 1.48x10 <sup>5</sup>  | 3.70x10 <sup>2</sup>  | 1.85x10 <sup>6</sup>  | 1.85x10 <sup>7</sup>  |
| 65 | Terbio-153                | W, todos los compuestos                                   | 1.85x10 <sup>8</sup>                 | 2.59x10 <sup>8</sup>              | 1.11x10 <sup>5</sup>  | 3.70x10 <sup>2</sup>  | 2.59x10 <sup>6</sup>  | 2.59x10 <sup>7</sup>  |
| 65 | Terbio-154                | W, todos los compuestos                                   | 7.40x10 <sup>7</sup>                 | 1.48x10 <sup>8</sup>              | 7.40x10 <sup>4</sup>  | 2.22x10 <sup>2</sup>  | 7.40x10 <sup>5</sup>  | 7.40x10 <sup>6</sup>  |
| 65 | Terbio-155                | W, todos los compuestos                                   | 2.22x10 <sup>8</sup>                 | 2.96x10 <sup>8</sup>              | 1.11x10 <sup>5</sup>  | 3.70x10 <sup>2</sup>  | 2.96x10 <sup>6</sup>  | 2.96x10 <sup>7</sup>  |
| 65 | Terbio-156                | W, todos los compuestos                                   | 3.70x10 <sup>7</sup>                 | 3.70x10 <sup>7</sup>              | 2.22x10 <sup>4</sup>  | 7.40x10 <sup>1</sup>  | 3.70x10 <sup>5</sup>  | 3.70x10 <sup>6</sup>  |
| 65 | Terbio-156m<br>(5.0h)     | W, todos los compuestos                                   | 7.40x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.48x10 <sup>3</sup>  | 7.40x10 <sup>6</sup>  | 7.40x10 <sup>7</sup>  |
| 65 | Terbio-156m<br>(24.4h)    | W, todos los compuestos                                   | 2.59x10 <sup>8</sup>                 | 2.96x10 <sup>8</sup>              | 1.11x10 <sup>5</sup>  | 3.70x10 <sup>2</sup>  | 3.70x10 <sup>6</sup>  | 3.70x10 <sup>7</sup>  |
| 65 | Terbio-157                | W, todos los compuestos                                   | 1.85x10 <sup>9</sup><br>Pared IGI    | 1.11x10 <sup>7</sup><br>Sup. ósea | 3.70x10 <sup>3</sup>  | -                     | -                     | -                     |
|    |                           |                                                           | (1.85x10 <sup>9</sup> )              | (2.22x10 <sup>7</sup> )           | -                     | 2.96x10 <sup>1</sup>  | 2.59x10 <sup>7</sup>  | 2.59x10 <sup>8</sup>  |
| 65 | Terbio-158                | W, todos los compuestos                                   | 3.70x10 <sup>7</sup>                 | 7.40x10 <sup>5</sup>              | 2.96x10 <sup>2</sup>  | 1.11                  | 7.40x10 <sup>5</sup>  | 7.40x10 <sup>6</sup>  |
| 65 | Terbio-160                | W, todos los compuestos                                   | 2.96x10 <sup>7</sup>                 | 7.40x10 <sup>6</sup>              | 3.33x10 <sup>3</sup>  | 1.11x10 <sup>1</sup>  | 3.70x10 <sup>5</sup>  | 3.70x10 <sup>6</sup>  |
| 65 | Terbio-161                | W, todos los compuestos                                   | 7.40x10 <sup>7</sup><br>Pared IGI    | 7.40x10 <sup>7</sup>              | 2.59x10 <sup>4</sup>  | 7.40x10 <sup>1</sup>  | -                     | -                     |
|    |                           |                                                           | (7.40x10 <sup>7</sup> )              | -                                 | -                     | -                     | 1.11x10 <sup>6</sup>  | 1.11x10 <sup>7</sup>  |
| 22 | Titanio-44                | D, todos los compuestos<br>excepto los señalados en W y Y | 1.11x10 <sup>7</sup>                 | 3.70x10 <sup>5</sup>              | 1.85x10 <sup>2</sup>  | 7.40x10 <sup>-1</sup> | 1.48x10 <sup>5</sup>  | 1.48x10 <sup>6</sup>  |
|    |                           | W, óxidos, hidróxidos,<br>carburos, haluros, y nitratos   | -                                    | 1.11x10 <sup>6</sup>              | 3.70x10 <sup>2</sup>  | 1.48                  | -                     | -                     |
|    |                           | Y, SrTiO <sub>3</sub>                                     | -                                    | 2.22x10 <sup>5</sup>              | 7.40x10 <sup>1</sup>  | 2.96x10 <sup>-1</sup> | -                     | -                     |
| 22 | Titanio-45                | D, ver <sup>44</sup> Ti                                   | 3.33x10 <sup>8</sup>                 | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.11x10 <sup>3</sup>  | 3.70x10 <sup>6</sup>  | 3.70x10 <sup>7</sup>  |
|    |                           | W, ver <sup>44</sup> Ti                                   | -                                    | 1.48x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.85x10 <sup>3</sup>  | -                     | -                     |
|    |                           | Y, ver <sup>44</sup> Ti                                   | -                                    | 1.11x10 <sup>9</sup>              | 3.70x10 <sup>5</sup>  | 1.48x10 <sup>3</sup>  | -                     | -                     |
| 90 | Torio-226 <sup>2</sup>    | W, todos los compuestos,<br>excepto los señalados en Y    | 1.85x10 <sup>8</sup><br>Pared Estom. | 7.40x10 <sup>6</sup>              | 2.22x10 <sup>3</sup>  | 7.40                  | -                     | -                     |
|    |                           | Y, óxidos e hidróxidos                                    | (1.85x10 <sup>8</sup> )              | -                                 | -                     | -                     | 2.59x10 <sup>6</sup>  | 2.59x10 <sup>7</sup>  |
|    |                           |                                                           | -                                    | 3.70x10 <sup>6</sup>              | 2.22x10 <sup>3</sup>  | 7.40                  | -                     | -                     |
| 90 | Torio-227                 | W, ver <sup>226</sup> Th                                  | 3.70x10 <sup>6</sup>                 | 1.11x10 <sup>4</sup>              | 3.70                  | 1.85x10 <sup>-2</sup> | 7.40x10 <sup>4</sup>  | 7.40x10 <sup>5</sup>  |
|    |                           | Y, ver <sup>226</sup> Th                                  | -                                    | 1.11x10 <sup>4</sup>              | 3.70                  | 1.85x10 <sup>-2</sup> | -                     | -                     |
| 90 | Torio-228                 | W, ver <sup>226</sup> Th                                  | 2.22x10 <sup>5</sup><br>Sup. ósea    | 3.70x10 <sup>2</sup><br>Sup. ósea | 1.48x10 <sup>-1</sup> | -                     | -                     | -                     |
|    |                           |                                                           | (3.70x10 <sup>5</sup> )              | (7.40x10 <sup>2</sup> )           | -                     | 1.11x10 <sup>-3</sup> | 7.40x10 <sup>3</sup>  | 7.40x10 <sup>4</sup>  |
|    |                           | Y, ver <sup>226</sup> Th                                  | -                                    | 7.40x10 <sup>2</sup>              | 2.59x10 <sup>-1</sup> | 7.40x10 <sup>-4</sup> | -                     | -                     |
| 90 | Torio-229                 | W, ver <sup>226</sup> Th                                  | 2.22x10 <sup>4</sup><br>Sup. ósea    | 3.33x10 <sup>1</sup><br>Sup. ósea | 1.48x10 <sup>-2</sup> | -                     | -                     | -                     |
|    |                           |                                                           | (3.70x10 <sup>4</sup> )              | (7.40x10 <sup>1</sup> )           | -                     | 1.11x10 <sup>-4</sup> | 7.40x10 <sup>-2</sup> | 7.40x10 <sup>-3</sup> |
|    |                           | Y, ver <sup>226</sup> Th                                  | -                                    | 7.40x10 <sup>1</sup><br>Sup. ósea | 3.70x10 <sup>-2</sup> | -                     | -                     | -                     |
|    |                           |                                                           | -                                    | (1.11x10 <sup>-2</sup> )          | -                     | 1.48x10 <sup>-4</sup> | -                     | -                     |
| 90 | Torio-230                 | W, ver <sup>226</sup> Th                                  | 1.48x10 <sup>5</sup><br>Sup. ósea    | 2.22x10 <sup>2</sup><br>Sup. ósea | 1.11x10 <sup>-1</sup> | -                     | -                     | -                     |
|    |                           |                                                           | (3.33x10 <sup>5</sup> )              | (7.40x10 <sup>2</sup> )           | -                     | 7.40x10 <sup>-4</sup> | 3.70x10 <sup>-3</sup> | 3.70x10 <sup>-4</sup> |
|    |                           | Y, ver <sup>226</sup> Th                                  | -                                    | 7.40x10 <sup>2</sup><br>Sup. ósea | 2.22x10 <sup>-1</sup> | -                     | -                     | -                     |
|    |                           |                                                           | -                                    | (7.40x10 <sup>2</sup> )           | -                     | 1.11x10 <sup>-3</sup> | -                     | -                     |

|    |                            |                                                                                         |                                        |                                     |                       |                       |                    |                    |
|----|----------------------------|-----------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 90 | Torio-231                  | W, ver $^{226}\text{Th}$                                                                | $1.48 \times 10^8$                     | $2.22 \times 10^8$                  | $1.11 \times 10^5$    | $3.33 \times 10^2$    | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                            | Y, ver $^{226}\text{Th}$                                                                | -                                      | $2.22 \times 10^8$                  | $1.11 \times 10^5$    | $3.33 \times 10^2$    | -                  | -                  |
| 90 | Torio-232                  | W, ver $^{226}\text{Th}$                                                                | $2.59 \times 10^4$                     | $3.70 \times 10^1$                  | $1.85 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                            |                                                                                         | Sup. ósea<br>( $7.40 \times 10^4$ )    | Sup. ósea<br>( $1.11 \times 10^2$ ) | -                     | $1.48 \times 10^{-4}$ | $1.11 \times 10^3$ | $1.11 \times 10^4$ |
|    |                            | Y, ver $^{226}\text{Th}$                                                                | -                                      | $1.11 \times 10^2$                  | $3.70 \times 10^{-2}$ | -                     | -                  | -                  |
|    |                            |                                                                                         | -                                      | ( $1.48 \times 10^2$ )              | -                     | $2.22 \times 10^{-4}$ | -                  | -                  |
| 90 | Torio-234                  | W, ver $^{226}\text{Th}$                                                                | $1.11 \times 10^7$                     | $7.40 \times 10^6$                  | $2.96 \times 10^3$    | $1.11 \times 10^1$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $1.48 \times 10^7$ )    | -                                   | -                     | -                     | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
|    |                            | Y, ver $^{226}\text{Th}$                                                                | -                                      | $7.40 \times 10^6$                  | $2.22 \times 10^3$    | 7.40                  | -                  | -                  |
| 69 | Tulio-162 <sup>2</sup>     | W, todos los compuestos                                                                 | $2.59 \times 10^9$                     | $1.11 \times 10^{10}$               | $3.70 \times 10^6$    | $1.48 \times 10^4$    | -                  | -                  |
|    |                            |                                                                                         | Pared Estom.<br>( $2.59 \times 10^9$ ) | -                                   | -                     | -                     | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 69 | Tulio-166                  | W, todos los compuestos                                                                 | $1.48 \times 10^8$                     | $3.70 \times 10^8$                  | $2.22 \times 10^5$    | $7.40 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
| 69 | Tulio-167                  | W, todos los compuestos                                                                 | $7.40 \times 10^7$                     | $7.40 \times 10^7$                  | $2.96 \times 10^4$    | $1.11 \times 10^2$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $7.40 \times 10^7$ )    | -                                   | -                     | -                     | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 69 | Tulio-170                  | W, todos los compuestos                                                                 | $2.96 \times 10^7$                     | $7.40 \times 10^6$                  | $3.33 \times 10^3$    | $1.11 \times 10^1$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $3.70 \times 10^7$ )    | -                                   | -                     | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 69 | Tulio-171                  | W, todos los compuestos                                                                 | $3.70 \times 10^8$                     | $1.11 \times 10^7$                  | $3.70 \times 10^3$    | -                     | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $3.70 \times 10^8$ )    | Sup. ósea<br>( $2.22 \times 10^7$ ) | -                     | $2.96 \times 10^1$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 69 | Tulio-172                  | W, todos los compuestos                                                                 | $2.59 \times 10^7$                     | $3.70 \times 10^7$                  | $1.85 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $2.96 \times 10^7$ )    | -                                   | -                     | -                     | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 69 | Tulio-173                  | W, todos los compuestos                                                                 | $1.48 \times 10^8$                     | $3.70 \times 10^8$                  | $1.85 \times 10^5$    | $7.40 \times 10^2$    | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
| 69 | Tulio-175 <sup>2</sup>     | W, todos los compuestos                                                                 | $2.59 \times 10^9$                     | $1.11 \times 10^{10}$               | $3.70 \times 10^6$    | $1.48 \times 10^4$    | -                  | -                  |
|    |                            |                                                                                         | Pared Estom.<br>( $3.33 \times 10^9$ ) | -                                   | -                     | -                     | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
| 74 | Tungsteno-176              | D, todos los compuestos                                                                 | $3.70 \times 10^8$                     | $1.85 \times 10^9$                  | $7.40 \times 10^5$    | $2.59 \times 10^3$    | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 74 | Tungsteno-177              | D, todos los compuestos                                                                 | $7.40 \times 10^8$                     | $3.33 \times 10^9$                  | $1.48 \times 10^6$    | $3.70 \times 10^3$    | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 74 | Tungsteno-178              | D, todos los compuestos                                                                 | $1.85 \times 10^8$                     | $7.40 \times 10^8$                  | $2.96 \times 10^5$    | $1.11 \times 10^3$    | $2.59 \times 10^6$ | $2.59 \times 10^7$ |
| 74 | Tungsteno-179 <sup>2</sup> | D, todos los compuestos                                                                 | $1.85 \times 10^{10}$                  | $7.40 \times 10^{10}$               | $2.59 \times 10^7$    | $7.40 \times 10^4$    | $2.59 \times 10^8$ | $2.59 \times 10^9$ |
| 74 | Tungsteno-181              | D, todos los compuestos                                                                 | $7.40 \times 10^8$                     | $1.11 \times 10^9$                  | $3.70 \times 10^5$    | $1.85 \times 10^3$    | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 74 | Tungsteno-185              | D, todos los compuestos                                                                 | $7.40 \times 10^7$                     | $2.59 \times 10^8$                  | $1.11 \times 10^5$    | $3.33 \times 10^2$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $1.11 \times 10^8$ )    | -                                   | -                     | -                     | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
| 74 | Tungsteno-187              | D, todos los compuestos                                                                 | $7.40 \times 10^7$                     | $3.33 \times 10^8$                  | $1.48 \times 10^5$    | $3.70 \times 10^2$    | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 74 | Tungsteno-188              | D, todos los compuestos                                                                 | $1.48 \times 10^7$                     | $3.70 \times 10^7$                  | $1.85 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    |                            |                                                                                         | Pared IGI<br>( $1.85 \times 10^7$ )    | -                                   | -                     | -                     | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 92 | Uranio-230                 | D, UF, UO <sub>2</sub> F <sub>2</sub> , UO <sub>2</sub> (NO <sub>3</sub> ) <sub>2</sub> | $1.48 \times 10^5$                     | $1.48 \times 10^4$                  | 7.40                  | -                     | -                  | -                  |
|    |                            |                                                                                         | Sup. ósea<br>( $2.22 \times 10^5$ )    | Sup. ósea<br>( $2.22 \times 10^4$ ) | -                     | $2.96 \times 10^{-2}$ | $2.96 \times 10^3$ | $2.96 \times 10^4$ |
|    |                            | W, UO <sub>3</sub> , UF <sub>4</sub> , UCl <sub>4</sub>                                 | -                                      | $1.48 \times 10^4$                  | 3.70                  | $1.85 \times 10^{-2}$ | -                  | -                  |
| 92 | Uranio-231                 | D, ver $^{230}\text{U}$                                                                 | -                                      | $1.11 \times 10^4$                  | 3.70                  | $1.48 \times 10^{-2}$ | -                  | -                  |
|    |                            |                                                                                         | -                                      | -                                   | -                     | -                     | -                  | -                  |
|    |                            | W, ver $^{230}\text{U}$                                                                 | -                                      | $1.85 \times 10^8$                  | $7.40 \times 10^4$    | $2.22 \times 10^2$    | -                  | -                  |
|    |                            | Y, ver $^{230}\text{U}$                                                                 | -                                      | $1.85 \times 10^8$                  | $7.40 \times 10^4$    | $2.22 \times 10^2$    | -                  | -                  |
| 92 | Uranio-232                 | D, ver $^{230}\text{U}$                                                                 | $7.40 \times 10^4$                     | $7.40 \times 10^3$                  | 3.33                  | -                     | -                  | -                  |
|    |                            |                                                                                         | Sup. ósea<br>( $1.48 \times 10^5$ )    | Sup. ósea<br>( $1.48 \times 10^4$ ) | -                     | $2.22 \times 10^{-2}$ | $2.22 \times 10^3$ | $2.22 \times 10^4$ |
|    |                            | W, ver $^{230}\text{U}$                                                                 | -                                      | $1.48 \times 10^4$                  | 7.40                  | $1.85 \times 10^{-2}$ | -                  | -                  |
|    |                            | Y, ver $^{230}\text{U}$                                                                 | -                                      | $2.96 \times 10^2$                  | $1.11 \times 10^{-1}$ | $3.70 \times 10^{-4}$ | -                  | -                  |

|    |                             |                                                       |                                    |                                 |                       |                       |                    |                    |
|----|-----------------------------|-------------------------------------------------------|------------------------------------|---------------------------------|-----------------------|-----------------------|--------------------|--------------------|
| 92 | Uranio-233                  | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $1.85 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.59 \times 10^4$              | $1.11 \times 10^1$    | $3.70 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.48 \times 10^3$              | $7.40 \times 10^{-1}$ | $1.85 \times 10^{-3}$ | -                  | -                  |
| 92 | Uranio-234 <sup>3</sup>     | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $1.85 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.59 \times 10^4$              | $1.11 \times 10^1$    | $3.70 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.48 \times 10^3$              | $7.40 \times 10^{-1}$ | $1.85 \times 10^{-3}$ | -                  | -                  |
| 92 | Uranio-235 <sup>3</sup>     | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $2.22 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.96 \times 10^4$              | $1.11 \times 10^1$    | $3.70 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.48 \times 10^3$              | $7.40 \times 10^{-1}$ | $2.22 \times 10^{-3}$ | -                  | -                  |
| 92 | Uranio-236                  | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $1.85 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.96 \times 10^4$              | $1.11 \times 10^1$    | $3.70 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.48 \times 10^3$              | $7.40 \times 10^{-1}$ | $2.22 \times 10^{-3}$ | -                  | -                  |
| 92 | Uranio-237                  | D, ver $^{230}\text{U}$                               | $7.40 \times 10^7$<br>Pared IGI    | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^7)$               | -                               | -                     | -                     | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $7.40 \times 10^7$              | $2.59 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $7.40 \times 10^7$              | $2.22 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
| 92 | Uranio-238 <sup>3</sup>     | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $2.22 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.96 \times 10^4$              | $1.11 \times 10^1$    | $3.70 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.48 \times 10^3$              | $7.40 \times 10^{-1}$ | $2.22 \times 10^{-3}$ | -                  | -                  |
| 92 | Uranio-239 <sup>2</sup>     | D, ver $^{230}\text{U}$                               | $2.59 \times 10^9$                 | $7.40 \times 10^9$              | $2.96 \times 10^6$    | $1.11 \times 10^4$    | $3.33 \times 10^7$ | $3.33 \times 10^8$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $7.40 \times 10^9$              | $2.59 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $7.40 \times 10^9$              | $2.22 \times 10^6$    | $7.40 \times 10^3$    | -                  | -                  |
|    |                             |                                                       |                                    |                                 |                       |                       |                    |                    |
| 92 | Uranio-240                  | D, ver $^{230}\text{U}$                               | $3.70 \times 10^7$                 | $1.48 \times 10^8$              | $7.40 \times 10^4$    | $1.85 \times 10^2$    | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $1.11 \times 10^8$              | $3.70 \times 10^4$    | $1.48 \times 10^2$    | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $7.40 \times 10^7$              | $3.70 \times 10^4$    | $1.11 \times 10^2$    | -                  | -                  |
|    |                             |                                                       |                                    |                                 |                       |                       |                    |                    |
| 92 | Uranio-natural <sup>3</sup> | D, ver $^{230}\text{U}$                               | $3.70 \times 10^5$<br>Sup. ósea    | $3.70 \times 10^4$<br>Sup. ósea | $1.85 \times 10^1$    | -                     | -                  | -                  |
|    |                             |                                                       | $(7.40 \times 10^5)$               | $(7.40 \times 10^4)$            | -                     | $1.11 \times 10^{-1}$ | $1.11 \times 10^4$ | $1.11 \times 10^5$ |
|    |                             | W, ver $^{230}\text{U}$                               | -                                  | $2.96 \times 10^4$              | $1.11 \times 10^1$    | $3.33 \times 10^{-2}$ | -                  | -                  |
|    |                             | Y, ver $^{230}\text{U}$                               | -                                  | $1.85 \times 10^3$              | $7.40 \times 10^{-1}$ | $3.33 \times 10^{-3}$ | -                  | -                  |
| 23 | Vanadio-47 <sup>2</sup>     | D, todos los compuestos<br>excepto los señalados en W | $1.11 \times 10^9$<br>Pared Estom. | $2.96 \times 10^9$              | $1.11 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
|    |                             |                                                       | $(1.11 \times 10^9)$               | -                               | -                     | -                     | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                             | W, óxidos, hidróxidos,<br>carburos, y haluros         | -                                  | $3.70 \times 10^9$              | $1.48 \times 10^6$    | $3.70 \times 10^3$    | -                  | -                  |
|    |                             |                                                       |                                    |                                 |                       |                       |                    |                    |
| 23 | Vanadio-48                  | D, ver $^{47}\text{V}$                                | $2.22 \times 10^7$                 | $3.70 \times 10^7$              | $1.85 \times 10^4$    | $7.40 \times 10^1$    | $3.33 \times 10^5$ | $3.33 \times 10^6$ |
|    |                             | W, ver $^{47}\text{V}$                                | -                                  | $2.22 \times 10^7$              | $1.11 \times 10^4$    | $3.33 \times 10^1$    | -                  | -                  |
| 23 | Vanadio-49                  | D, ver $^{47}\text{V}$                                | $2.59 \times 10^9$<br>Pared IGI    | $1.11 \times 10^9$<br>Sup. ósea | $3.70 \times 10^5$    | -                     | -                  | -                  |
|    |                             |                                                       | $(3.33 \times 10^9)$               | $(1.11 \times 10^9)$            | -                     | $1.85 \times 10^3$    | $3.70 \times 10^7$ | $3.70 \times 10^8$ |
|    |                             | W, ver $^{47}\text{V}$                                | -                                  | $7.40 \times 10^8$              | $2.96 \times 10^5$    | $7.40 \times 10^2$    | -                  | -                  |
|    |                             |                                                       |                                    |                                 |                       |                       |                    |                    |
| 54 | Xenón-120 <sup>2</sup>      | Sumersión <sup>1</sup>                                | -                                  | -                               | $3.70 \times 10^5$    | $1.48 \times 10^3$    | -                  | -                  |
| 54 | Xenón-121 <sup>2</sup>      | Sumersión <sup>1</sup>                                | -                                  | -                               | $7.40 \times 10^4$    | $3.70 \times 10^2$    | -                  | -                  |
| 54 | Xenón-122                   | Sumersión <sup>1</sup>                                | -                                  | -                               | $2.59 \times 10^6$    | $1.11 \times 10^4$    | -                  | -                  |
| 54 | Xenón-123                   | Sumersión <sup>1</sup>                                | -                                  | -                               | $2.22 \times 10^5$    | $1.11 \times 10^3$    | -                  | -                  |
| 54 | Xenón-125                   | Sumersión <sup>1</sup>                                | -                                  | -                               | $7.40 \times 10^5$    | $2.59 \times 10^3$    | -                  | -                  |
| 54 | Xenón-127                   | Sumersión <sup>1</sup>                                | -                                  | -                               | $3.70 \times 10^5$    | $2.22 \times 10^3$    | -                  | -                  |
| 54 | Xenón-129m                  | Sumersión <sup>1</sup>                                | -                                  | -                               | $7.40 \times 10^5$    | $3.33 \times 10^4$    | -                  | -                  |
| 54 | Xenón-131m                  | Sumersión <sup>1</sup>                                | -                                  | -                               | $1.48 \times 10^7$    | $7.40 \times 10^4$    | -                  | -                  |

|    |                         |                                                     |                                    |                               |                    |                    |                    |                    |
|----|-------------------------|-----------------------------------------------------|------------------------------------|-------------------------------|--------------------|--------------------|--------------------|--------------------|
| 54 | Xenón-133               | Sumersión <sup>1</sup>                              | -                                  | -                             | $3.70 \times 10^6$ | $1.85 \times 10^4$ | -                  | -                  |
| 54 | Xenón-133m              | Sumersión <sup>1</sup>                              | -                                  | -                             | $3.70 \times 10^6$ | $2.22 \times 10^4$ | -                  | -                  |
| 54 | Xenón-135               | Sumersión <sup>1</sup>                              | -                                  | -                             | $3.70 \times 10^5$ | $2.59 \times 10^3$ | -                  | -                  |
| 54 | Xenón-135m <sup>2</sup> | Sumersión <sup>1</sup>                              | -                                  | -                             | $3.33 \times 10^5$ | $1.48 \times 10^3$ | -                  | -                  |
| 54 | Xenón-138 <sup>2</sup>  | Sumersión <sup>1</sup>                              | -                                  | -                             | $1.48 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 53 | Yodo-120 <sup>2</sup>   | D, todos los compuestos                             | $1.48 \times 10^8$<br>Tiroide      | $3.33 \times 10^8$<br>Tiroide | $1.48 \times 10^5$ | -                  | -                  | -                  |
|    |                         |                                                     | $(2.96 \times 10^8)$               | $(3.70 \times 10^8)$          | -                  | $7.40 \times 10^2$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 53 | Yodo-120m <sup>2</sup>  | D, todos los compuestos                             | $3.70 \times 10^8$<br>Tiroide      | $7.40 \times 10^8$<br>Tiroide | $3.33 \times 10^5$ | $1.11 \times 10^3$ | -                  | -                  |
|    |                         |                                                     | $(3.70 \times 10^8)$               | -                             | -                  | -                  | $7.40 \times 10^6$ | $7.40 \times 10^7$ |
| 53 | Yodo-121                | D, todos los compuestos                             | $3.70 \times 10^8$<br>Tiroide      | $7.40 \times 10^8$<br>Tiroide | $2.96 \times 10^5$ | -                  | -                  | -                  |
|    |                         |                                                     | $(1.11 \times 10^9)$               | $(1.85 \times 10^9)$          | -                  | $2.59 \times 10^3$ | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 53 | Yodo-123                | D, todos los compuestos                             | $1.11 \times 10^8$<br>Tiroide      | $2.22 \times 10^8$<br>Tiroide | $1.11 \times 10^5$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.70 \times 10^8)$               | $(7.40 \times 10^8)$          | -                  | $7.40 \times 10^2$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 53 | Yodo-124                | D, todos los compuestos                             | $1.85 \times 10^6$<br>Tiroide      | $2.96 \times 10^6$<br>Tiroide | $1.11 \times 10^3$ | -                  | -                  | -                  |
|    |                         |                                                     | $(7.40 \times 10^6)$               | $(1.11 \times 10^7)$          | -                  | $1.48 \times 10^1$ | $7.40 \times 10^4$ | $7.40 \times 10^5$ |
| 53 | Yodo-125                | D, todos los compuestos                             | $1.48 \times 10^6$<br>Tiroide      | $2.22 \times 10^6$<br>Tiroide | $1.11 \times 10^3$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.70 \times 10^6)$               | $(7.40 \times 10^6)$          | -                  | $1.11 \times 10^1$ | $7.40 \times 10^4$ | $7.40 \times 10^5$ |
| 53 | Yodo-126                | D, todos los compuestos                             | $7.40 \times 10^5$<br>Tiroide      | $1.48 \times 10^6$<br>Tiroide | $3.70 \times 10^2$ | -                  | -                  | -                  |
|    |                         |                                                     | $(2.59 \times 10^6)$               | $(3.70 \times 10^6)$          | -                  | 7.40               | $3.70 \times 10^4$ | $3.70 \times 10^5$ |
| 53 | Yodo-128 <sup>2</sup>   | D, todos los compuestos                             | $1.48 \times 10^9$<br>Pared Estom. | $3.70 \times 10^9$            | $1.85 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                         |                                                     | $(2.22 \times 10^9)$               | -                             | -                  | -                  | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
| 53 | Yodo-129                | D, todos los compuestos                             | $1.85 \times 10^5$<br>Tiroide      | $3.33 \times 10^5$<br>Tiroide | $1.48 \times 10^2$ | -                  | -                  | -                  |
|    |                         |                                                     | $(7.40 \times 10^5)$               | $(1.11 \times 10^6)$          | -                  | 1.48               | $7.40 \times 10^3$ | $7.40 \times 10^4$ |
| 53 | Yodo-130                | D, todos los compuestos                             | $1.48 \times 10^7$<br>Tiroide      | $2.59 \times 10^7$<br>Tiroide | $1.11 \times 10^4$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.70 \times 10^7)$               | $(7.40 \times 10^7)$          | -                  | $1.11 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 53 | Yodo-131                | D, todos los compuestos                             | $1.11 \times 10^6$<br>Tiroide      | $1.85 \times 10^6$<br>Tiroide | $7.40 \times 10^2$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.33 \times 10^6)$               | $(7.40 \times 10^6)$          | -                  | 7.40               | $3.70 \times 10^4$ | $3.70 \times 10^5$ |
| 53 | Yodo-132                | D, todos los compuestos                             | $1.48 \times 10^8$<br>Tiroide      | $2.96 \times 10^8$<br>Tiroide | $1.11 \times 10^5$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.33 \times 10^8)$               | $(3.70 \times 10^8)$          | -                  | $7.40 \times 10^2$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 53 | Yodo-132m <sup>2</sup>  | D, todos los compuestos                             | $1.48 \times 10^8$<br>Tiroide      | $2.96 \times 10^8$<br>Tiroide | $1.48 \times 10^5$ | -                  | -                  | -                  |
|    |                         |                                                     | $(3.70 \times 10^8)$               | $(7.40 \times 10^8)$          | -                  | $1.11 \times 10^3$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
| 53 | Yodo-133                | D, todos los compuestos                             | $3.70 \times 10^6$<br>Tiroide      | $1.11 \times 10^7$<br>Tiroide | $3.70 \times 10^3$ | -                  | -                  | -                  |
|    |                         |                                                     | $(1.85 \times 10^7)$               | $(3.33 \times 10^7)$          | -                  | $3.70 \times 10^1$ | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
| 53 | Yodo-134 <sup>2</sup>   | D, todos los compuestos                             | $7.40 \times 10^8$<br>Tiroide      | $1.85 \times 10^9$<br>Tiroide | $7.40 \times 10^5$ | $2.22 \times 10^3$ | -                  | -                  |
|    |                         |                                                     | $(1.11 \times 10^9)$               | -                             | -                  | -                  | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
| 53 | Yodo-135                | D, todos los compuestos                             | $2.96 \times 10^7$<br>Tiroide      | $7.40 \times 10^7$<br>Tiroide | $2.59 \times 10^4$ | -                  | -                  | -                  |
|    |                         |                                                     | $(1.11 \times 10^8)$               | $(1.48 \times 10^8)$          | -                  | $2.22 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
| 39 | Ytrio-86                | W, ver <sup>86m</sup> Y                             | $3.70 \times 10^7$                 | $1.11 \times 10^8$            | $3.70 \times 10^4$ | $1.85 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                         | Y, ver <sup>86m</sup> Y                             | -                                  | $1.11 \times 10^8$            | $3.70 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |
| 39 | Ytrio-86m <sup>2</sup>  | W, todos los compuestos, excepto los señalados en Y | $7.40 \times 10^8$                 | $2.22 \times 10^9$            | $7.40 \times 10^5$ | $2.96 \times 10^3$ | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
|    |                         | Y, óxidos e hidróxidos                              | -                                  | $1.85 \times 10^9$            | $7.40 \times 10^5$ | $2.96 \times 10^3$ | -                  | -                  |
| 39 | Ytrio-87                | W, ver <sup>86m</sup> Y                             | $7.40 \times 10^7$                 | $1.11 \times 10^8$            | $3.70 \times 10^4$ | $1.85 \times 10^2$ | $1.11 \times 10^6$ | $1.11 \times 10^7$ |
|    |                         | Y, ver <sup>86m</sup> Y                             | -                                  | $1.11 \times 10^8$            | $3.70 \times 10^4$ | $1.85 \times 10^2$ | -                  | -                  |

|    |                        |                                                        |                                    |                                 |                    |                    |                    |                    |
|----|------------------------|--------------------------------------------------------|------------------------------------|---------------------------------|--------------------|--------------------|--------------------|--------------------|
| 39 | Ytrio-88               | W, ver $^{86m}\text{Y}$                                | $3.70 \times 10^7$                 | $1.11 \times 10^7$              | $3.70 \times 10^3$ | $1.11 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $7.40 \times 10^6$              | $3.70 \times 10^3$ | $1.11 \times 10^1$ | -                  | -                  |
| 39 | Ytrio-90               | W, ver $^{86m}\text{Y}$                                | $1.48 \times 10^7$<br>Pared IGI    | $2.59 \times 10^7$              | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
|    |                        |                                                        | $(1.85 \times 10^7)$               | -                               | -                  | -                  | $2.59 \times 10^5$ | $2.59 \times 10^6$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $2.22 \times 10^7$              | $1.11 \times 10^4$ | $3.33 \times 10^1$ | -                  | -                  |
| 39 | Ytrio-90m              | W, ver $^{86m}\text{Y}$                                | $2.96 \times 10^8$                 | $3.70 \times 10^8$              | $1.85 \times 10^5$ | $7.40 \times 10^2$ | $3.70 \times 10^6$ | $3.70 \times 10^7$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $3.70 \times 10^8$              | $1.85 \times 10^5$ | $7.40 \times 10^2$ | -                  | -                  |
| 39 | Ytrio-91               | W, ver $^{86m}\text{Y}$                                | $1.85 \times 10^7$<br>Pared IGI    | $7.40 \times 10^6$              | $2.59 \times 10^3$ | 7.40               | -                  | -                  |
|    |                        |                                                        | $(2.22 \times 10^7)$               | -                               | -                  | -                  | $2.96 \times 10^5$ | $2.96 \times 10^6$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $3.70 \times 10^6$              | $1.85 \times 10^3$ | 7.40               | -                  | -                  |
| 39 | Ytrio-91m <sup>2</sup> | W, ver $^{86m}\text{Y}$                                | $3.70 \times 10^9$                 | $7.40 \times 10^9$              | $3.70 \times 10^6$ | $1.11 \times 10^4$ | $7.40 \times 10^7$ | $7.40 \times 10^8$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $7.40 \times 10^9$              | $2.59 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 39 | Ytrio-92               | W, ver $^{86m}\text{Y}$                                | $1.11 \times 10^8$                 | $3.33 \times 10^8$              | $1.48 \times 10^5$ | $3.70 \times 10^2$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $2.96 \times 10^8$              | $1.11 \times 10^5$ | $3.70 \times 10^2$ | -                  | -                  |
| 39 | Ytrio-93               | W, ver $^{86m}\text{Y}$                                | $3.70 \times 10^7$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$ | $1.48 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $7.40 \times 10^7$              | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 39 | Ytrio-94 <sup>2</sup>  | W, ver $^{86m}\text{Y}$                                | $7.40 \times 10^8$<br>Pared Estom. | $2.96 \times 10^9$              | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
|    |                        |                                                        | $(1.11 \times 10^9)$               | -                               | -                  | -                  | $1.48 \times 10^7$ | $1.48 \times 10^8$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $2.96 \times 10^9$              | $1.11 \times 10^6$ | $3.70 \times 10^3$ | -                  | -                  |
| 39 | Ytrio-95 <sup>2</sup>  | W, ver $^{86m}\text{Y}$                                | $1.48 \times 10^9$<br>Pared Estom. | $7.40 \times 10^9$              | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
|    |                        |                                                        | $(1.85 \times 10^9)$               | -                               | -                  | -                  | $2.59 \times 10^7$ | $2.59 \times 10^8$ |
|    |                        | Y, ver $^{86m}\text{Y}$                                | -                                  | $3.70 \times 10^9$              | $2.22 \times 10^6$ | $7.40 \times 10^3$ | -                  | -                  |
| 30 | Zinc-62                | Y, todos los compuestos                                | $3.70 \times 10^7$                 | $1.11 \times 10^8$              | $3.70 \times 10^4$ | $1.48 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
| 30 | Zinc-63 <sup>2</sup>   | Y, todos los compuestos                                | $7.40 \times 10^8$<br>Pared Estom. | $2.59 \times 10^9$              | $1.11 \times 10^6$ | $3.33 \times 10^3$ | -                  | -                  |
|    |                        |                                                        | $(1.11 \times 10^9)$               | -                               | -                  | -                  | $1.11 \times 10^7$ | $1.11 \times 10^8$ |
| 30 | Zinc-65                | Y, todos los compuestos                                | $1.48 \times 10^7$                 | $1.11 \times 10^7$              | $3.70 \times 10^3$ | $1.48 \times 10^1$ | $1.85 \times 10^5$ | $1.85 \times 10^6$ |
| 30 | Zinc-69 <sup>2</sup>   | Y, todos los compuestos                                | $2.22 \times 10^9$                 | $3.70 \times 10^9$              | $2.22 \times 10^6$ | $7.40 \times 10^3$ | $2.96 \times 10^7$ | $2.96 \times 10^8$ |
| 30 | Zinc-69m               | Y, todos los compuestos                                | $1.48 \times 10^8$                 | $2.59 \times 10^8$              | $1.11 \times 10^5$ | $3.70 \times 10^2$ | $2.22 \times 10^6$ | $2.22 \times 10^7$ |
| 30 | Zinc-71m               | Y, todos los compuestos                                | $2.22 \times 10^8$                 | $7.40 \times 10^8$              | $2.59 \times 10^5$ | $7.40 \times 10^2$ | $2.96 \times 10^6$ | $2.96 \times 10^7$ |
| 30 | Zinc-72                | Y, todos los compuestos                                | $3.70 \times 10^7$                 | $3.70 \times 10^7$              | $1.85 \times 10^4$ | $7.40 \times 10^1$ | $3.70 \times 10^5$ | $3.70 \times 10^6$ |
| 40 | Zirconio-86            | D, todos los compuestos excepto los señalados en W y Y | $3.70 \times 10^7$                 | $1.48 \times 10^8$              | $7.40 \times 10^4$ | $2.22 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | W, óxidos, hidróxidos, haluros, y nitratos             | -                                  | $1.11 \times 10^8$              | $3.70 \times 10^4$ | $1.48 \times 10^2$ | -                  | -                  |
|    |                        | Y, carburos                                            | -                                  | $7.40 \times 10^7$              | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 40 | Zirconio-88            | D, ver $^{86}\text{Zr}$                                | $1.48 \times 10^8$                 | $7.40 \times 10^6$              | $3.33 \times 10^3$ | $1.11 \times 10^1$ | $1.85 \times 10^6$ | $1.85 \times 10^7$ |
|    |                        | W, ver $^{86}\text{Zr}$                                | -                                  | $1.85 \times 10^7$              | $7.40 \times 10^3$ | $2.59 \times 10^1$ | -                  | -                  |
|    |                        | Y, ver $^{86}\text{Zr}$                                | -                                  | $1.11 \times 10^7$              | $3.70 \times 10^3$ | $1.48 \times 10^1$ | -                  | -                  |
| 40 | Zirconio-89            | D, ver $^{86}\text{Zr}$                                | $7.40 \times 10^7$                 | $1.48 \times 10^8$              | $3.70 \times 10^4$ | $1.85 \times 10^2$ | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        | W, ver $^{86}\text{Zr}$                                | -                                  | $7.40 \times 10^7$              | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
|    |                        | Y, ver $^{86}\text{Zr}$                                | -                                  | $7.40 \times 10^7$              | $3.70 \times 10^4$ | $1.11 \times 10^2$ | -                  | -                  |
| 40 | Zirconio-93            | D, ver $^{86}\text{Zr}$                                | $3.70 \times 10^7$<br>Sup. ósea    | $2.22 \times 10^5$<br>Sup. ósea | $1.11 \times 10^2$ | -                  | -                  | -                  |
|    |                        |                                                        | $(1.11 \times 10^8)$               | $(7.40 \times 10^5)$            | -                  | $7.40 \times 10^1$ | $1.48 \times 10^6$ | $1.48 \times 10^7$ |
|    |                        | W, ver $^{86}\text{Zr}$                                | -                                  | $7.40 \times 10^5$<br>Sup. ósea | $3.70 \times 10^2$ | -                  | -                  | -                  |
|    |                        |                                                        | -                                  | $2.22 \times 10^6$              | -                  | 3.33               | -                  | -                  |
|    |                        | Y, ver $^{86}\text{Zr}$                                | -                                  | $2.22 \times 10^6$<br>Sup. ósea | $7.40 \times 10^2$ | -                  | -                  | -                  |
|    |                        |                                                        | -                                  | $(2.59 \times 10^6)$            | -                  | 3.33               | -                  | -                  |
| 40 | Zirconio-95            | D, ver $^{86}\text{Zr}$                                | $3.70 \times 10^7$                 | $3.70 \times 10^6$<br>Sup. ósea | $1.85 \times 10^3$ | -                  | $7.40 \times 10^5$ | $7.40 \times 10^6$ |
|    |                        |                                                        | -                                  | $(1.11 \times 10^7)$            | -                  | $1.48 \times 10^1$ | -                  | -                  |
|    |                        | W, ver $^{86}\text{Zr}$                                | -                                  | $1.48 \times 10^7$              | $7.40 \times 10^3$ | $1.85 \times 10^1$ | -                  | -                  |
|    |                        | Y, ver $^{86}\text{Zr}$                                | -                                  | $1.11 \times 10^7$              | $3.70 \times 10^3$ | $1.48 \times 10^1$ | -                  | -                  |

|    |                                                                                                                                                                                                                              |                         |                    |                    |                       |                       |                    |                    |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|--------------------|-----------------------|-----------------------|--------------------|--------------------|
| 40 | Zirconio-97                                                                                                                                                                                                                  | D, ver $^{86}\text{Zr}$ | $2.22 \times 10^7$ | $7.40 \times 10^7$ | $2.96 \times 10^4$    | $1.11 \times 10^2$    | $3.33 \times 10^5$ | $3.33 \times 10^5$ |
|    |                                                                                                                                                                                                                              | W, ver $^{86}\text{Zr}$ | -                  | $3.70 \times 10^7$ | $2.22 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    |                                                                                                                                                                                                                              | Y, ver $^{86}\text{Zr}$ | -                  | $3.70 \times 10^7$ | $1.85 \times 10^4$    | $7.40 \times 10^1$    | -                  | -                  |
|    | Cualquier radionúclido simple no listado anteriormente con modo de decaimiento distinto a la emisión alfa o fisión espontánea y con vida media radiactiva menor a 2 horas                                                    | Sumersión <sup>1</sup>  | -                  | $7.40 \times 10^6$ | $3.70 \times 10^3$    | $3.70 \times 10^1$    | -                  | -                  |
| -  | Cualquier radionúclido simple no listado anteriormente con modo de decaimiento distinto a la emisión alfa o fisión espontánea y con vida media radiactiva mayor a 2 horas                                                    | -                       | -                  | $7.40 \times 10^3$ | 3.70                  | $3.70 \times 10^{-2}$ | $3.70 \times 10^2$ | $3.70 \times 10^3$ |
| -  | Cualquier radionúclido simple no listado anteriormente que decaiga por emisión alfa o fisión espontánea o cualquier mezcla para la cual la identidad o la concentración de cualquier radionúclido en la mezcla no se conozca | -                       | -                  | $1.48 \times 10^1$ | $7.40 \times 10^{-3}$ | $3.70 \times 10^{-5}$ | $7.40 \times 10^1$ | $7.40 \times 10^2$ |

<sup>1</sup> "Sumersión" significa que los valores dados son para inmersión en una nube semi-infinita hemisférica de material aéreo.

<sup>2</sup> Estos radionúclidos tienen vidas medias radiológicas menores a 2 horas. La dosis equivalente efectiva total recibida durante las operaciones con estos radionúclidos podría incluir una contribución significativa por exposición externa. Los valores de CDA para todos los radionúclidos, distintos a los designados en la Clase "Sumersión," se basan en la dosis equivalente efectiva comprometida debida a la incorporación de radionúclidos dentro del cuerpo y no incluyen contribuciones potencialmente significativas al equivalente de dosis debido a exposiciones externas. El usuario puede substituir  $3700 \text{ Bq/m}^3$  para el CDA listado para tomar en cuenta prospectivamente la dosis por inmersión, pero debería usar dispositivos de monitoreo individual u otros instrumentos de medición de la radiación externa para demostrar el cumplimiento con los límites.

<sup>3</sup> Para mezclas solubles de  $^{238}\text{U}$ ,  $^{234}\text{U}$ , y  $^{235}\text{U}$  en aire, la toxicidad química puede ser el factor limitante. Si el porcentaje en peso (enriquecimiento) de  $^{235}\text{U}$  no es mayor de 5, el valor de concentración para una semana de trabajo de 40 horas es de 0.2 miligramos de uranio por metro cúbico de aire, en promedio. Para cualquier enriquecimiento, el producto de la concentración promedio y el tiempo de exposición durante una semana de trabajo de 40 horas no debería exceder  $3.0 \times 10^8$  (AE)  $\text{Bq-h/m}^3$ , donde AE es la actividad específica del uranio inhalado. La actividad específica para el uranio natural es de  $2.5 \times 10^4$  Bq por gramo de U.

Clase D: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, menor a 10 días.

Clase W: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, de 10 a 100 días.

Clase Y: Tiempo de retención de una partícula de  $1 \mu\text{m}$  en la región del pulmón, mayor a 100 días.

## 7. Bibliografía

**7.1** Ley Reglamentaria del Artículo 27 Constitucional en Materia Nuclear. Publicado en el Diario Oficial de la Federación el 4 de febrero de 1985. Última reforma publicada en el Diario Oficial de la Federación el 9 de abril de 2012.

**7.2** Reglamento General de Seguridad Radiológica. Publicado en el Diario Oficial de la Federación el 22 de noviembre de 1988.

**7.3** Organismo Internacional de Energía Atómica, 1983. Normas básicas de seguridad en materia de protección radiológica. Viena. OIEA. 176 p. (OIEA. Colección Seguridad No. 9).

**7.4** Code of Federal Regulations. Standards for protection against radiation. 10 CFR Part 20. Office of the Federal Register National Archives and Records Administration, U.S Government, 1993.

**7.5** Glosario de Seguridad Tecnológica del OIEA. Organismo Internacional de Energía Atómica, Viena, 2007.

**7.6** The International Commission on Radiological Protection, 1977. Recommendations of the ICRP. Annals of the ICRP. (ICRP-26) 1 (3). 53p.

**7.7** The International Commission on Radiological Protection. Recommendations of the International Commission on Radiological Protection. Annals of the ICRP. (ICRP-30) 4 partes.

**7.8** The International Commission on Radiological Protection, 1984. A Compilation of the major concepts and quantities in use by ICRP. Annals of the ICRP. (ICRP-42). 14 (4) 19p.

**7.9** The International Commission on Radiological Protection, 1975. Report of the task group on reference man: [anatomical, physiological and metabolic characteristics]. Annals of the ICRP (ICRP-23). 480p.

**7.10** Safety Report Series no. 19, Generic models for use in assessing the impact of discharges of radioactive substances to the environment, International Atomic Energy Agency, Vienna, 2001.

## **8. Concordancia con normas internacionales y normas mexicanas**

No es posible establecer concordancia con normas internacionales, ni con normas mexicanas, por no existir referencia al momento de elaborar la presente norma.

## **9. Evaluación de la conformidad**

**9.1** La evaluación de la conformidad de la presente Norma Oficial Mexicana se realizará por parte de la Secretaría de Energía a través de la Comisión Nacional de Seguridad Nuclear y Salvaguardias y/o por las personas acreditadas y aprobadas en los términos de la Ley Federal sobre Metrología y Normalización y su Reglamento.

**9.2** La evaluación de la conformidad incluirá lo siguiente:

**9.2.1** Revisión documental de los registros donde se compruebe que los LAI para el POE se encuentran dentro de los límites establecidos en la presente norma para el radionúclido correspondiente.

**9.2.2** Revisión documental de los registros donde se compruebe que las CDA de cada una de las zonas controladas con riesgo de exposición interna para el POE cumple con lo establecido en la presente norma para el radionúclido correspondiente.

**9.2.3** Revisión documental del proceso de evaluación de la dosis para el POE que se hayan visto expuestos en forma simultánea a una mezcla de radionúclidos, o a irradiación externa e interna, o bien, que hayan ingerido e inhalado un determinado radionúclido.

**9.2.4** Revisión documental de que el contenido de los registros de los efluentes gaseosos y líquidos de material radiactivo cumple con lo establecido en la presente norma.

**9.2.5** Revisión documental de la observancia de los límites de equivalente de dosis anual o de los límites derivados, de acuerdo con lo establecido en el numeral 6.9 de la presente norma.

## **10. Observancia**

Esta norma es de observancia obligatoria en el territorio nacional, y corresponde a la Secretaría de Energía, por conducto de la Comisión Nacional de Seguridad Nuclear y Salvaguardias, la vigilancia de su cumplimiento.

## **11. Vigencia**

La presente Norma Oficial Mexicana cancela a las Normas Oficiales Mexicanas: NOM-005-NUCL-1994, Límites anuales de incorporación (LAI) y concentraciones derivadas en aire (CDA) de radionúclidos para el personal ocupacionalmente expuesto, y NOM-006-NUCL-1994, Criterios para la aplicación de los límites anuales de incorporación para grupos críticos del público, publicadas en el Diario Oficial de la Federación el 6 y el 20 de febrero de 1996 respectivamente, y entrará en vigor a los sesenta días naturales contados a partir del día siguiente de que sea publicada como Norma Oficial Mexicana en el Diario Oficial de la Federación.

Sufragio Efectivo. No Reelección.

México, D.F., a 28 de febrero de 2013.- El Director General de la Comisión Nacional de Seguridad Nuclear y Salvaguardias y Presidente del Comité Consultivo Nacional de Normalización de Seguridad Nuclear, **Juan Eibenschutz Hartman**.- Rúbrica.

