

放射線利用統計

STATISTICS
ON
THE USE OF RADIATION
IN
JAPAN

2013

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凡 例

I 統計の範囲

この統計は、「放射性同位元素等による放射線障害の防止に関する法律（昭和32年6月10日法律第167号）」（施行：昭和33年4月1日。以下、放射線障害防止法という）の規定にもとづいて、放射性同位元素または放射線発生装置の使用を原子力規制委員会に許可された事業所、1個または1式あたりの放射能が下限数量の1,000倍以下の密封された放射性同位元素のみの使用を原子力規制委員会に届け出た事業所および表示付認証機器の使用を届け出た事業所を対象としたものである。

ただし、アイソトープ廃棄物に関する統計は、放射性医薬品の使用により発生したのものも含んでいる。

なお、1, 2章に掲げる利用状況等は、原子力規制委員会との役務契約において提供されたデータを利用したものである。また、3, 4, 5章に掲げる供給量等については、公益社団法人日本アイソトープ協会が供給・集荷・処理した数量である。

II 用語

1. 使用許可・届出事業所および表示付認証機器届出事業所：

放射線障害防止法の規定にもとづいて、放射性同位元素または放射線発生装置の使用を原子力規制委員会に許可された事業所（**許可事業所**）、1個または1式あたりの放射能が下限数量の1,000倍以下の密封された放射性同位元素のみの使用を原子力規制委員会に届け出た事業所（**届出事業所**）および表示付認証機器の使用を届け出た事業所（**表示付認証機器届出事業所**）

2. 販売・賃貸事業所：

放射線障害防止法の規定にもとづいて、放射性同位元素を業として販売または賃貸することを原子力規制委員会に届け出た事業所

3. 医療機関：

医療法にもとづく病院および診療所
（教育機関および民間企業の附属病院ならびに診療所を含む）

4. 教育機関：

学校教育法にもとづく学校（大学にあってはその学部）。大学の附属病院および附属研究所・試験所・研究施設等を除く

5. 研究機関：

国立、独立行政法人、公立、特殊法人、公益法人等の研究所および試験所ならびに教育機関または民間企業の附属研究所・試験所・研究施設

6. 民間企業：

民間の工場および作業場。附属研究所・試験所・研究施設ならびに附属病院を除く

7. その他の機関：上記3.，4.，5. および6. の分類に属さない事業所

8. 集計期間：平成24年4月1日から平成25年3月31日の間とする

9. 非：密封されていない放射性同位元素（非密封アイソトープ）

10. 密：密封された放射性同位元素（密封アイソトープ）

11. 発：放射線発生装置

12. 医療機器：

密封アイソトープのうち、薬事法（昭和35年8月10日法律第145号）で規定されている医療機器

13. 放射性医薬品：

「放射性医薬品の製造及び取扱規則（昭和36年2月1日厚生省令第4号）」に規定された放射性医薬品

14. アイソトープ廃棄物：

アイソトープまたは放射性医薬品の使用により発生した廃棄物

- 1) 集荷：医療機関、研究機関等からアイソトープ廃棄物を集め保管すること
- 2) 処理：アイソトープ廃棄物の安定化および減容のため焼却・圧縮等を行うこと

Ⅲ 記号

— : 計数零の場合

・ : 統計項目のない場合

0.0 : 数または比率が微小（0.05未満）の場合

Explanatory Notes

I Coverage of Statistics

This booklet presents the statistical data on the following three types of establishments; 1) the establishments which have been permitted by the Nuclear Regulation Authority, Japan (hereinafter called the "NRA") to use radioisotopes and/or radiation generators, 2) the establishments which have reported to and have been accepted by the NRA to use only sealed radioisotopes of not more than one thousand times of the exemption level for each kind of radioisotopes in one piece (or one set or one unit in normal use), and 3) the establishments which have reported by the NRA to use only approved devices with certification labels, as provided by the Law Concerning Prevention from Radiation Hazards due to Radioisotopes, etc.(Law No.167, June 10,1957), hereinafter called the "Law".

Statistics regarding to radioactive waste include the radioactive waste generated by medical institutions from the use of radiopharmaceuticals for diagnosis and therapy.

Following figures and utilizations of radiation in Chapters 1 and 2 are created using the data offered in contract for services with the Ministry. Figures and amounts in Chapters 3, 4, and 5 are based on the statistics of supplied radioisotopes and collected or treated radioactive waste which have managed by Japan Radioisotope Association.

II Terms and Abbreviations

1.Users:

The establishments which have been permitted by the NRA to use radioisotopes or radiation generators (designated as "permitted users") and the establishments that have reported to and have been accepted by the NRA to use only sealed radioisotopes of not more than one thousand times of the exemption level for each kind of radioisotopes in one piece (or one set or one unit for normal use) ("reported users"), and have reported by the NRA to use only approved devices with certification labels, ("notifying user of the approved devices with certification labels", hereinafter called "notifies").

2.Dealers and Lessors:

The establishments have been accepted by the NRA to deal with or rent radioisotopes or instruments containing radioisotopes as provided by the Law.

3.Hospitals and Clinics:

Hospitals attached to educational institutions and industrial companies are included.

4.Educational Institutions:

Faculties of universities, colleges and high schools, their attached hospitals and research institutions are excluded.

5.Research Institutions:

Research institutions attached to educational institutions and industrial companies are included.

6.Private Companies:

Factories and works

7.Other Organizations:

Organizations other than those falling under the above-mentioned 3.,4.,5. and 6.

8.Fiscal Year:

From April 1, 2012 to March 31, 2013

9. US :Unsealed radioisotopes

10. S :Sealed radioisotopes

11. G :Radiation generators

12.Medical Devices :

Sealed radioisotopes prescribed by Pharmaceutical Affairs Act (Law No. 145, August 10, 1960)

13.Radiopharmaceuticals :

Radiopharmaceuticals prescribed by basically Pharmaceutical Affairs Act (Law No.145,August 10, 1960).

Their radionuclides were prescribed by Atomic Energy Basic Act (Law No.186, December 19, 1955) and they were also approved under Pharmaceutical Affairs Act.

Radiopharmaceuticals are used mainly for injections, namely "*in vivo* use". The assay kits containing radiolabeled compounds are also described as radiopharmaceuticals, namely "*in vitro* use" as long as they are used for clinical examinations. Radiopharmaceuticals are, here, described as "*in vivo*" for clinical diagnosis and therapy , and "*in vitro*" for diagnostic assays.

14. Radioisotope Wastes :

Wastes generated from unsealed radioisotopes or radiopharmaceuticals that were supplied through Japan Radioisotope Association, or generated by radiation generators defined by Radiation Hazards Prevention Law.

Radioisotope wastes are collected and treated in accordance with their properties safely and efficiently. The treated radioisotope wastes are packed in containers and managed under controlled conditions.

III Symbols

The following symbols are used in the tables.

- : Nil
- : Class or item not applicable
- 0.0 : Figure less than 0.05

IV Districts and Prefectures

The following serial number is given to each district and prefecture.

| | | | |
|-----|----------------------|-----|----------------------------|
| 100 | HOKKAIDO | 500 | KINKI DISTRICT |
| 200 | TOHOKU DISTRICT | 501 | Mie Prefecture |
| 201 | Aomori Prefecture | 502 | Shiga Prefecture |
| 202 | Iwate Prefecture | 503 | Kyoto Prefecture |
| 203 | Miyagi Prefecture | 504 | Osaka Prefecture |
| 204 | Akita Prefecture | 505 | Hyogo Prefecture |
| 205 | Yamagata Prefecture | 506 | Nara Prefecture |
| 206 | Fukushima Prefecture | 507 | Wakayama Prefecture |
| 300 | KANTO DISTRICT | 600 | CHUGOKU & SHIKOKU DISTRICT |
| 301 | Ibaraki Prefecture | 601 | Tottori Prefecture |
| 302 | Tochigi Prefecture | 602 | Shimane Prefecture |
| 303 | Gunma Prefecture | 603 | Okayama Prefecture |
| 304 | Saitama Prefecture | 604 | Hiroshima Prefecture |
| 305 | Chiba Prefecture | 605 | Yamaguchi Prefecture |
| 306 | Tokyo | 606 | Tokushima Prefecture |
| 307 | Kanagawa Prefecture | 607 | Kagawa Prefecture |
| 400 | CHUBU DISTRICT | 608 | Ehime Prefecture |
| 401 | Niigata Prefecture | 609 | Kochi Prefecture |
| 402 | Toyama Prefecture | 700 | KYUSHU DISTRICT |
| 403 | Ishikawa Prefecture | 701 | Fukuoka Prefecture |
| 404 | Fukui Prefecture | 702 | Saga Prefecture |
| 405 | Yamanashi Prefecture | 703 | Nagasaki Prefecture |
| 406 | Nagano Prefecture | 704 | Kumamoto Prefecture |
| 407 | Gifu Prefecture | 705 | Oita Prefecture |
| 408 | Shizuoka Prefecture | 706 | Miyazaki Prefecture |
| 409 | Aichi Prefecture | 707 | Kagoshima Prefecture |
| | | 708 | Okinawa Prefecture |

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1 概 況 GENERAL ASPECTS

1.1 使用許可・届出事業所数, 販売・賃貸事業所数 Number of Users , Dealers and Lessors

1.1.1 使用許可・届出事業所数*の推移(機関別, 年度別)

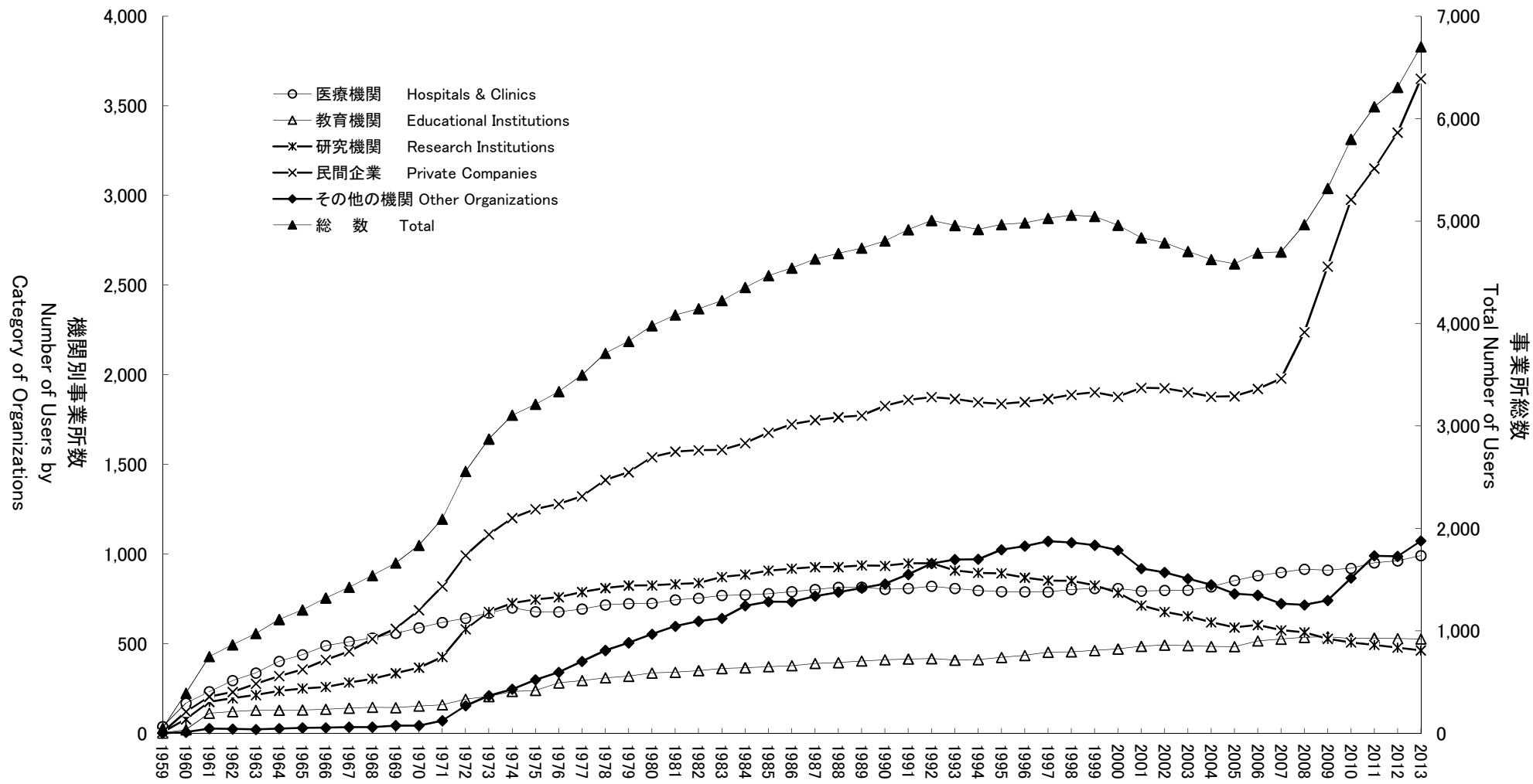
Changes with the Year in the Number of Users by Category of Organizations and License
(as of March 31 of Each Year from 2004 to 2013)

| 機関 Category | 年月 Year | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | 構成比 Ratio(%) |
|----------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| | | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | |
| 総 数 Total | | 4,625 | 4,583 | 4,689 | 4,699 | 4,966 | 5,319 | 5,799 | 6,116 | 6,306 | 6,703 | 100% |
| 許 可 Permitted | | 2,429 | 2,468 | 2,548 | 2,528 | 2,526 | 2,464 | 2,449 | 2,427 | 2,390 | 2,368 | |
| 届 出 Reported &Notifies | | 2,196 | 2,115 | 2,141 | 2,171 | 2,440 | 2,855 | 3,350 | 3,689 | 3,916 | 4,335 | |
| 医療機関 Hospitals&Clinics | | 817 | 852 | 879 | 897 | 915 | 910 | 920 | 951 | 962 | 991 | 14.8 |
| 許 可 Permitted | | 804 | 839 | 859 | 868 | 889 | 872 | 879 | 904 | 903 | 918 | |
| 届 出 Reported &Notifies | | 13 | 13 | 20 | 29 | 26 | 38 | 41 | 47 | 59 | 73 | |
| 教育機関 Educational Institutions | | 484 | 483 | 515 | 525 | 535 | 538 | 529 | 531 | 528 | 526 | 7.8 |
| 許 可 Permitted | | 364 | 373 | 381 | 381 | 376 | 366 | 356 | 345 | 336 | 331 | |
| 届 出 Reported &Notifies | | 120 | 110 | 134 | 144 | 159 | 172 | 173 | 186 | 192 | 195 | |
| 研究機関 Research Institutions | | 619 | 590 | 604 | 575 | 563 | 527 | 507 | 493 | 478 | 462 | 6.9 |
| 許 可 Permitted | | 354 | 346 | 325 | 315 | 303 | 288 | 280 | 267 | 253 | 240 | |
| 届 出 Reported &Notifies | | 265 | 244 | 279 | 260 | 260 | 239 | 227 | 226 | 225 | 222 | |
| 民間企業 Private Companies | | 1,877 | 1,880 | 1,921 | 1,979 | 2,237 | 2,603 | 2,977 | 3,151 | 3,351 | 3,651 | 54.5 |
| 許 可 Permitted | | 827 | 828 | 892 | 881 | 877 | 854 | 853 | 833 | 818 | 801 | |
| 届 出 Reported &Notifies | | 1,050 | 1,052 | 1,029 | 1,098 | 1,360 | 1,749 | 2,124 | 2,318 | 2,533 | 2,850 | |
| その他の機関 Other Organizations | | 828 | 778 | 770 | 723 | 716 | 741 | 866 | 990 | 987 | 1,073 | 16.0 |
| 許 可 Permitted | | 80 | 82 | 91 | 83 | 81 | 84 | 81 | 78 | 80 | 78 | |
| 届 出 Reported &Notifies | | 748 | 696 | 679 | 640 | 635 | 657 | 785 | 912 | 907 | 995 | |

*表示付認証機器届出事業所を含む。

*Number of Users are included notifying users of the approved devices with certification labels.

図1 使用許可・届出事業所数の年度推移
 Fig.1 Changes with the Year in the Number of Users



1.1.2 使用許可・届出事業所数*の推移(都道府県別, 年度別)

Changes with the Year in the Number of Users by Prefecture
(as of March 31 of Each Year from 2004 to 2013)

| 都道府県 Prefecture | 年月 Year | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | Mar. | 構成比 Ratio(%) |
|--------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| | | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | |
| 全 国 Total | | 4,625 | 4,583 | 4,689 | 4,699 | 4,966 | 5,319 | 5,799 | 6,116 | 6,306 | 6,703 | 100% |
| 100 北海道 | | 190 | 187 | 190 | 192 | 201 | 213 | 246 | 278 | 288 | 299 | 4.5 |
| 201 青森 | | 46 | 48 | 49 | 49 | 53 | 61 | 67 | 83 | 94 | 105 | 1.6 |
| 202 岩手 | | 36 | 38 | 38 | 40 | 38 | 42 | 43 | 52 | 50 | 50 | 0.7 |
| 203 宮城 | | 80 | 76 | 84 | 85 | 85 | 94 | 110 | 108 | 114 | 146 | 2.2 |
| 204 秋田 | | 36 | 36 | 38 | 40 | 41 | 43 | 59 | 60 | 63 | 68 | 1.0 |
| 205 山形 | | 48 | 46 | 45 | 46 | 46 | 49 | 50 | 55 | 57 | 58 | 0.9 |
| 206 福島 | | 83 | 83 | 83 | 83 | 91 | 96 | 111 | 113 | 119 | 131 | 2.0 |
| 301 茨城 | | 233 | 230 | 247 | 246 | 260 | 264 | 274 | 280 | 298 | 302 | 4.5 |
| 302 栃木 | | 82 | 75 | 75 | 76 | 79 | 90 | 87 | 90 | 88 | 90 | 1.3 |
| 303 群馬 | | 67 | 64 | 66 | 64 | 66 | 73 | 82 | 74 | 77 | 81 | 1.2 |
| 304 埼玉 | | 185 | 184 | 185 | 181 | 187 | 208 | 219 | 236 | 232 | 233 | 3.5 |
| 305 千葉 | | 203 | 194 | 209 | 198 | 214 | 237 | 255 | 269 | 286 | 298 | 4.4 |
| 306 東京都 | | 394 | 399 | 419 | 423 | 461 | 493 | 535 | 575 | 615 | 641 | 9.6 |
| 307 神奈川県 | | 320 | 312 | 314 | 324 | 345 | 346 | 359 | 369 | 371 | 398 | 5.9 |
| 401 新潟 | | 89 | 88 | 90 | 88 | 94 | 107 | 112 | 116 | 113 | 118 | 1.8 |
| 402 富山 | | 58 | 57 | 58 | 62 | 67 | 68 | 81 | 84 | 79 | 79 | 1.2 |
| 403 石川 | | 44 | 45 | 44 | 47 | 49 | 53 | 59 | 62 | 62 | 70 | 1.0 |
| 404 福井 | | 42 | 42 | 42 | 43 | 43 | 48 | 61 | 68 | 71 | 69 | 1.0 |
| 405 山梨 | | 31 | 32 | 32 | 32 | 35 | 37 | 42 | 46 | 51 | 54 | 0.8 |
| 406 長野 | | 95 | 89 | 90 | 89 | 89 | 85 | 90 | 94 | 96 | 107 | 1.6 |
| 407 岐阜 | | 68 | 65 | 69 | 70 | 74 | 80 | 86 | 89 | 86 | 90 | 1.3 |
| 408 静岡県 | | 188 | 185 | 186 | 180 | 195 | 209 | 224 | 226 | 215 | 233 | 3.5 |
| 409 愛知県 | | 248 | 243 | 254 | 250 | 265 | 291 | 309 | 320 | 330 | 346 | 5.2 |
| 501 三重 | | 71 | 74 | 79 | 78 | 83 | 86 | 99 | 100 | 100 | 100 | 1.5 |
| 502 滋賀 | | 83 | 86 | 84 | 80 | 84 | 80 | 86 | 87 | 87 | 85 | 1.3 |
| 503 京都 | | 100 | 106 | 107 | 105 | 108 | 124 | 140 | 142 | 149 | 155 | 2.3 |
| 504 大阪 | | 333 | 324 | 324 | 330 | 360 | 397 | 395 | 419 | 444 | 487 | 7.3 |
| 505 兵庫 | | 211 | 216 | 214 | 220 | 226 | 246 | 272 | 281 | 283 | 316 | 4.7 |
| 506 奈良 | | 30 | 32 | 32 | 30 | 31 | 35 | 40 | 38 | 43 | 45 | 0.7 |
| 507 和歌山 | | 31 | 34 | 33 | 34 | 35 | 45 | 50 | 53 | 53 | 66 | 1.0 |
| 601 鳥取 | | 26 | 28 | 30 | 29 | 29 | 29 | 29 | 30 | 33 | 36 | 0.5 |
| 602 島根 | | 26 | 27 | 26 | 27 | 30 | 35 | 36 | 54 | 46 | 48 | 0.7 |
| 603 岡山 | | 89 | 88 | 88 | 89 | 91 | 100 | 109 | 111 | 115 | 118 | 1.8 |
| 604 広島 | | 118 | 119 | 122 | 123 | 129 | 134 | 161 | 167 | 171 | 186 | 2.8 |
| 605 山口 | | 76 | 74 | 72 | 76 | 73 | 71 | 86 | 89 | 89 | 91 | 1.4 |
| 606 徳島 | | 50 | 46 | 45 | 46 | 49 | 53 | 60 | 57 | 57 | 60 | 0.9 |
| 607 香川 | | 42 | 41 | 42 | 41 | 45 | 47 | 52 | 54 | 55 | 59 | 0.9 |
| 608 愛媛 | | 72 | 66 | 70 | 68 | 68 | 69 | 79 | 78 | 80 | 84 | 1.3 |
| 609 高知県 | | 28 | 27 | 28 | 28 | 28 | 29 | 36 | 38 | 37 | 36 | 0.5 |
| 701 福岡 | | 135 | 139 | 139 | 136 | 147 | 164 | 184 | 200 | 208 | 231 | 3.4 |
| 702 佐賀 | | 27 | 26 | 29 | 27 | 29 | 31 | 36 | 37 | 38 | 40 | 0.6 |
| 703 長崎 | | 35 | 35 | 34 | 35 | 40 | 39 | 50 | 49 | 55 | 60 | 0.9 |
| 704 熊本 | | 51 | 55 | 55 | 57 | 58 | 58 | 62 | 70 | 76 | 82 | 1.2 |
| 705 大宮 | | 31 | 32 | 34 | 35 | 38 | 42 | 47 | 50 | 55 | 58 | 0.9 |
| 706 宮崎 | | 27 | 27 | 27 | 27 | 35 | 39 | 45 | 57 | 58 | 58 | 0.9 |
| 707 鹿児島 | | 39 | 37 | 37 | 39 | 40 | 46 | 46 | 54 | 55 | 60 | 0.9 |
| 708 沖縄 | | 28 | 26 | 31 | 31 | 32 | 33 | 38 | 54 | 64 | 76 | 1.1 |

*表示付認証機器届出事業所を含む。

*Number of Users are included notifying users of the approved devices with certification labels.

1.1.3 使用許可・届出事業所*の地域分布(都道府県別, 機関別)

Geographical Distribution of Users by Category of Organizations and by License(as of March 31,2013)

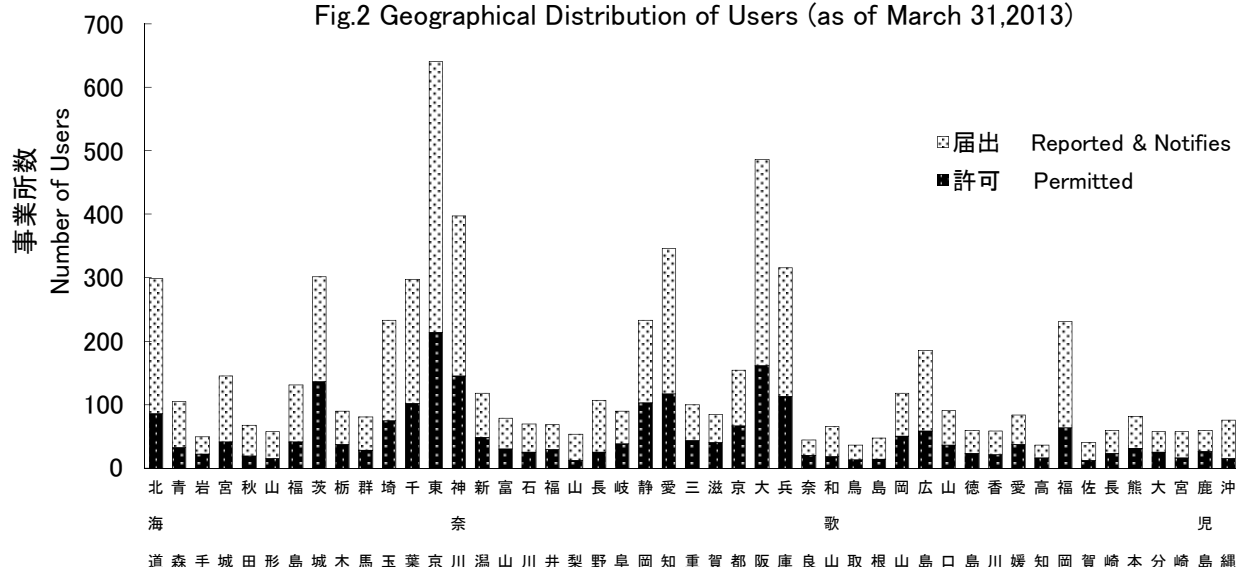
| 都道府県 Prefecture | 総数 Total | | | 医療機関 Hospitals & Clinics | | | 教育機関 Educational Institutions | | | 研究機関 Research Institutions | | | 民間企業 Private Companies | | | その他の機関 Other Organizations | | |
|--------------------|-------------|-----------------|--------------------------------|--------------------------------|-----------------|--------------------------------|-------------------------------------|-----------------|--------------------------------|----------------------------------|-----------------|--------------------------------|------------------------------|-----------------|--------------------------------|----------------------------------|-----------------|--------------------------------|
| | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies | 総数 Total | 許可 Permitted | 届出 & Reported & Notifies |
| 全 国 Total | 6,703 | 2,368 | 4,335 | 991 | 918 | 73 | 526 | 331 | 195 | 462 | 240 | 222 | 3,651 | 801 | 2,850 | 1,073 | 78 | 995 |
| 100 北 海 道 | 299 | 86 | 213 | 43 | 40 | 3 | 25 | 15 | 10 | 12 | 2 | 10 | 120 | 21 | 99 | 99 | 8 | 91 |
| 201 青 森 | 105 | 32 | 73 | 16 | 16 | - | 7 | 3 | 4 | 8 | 3 | 5 | 49 | 6 | 43 | 25 | 4 | 21 |
| 202 岩 手 | 50 | 22 | 28 | 13 | 13 | - | 2 | 2 | - | 1 | - | 1 | 22 | 6 | 16 | 12 | 1 | 11 |
| 203 宮 城 | 146 | 41 | 105 | 19 | 16 | 3 | 19 | 11 | 8 | 9 | 5 | 4 | 70 | 7 | 63 | 29 | 2 | 27 |
| 204 秋 田 | 68 | 19 | 49 | 11 | 11 | - | 4 | 3 | 1 | - | - | - | 44 | 5 | 39 | 9 | - | 9 |
| 205 山 形 | 58 | 15 | 43 | 8 | 8 | - | 3 | 3 | - | 2 | - | 2 | 30 | 3 | 27 | 15 | 1 | 14 |
| 206 福 島 | 131 | 41 | 90 | 14 | 12 | 2 | 4 | 2 | 2 | 5 | 4 | 1 | 86 | 23 | 63 | 22 | - | 22 |
| 301 茨 城 | 302 | 136 | 166 | 24 | 22 | 2 | 13 | 4 | 9 | 88 | 55 | 33 | 144 | 52 | 92 | 33 | 3 | 30 |
| 302 栃 群 | 90 | 37 | 53 | 12 | 11 | 1 | 7 | 5 | 2 | 6 | 4 | 2 | 54 | 17 | 37 | 11 | - | 11 |
| 303 馬 木 | 81 | 28 | 53 | 17 | 15 | 2 | 4 | 2 | 2 | 4 | 2 | 2 | 43 | 7 | 36 | 13 | 2 | 11 |
| 304 埼 玉 | 233 | 75 | 158 | 31 | 30 | 1 | 14 | 6 | 8 | 14 | 7 | 7 | 137 | 30 | 107 | 37 | 2 | 35 |
| 305 千 葉 | 298 | 102 | 196 | 31 | 30 | 1 | 18 | 15 | 3 | 24 | 6 | 18 | 188 | 49 | 139 | 37 | 2 | 35 |
| 306 東 京 | 641 | 214 | 427 | 100 | 89 | 11 | 81 | 53 | 28 | 53 | 34 | 19 | 316 | 27 | 289 | 91 | 11 | 80 |
| 307 神 奈 川 | 398 | 146 | 252 | 56 | 51 | 5 | 29 | 21 | 8 | 33 | 21 | 12 | 232 | 51 | 181 | 48 | 2 | 46 |
| 401 新 潟 | 118 | 49 | 69 | 17 | 17 | - | 10 | 7 | 3 | 4 | 1 | 3 | 59 | 21 | 38 | 28 | 3 | 25 |
| 402 富 山 | 79 | 30 | 49 | 12 | 12 | - | 7 | 4 | 3 | 3 | 1 | 2 | 45 | 12 | 33 | 12 | 1 | 11 |
| 403 石 川 | 70 | 25 | 45 | 12 | 12 | - | 7 | 5 | 2 | 4 | 2 | 2 | 33 | 6 | 27 | 14 | - | 14 |
| 404 福 井 | 69 | 29 | 40 | 7 | 7 | - | 3 | 3 | - | 8 | 4 | 4 | 46 | 15 | 31 | 5 | - | 5 |
| 405 山 梨 | 54 | 12 | 42 | 7 | 7 | - | 2 | 2 | - | 3 | - | 3 | 31 | 3 | 28 | 11 | - | 11 |
| 406 長 野 | 107 | 25 | 82 | 17 | 16 | 1 | 6 | 2 | 4 | 5 | 2 | 3 | 58 | 5 | 53 | 21 | - | 21 |
| 407 岐 阜 | 90 | 38 | 52 | 17 | 13 | 4 | 6 | 4 | 2 | 6 | 3 | 3 | 47 | 16 | 31 | 14 | 2 | 12 |
| 408 静 岡 | 233 | 103 | 130 | 34 | 32 | 2 | 10 | 4 | 6 | 11 | 8 | 3 | 142 | 55 | 87 | 36 | 4 | 32 |
| 409 愛 知 | 346 | 117 | 229 | 47 | 43 | 4 | 28 | 19 | 9 | 21 | 10 | 11 | 206 | 41 | 165 | 44 | 4 | 40 |
| 501 三 重 | 100 | 44 | 56 | 16 | 14 | 2 | 2 | 2 | - | 6 | 3 | 3 | 64 | 24 | 40 | 12 | 1 | 11 |
| 502 滋 賀 | 85 | 40 | 45 | 12 | 12 | - | 6 | 3 | 3 | 5 | 2 | 3 | 51 | 23 | 28 | 11 | - | 11 |
| 503 京 都 | 155 | 67 | 88 | 22 | 22 | - | 30 | 19 | 11 | 18 | 12 | 6 | 71 | 13 | 58 | 14 | 1 | 13 |
| 504 大 阪 | 487 | 162 | 325 | 80 | 72 | 8 | 36 | 23 | 13 | 31 | 19 | 12 | 304 | 46 | 258 | 36 | 2 | 34 |
| 505 兵 庫 | 316 | 113 | 203 | 45 | 42 | 3 | 13 | 10 | 3 | 18 | 11 | 7 | 199 | 47 | 152 | 41 | 3 | 38 |
| 506 奈 良 | 45 | 20 | 25 | 10 | 10 | - | 8 | 6 | 2 | 2 | 1 | 1 | 20 | 3 | 17 | 5 | - | 5 |
| 507 和 歌 山 | 66 | 18 | 48 | 12 | 11 | 1 | 3 | 2 | 1 | 3 | - | 3 | 41 | 5 | 36 | 7 | - | 7 |
| 601 鳥 取 | 36 | 13 | 23 | 7 | 7 | - | 2 | 2 | - | 2 | - | 2 | 14 | 4 | 10 | 11 | - | 11 |
| 602 島 根 | 48 | 14 | 34 | 7 | 6 | 1 | 4 | 2 | 2 | 3 | 1 | 2 | 24 | 5 | 19 | 10 | - | 10 |
| 603 岡 山 | 118 | 51 | 67 | 14 | 13 | 1 | 16 | 10 | 6 | 3 | 2 | 1 | 64 | 25 | 39 | 21 | 1 | 20 |
| 604 広 島 | 186 | 59 | 127 | 27 | 22 | 5 | 15 | 9 | 6 | 6 | 3 | 3 | 106 | 24 | 82 | 32 | 1 | 31 |
| 605 山 口 | 91 | 36 | 55 | 16 | 15 | 1 | 4 | 2 | 2 | 3 | 1 | 2 | 52 | 17 | 35 | 16 | 1 | 15 |
| 606 徳 島 | 60 | 23 | 37 | 5 | 5 | - | 7 | 4 | 3 | 4 | 4 | - | 35 | 10 | 25 | 9 | - | 9 |
| 607 香 川 | 59 | 21 | 38 | 11 | 9 | 2 | 4 | 3 | 1 | 4 | 1 | 3 | 29 | 8 | 21 | 11 | - | 11 |
| 608 愛 媛 | 84 | 37 | 47 | 12 | 12 | - | 7 | 4 | 3 | 2 | - | 2 | 55 | 20 | 35 | 8 | 1 | 7 |
| 609 高 知 | 36 | 16 | 20 | 6 | 6 | - | 5 | 4 | 1 | 1 | - | 1 | 17 | 6 | 11 | 7 | - | 7 |
| 701 福 岡 | 231 | 64 | 167 | 36 | 32 | 4 | 23 | 11 | 12 | 10 | 2 | 8 | 120 | 12 | 108 | 42 | 7 | 35 |
| 702 佐 賀 | 40 | 12 | 28 | 6 | 5 | 1 | 2 | 2 | - | 2 | - | 2 | 18 | 3 | 15 | 12 | 2 | 10 |
| 703 長 崎 | 60 | 23 | 37 | 12 | 11 | 1 | 5 | 4 | 1 | 2 | - | 2 | 25 | 8 | 17 | 16 | - | 16 |
| 704 熊 本 | 82 | 31 | 51 | 17 | 16 | 1 | 11 | 6 | 5 | 6 | 3 | 3 | 30 | 4 | 26 | 18 | 2 | 16 |
| 705 大 分 | 58 | 25 | 33 | 15 | 15 | - | 2 | 1 | 1 | 2 | 1 | 1 | 30 | 8 | 22 | 9 | - | 9 |
| 706 宮 崎 | 58 | 16 | 42 | 9 | 9 | - | 4 | 2 | 2 | 2 | - | 2 | 31 | 5 | 26 | 12 | - | 12 |
| 707 鹿 児 島 | 60 | 26 | 34 | 19 | 19 | - | 3 | 3 | - | 2 | - | 2 | 18 | 3 | 15 | 18 | 1 | 17 |
| 708 沖 縄 | 76 | 15 | 61 | 10 | 10 | - | 5 | 2 | 3 | 1 | - | 1 | 31 | - | 31 | 29 | 3 | 26 |

*表示付認証機器届出事業所を含む。

*Number of Users are included notifying users of the approved devices with certification labels.

図2 使用許可・届出事業所の地域分布

Fig.2 Geographical Distribution of Users (as of March 31,2013)



1.1.4 使用許可・届出事業所数*(機関別, 利用形態別)

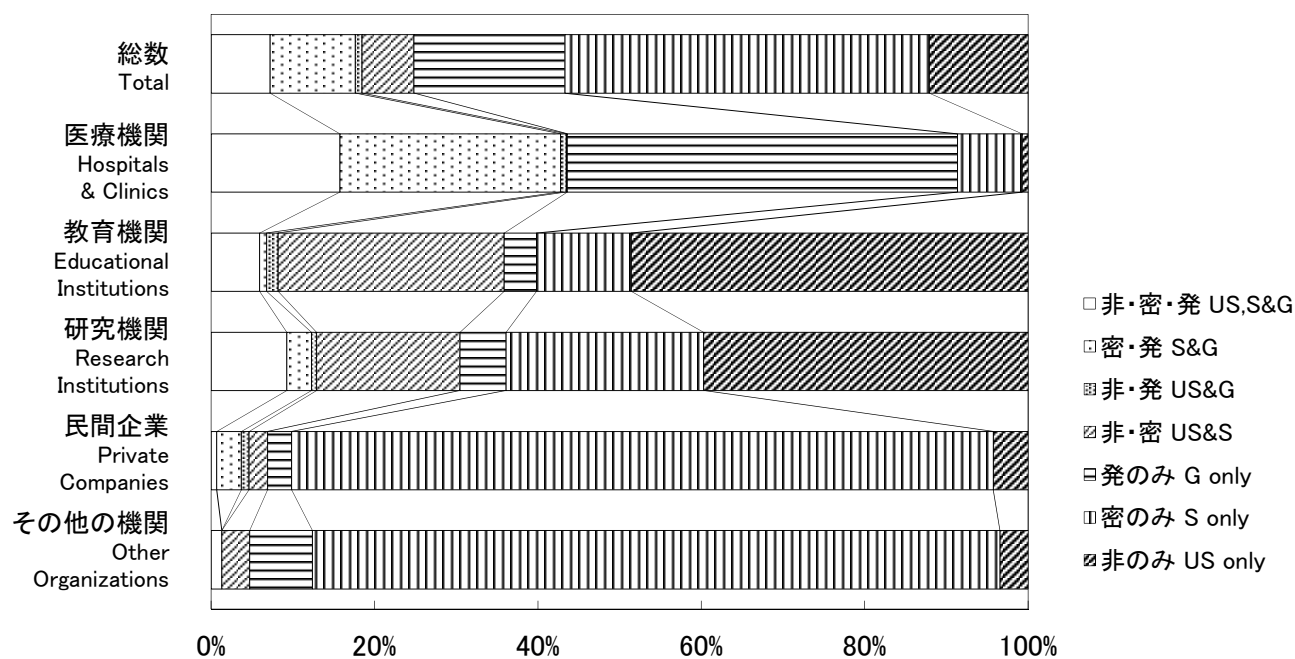
Number of Users by Category of Organizations and by Usage (as of March 31,2013)

| 機関 Category | 利用形態 Usage | 総数 Total | 非のみ US only | 密のみ S only | 発のみ G only | 非・密 US&S | 非・発 US&G | 密・発 S&G | 非・密・発 US,S&G | 延べ計 Total | | |
|----------------------------------|---------------|--------------|----------------|---------------|---------------|-------------|-------------|-------------|-----------------|--------------|--------------|--------------|
| | | | | | | | | | | 非 US | 密 S | 発 G |
| 総数 Total | | 2,906 | 352 | 1,295 | 538 | 184 | 24 | 303 | 210 | 770 | 1,992 | 1,075 |
| 構成比 Ratio(%) | | 100% | 12.1 | 44.6 | 18.5 | 6.3 | 0.8 | 10.4 | 7.2 | | | |
| 医療機関 Hospitals & Clinics | | 959 | 7 | 76 | 458 | 1 | 7 | 259 | 151 | 166 | 487 | 875 |
| 教育機関 Educational Institutions | | 354 | 172 | 41 | 14 | 98 | 5 | 3 | 21 | 296 | 163 | 43 |
| 研究機関 Research Institutions | | 302 | 120 | 73 | 17 | 53 | 2 | 9 | 28 | 203 | 163 | 56 |
| 民間企業 Private Companies | | 1,057 | 45 | 908 | 31 | 24 | 10 | 32 | 7 | 86 | 971 | 80 |
| その他の機関 Other Organizations | | 234 | 8 | 197 | 18 | 8 | - | - | 3 | 19 | 208 | 21 |

*表示付認証機器届出事業所は含まれていない。

*Number of Users are not included notifying users of the approved devices with certification labels.

図3 使用許可・届出事業所の利用形態
Fig.3 Usage of Radiation (as of March 31,2013)



1.1.5 販売・賃貸事業所数の推移(年度別)

Changes with the Number of Dealers and Lessors (as of March 31 of Each Year from 2007 to 2013)

| 業種 Kind of business | 年月 Year | Mar. 2007 | Mar. 2008 | Mar. 2009 | Mar. 2010 | Mar. 2011 | Mar. 2012 | Mar. 2013 |
|------------------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 販売業 Dealers | | 168 | 219 | 250 | 269 | 288 | 296 | 301 |
| 賃貸業 Lessors | | 6 | 87 | 105 | 115 | 127 | 140 | 144 |

1. 2 利用状況

Utilization of Radioisotopes and Radiation Generators

1.2.1 おもな密封アイソトープの使用許可・届出事業所数*(核種別, 機関別)

Number of Users of Major Sealed Radioisotopes by Category of Organizations (as of March 31,2013)

| 核種 Major Nuclides | 機関 Category | 総数 Total 構成比** ratio(%) | 医療機関 Hospitals &Clinics | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Other Organizations |
|----------------------|----------------|-------------------------------|-------------------------------|-------------------------------------|----------------------------------|------------------------------|----------------------------------|
| ³ H | | 109 5.5 | 1 | 1 | 10 | 44 | 53 |
| ¹⁴ C | | 4 0.2 | - | - | 2 | 2 | - |
| ²² Na | | 70 3.5 | 32 | 12 | 21 | 5 | - |
| ⁵⁵ Fe | | 33 1.7 | - | 5 | 9 | 19 | - |
| ⁵⁷ Co | | 92 4.6 | 7 | 51 | 25 | 9 | - |
| ⁶⁰ Co | | 332 16.7 | 86 | 38 | 35 | 164 | 9 |
| ⁶³ Ni | | 405 20.3 | - | 44 | 84 | 198 | 79 |
| ⁶⁸ Ge | | 318 16.0 | 284 | 11 | 12 | 9 | 2 |
| ⁸⁵ Kr | | 368 18.5 | - | - | 8 | 312 | 48 |
| ⁹⁰ Sr | | 142 7.1 | 22 | 23 | 14 | 81 | 2 |
| ¹⁰⁹ Cd | | 19 1.0 | - | 5 | 5 | 9 | - |
| ^{119m} Sn | | 38 1.9 | - | 20 | 15 | 3 | - |
| ¹²⁴ Sb/Be | | 17 0.9 | - | - | 3 | 14 | - |
| ¹²⁵ I | | 134 6.7 | 119 | 6 | 4 | 5 | - |
| ¹³³ Ba | | 14 0.7 | - | 4 | 5 | 5 | - |
| ¹³⁷ Cs | | 511 25.7 | 151 | 58 | 56 | 212 | 34 |
| ¹⁴⁷ Pm | | 98 4.9 | - | 2 | 6 | 88 | 2 |
| ¹⁵¹ Sm | | 26 1.3 | - | 13 | 11 | 2 | - |
| ¹⁵³ Gd | | 9 0.5 | 4 | - | 2 | 3 | - |
| ¹⁷⁰ Tm | | 6 0.3 | - | 1 | 2 | 2 | 1 |
| ¹⁹² Ir | | 247 12.4 | 140 | 5 | 5 | 96 | 1 |
| ¹⁹⁸ Au | | 40 2.0 | 37 | - | 2 | 1 | - |
| ²⁰⁴ Tl | | 13 0.7 | - | 1 | 6 | 6 | - |
| ²¹⁰ Po | | 11 0.6 | - | - | 4 | 7 | - |
| ²²⁶ Ra | | 43 2.2 | 5 | 7 | 18 | 10 | 3 |
| ²⁴¹ Am | | 182 9.1 | - | 20 | 16 | 144 | 2 |
| ²⁴¹ Am/Be | | 66 3.3 | - | 19 | 20 | 24 | 3 |
| ²⁴⁴ Cm | | 12 0.6 | - | - | 5 | 7 | - |
| ²⁵² Cf | | 62 3.1 | - | 8 | 19 | 33 | 2 |
| Others | | 50 2.5 | 1 | 13 | 17 | 19 | - |

*表示付認証機器届出事業所は含まれていない。

** 密封アイソトープ使用事業所数1,992(表1.1.4延べ計参照)に対する比

*Number of Users are not included notifying users of the approved devices with certification labels.

** Ratio to the total number of users (1,992) of sealed radioisotopes. (See Table 1.1.4)

1.2.2 非破壊検査装置およびおもな装備機器等の使用許可・届出台数* (機器の種類別, 核種別)

Number of γ -Ray Radiography Apparatus and Major Isotope Gauges in Use by Nuclide (as of March 31, 2013)

| 核種 Nuclides | 機器 Apparatus | | 非破壊 検査装置 Radio- graphy | 厚さ計 Thickness Gauges | レベル計 Level Gauges | 密度計 Density Gauges | 水分計 Moisture Gauges | 蛍光X線 分析装置 X-ray Fluorescence Spectrometer | スラブ 位置 検出器 Slab Position Detector | ガス クロマト グラフ Gas Chromato- graph | 硫黄 分析計 Sulfur Meters | たばこ 量目 制御装置 Cigarette Weight controller | 静電除去 装置 Electric Static Eliminator | ガス 検知器 Gas Detector | その他 Others |
|----------------------|-----------------|-----------------|---------------------------------|----------------------------|-------------------------|--------------------------|---------------------------|---|--|--|-------------------------------|--|--|------------------------------|---------------|
| | 総数 Total | 構成比 (Ratio%) | | | | | | | | | | | | | |
| 総数 Total | 54,772 | 100% | 976 | 2,623 | 1,938 | 299 | 74 | 58 | 31 | 979 | 108 | 0 | 13 | 15 | 47,658 |
| ³ H | 11,105 | 20.3 | - | - | - | - | - | - | - | 3 | - | - | - | - | 11,102 |
| ⁵⁵ Fe | 333 | 0.6 | - | 4 | - | - | - | 31 | - | - | - | - | - | - | 298 |
| ⁵⁷ Co | 277 | 0.5 | - | - | - | - | - | - | - | - | - | - | - | - | 277 |
| ⁶⁰ Co | 1,247 | 2.3 | 132 | - | 484 | - | - | - | 20 | - | - | - | - | - | 611 |
| ⁶³ Ni | 1,143 | 2.1 | - | - | - | - | - | - | - | 976 | - | - | - | 15 | 152 |
| ⁶⁸ Ge | 98 | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - | 98 |
| ⁸⁵ Kr | 10,422 | 19.0 | - | 1,347 | - | 3 | - | - | - | - | - | - | - | - | 9,072 |
| ⁹⁰ Sr | 160 | 0.3 | - | 157 | - | 3 | - | - | - | - | - | - | - | - | - |
| ^{119m} Sn | 233 | 0.4 | - | - | - | - | - | - | - | - | - | - | - | - | 233 |
| ¹³⁷ Cs | 2,655 | 4.8 | 22 | 274 | 1,454 | 125 | - | - | 11 | - | - | - | - | - | 769 |
| ¹⁴⁷ Pm | 498 | 0.9 | - | 198 | - | - | - | - | - | - | - | - | - | - | 300 |
| ¹⁵³ Gd | 551 | 1.0 | - | - | - | - | - | - | - | - | - | - | - | - | 551 |
| ¹⁷⁰ Tm | 2 | 0.0 | 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| ¹⁹² Ir | 717 | 1.3 | 717 | - | - | - | - | - | - | - | - | - | - | - | - |
| ²⁰⁴ Tl | 1 | 0.0 | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| ²¹⁰ Po | 372 | 0.7 | - | - | - | - | - | - | - | - | - | - | 9 | - | 363 |
| ²⁴¹ Am | 2,031 | 3.7 | 3 | 611 | - | 168 | 1 | 7 | - | - | 108 | - | - | - | 1,133 |
| ²⁴¹ Am/Be | 66 | 0.1 | - | - | - | - | 66 | - | - | - | - | - | - | - | - |
| ²⁵² Cf | 4 | 0.0 | - | - | - | - | 4 | - | - | - | - | - | - | - | - |
| Others | 22,857 | 41.7 | 100 | 31 | - | - | 3 | 20 | - | - | - | - | 4 | - | 22,699 |

*表示付認証機器は含まれていない。

医療機関における装備機器等は含まれていない。

*Number of approved devices with certification labels are not included.

Also major apparatus used in hospitals and clinics are not included.

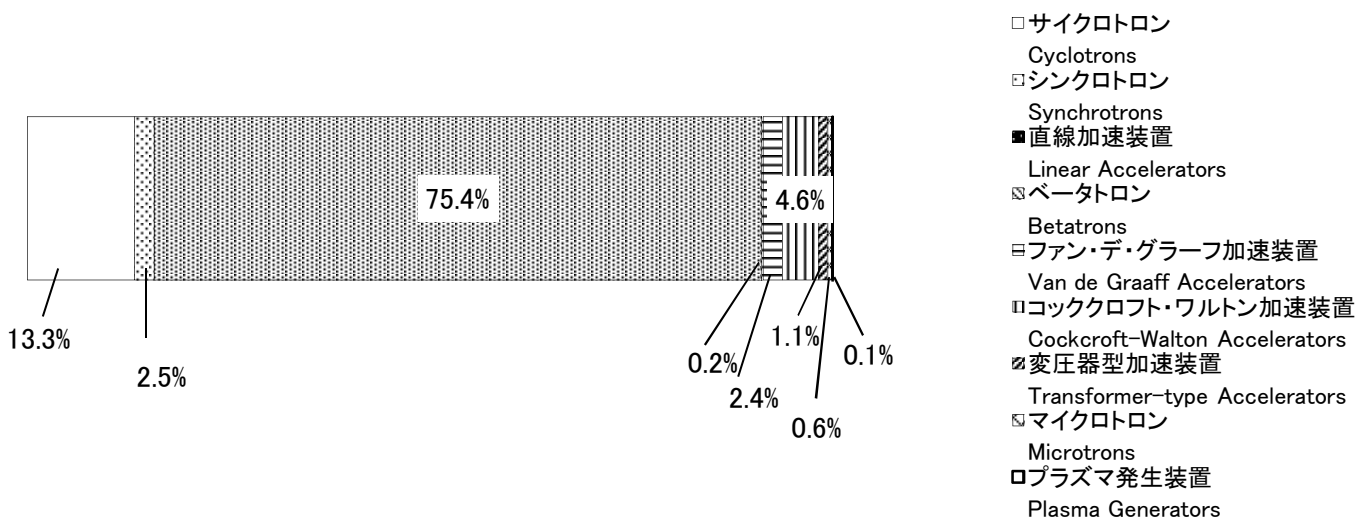
1.2.3 発生装置の使用許可台数(種類別, 機関別)

Number of Radiation Generators in Use (as of March 31,2013)

| 発生装置 Radiation Generators | 機関 Category | 総数 Total 構成比 Ratio(%) | 医療機関 Hospitals &Clinics | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Other Organizations |
|---|----------------|-----------------------------|-------------------------------|-------------------------------------|----------------------------------|------------------------------|----------------------------------|
| 総数 Total | | 1,595 | 1,180 | 66 | 165 | 147 | 37 |
| 構成比 Ratio % | | 100% | 74.0 | 4.1 | 10.3 | 9.2 | 2.3 |
| サイクロトロン Cyclotrons | | 212 13.3 | 143 | 4 | 23 | 39 | 3 |
| シンクロトロン Synchrotrons | | 40 2.5 | 9 | 3 | 23 | 4 | 1 |
| シンクロサイクロトロン Synchrocyclotrons | | - - | - | - | - | - | - |
| 直線加速装置 Linear Accelerators | | 1,202 75.4 | 1,024 | 25 | 55 | 65 | 33 |
| ベータトロン Betatrons | | 3 0.2 | - | 1 | 2 | - | - |
| ファン・デ・グラーフ加速装置 Van de Graaff Accelerators | | 38 2.4 | - | 14 | 23 | 1 | - |
| コッククロフト・ワルトン加速装置 Cockcroft-Walton Accelerators | | 73 4.6 | - | 16 | 27 | 30 | - |
| 変圧器型加速装置 Transformer-type Accelerators | | 17 1.1 | - | - | 9 | 8 | - |
| マイクロトロン Microtrons | | 9 0.6 | 4 | 3 | 2 | - | - |
| プラズマ発生装置 Plasma Generators | | 1 0.1 | - | - | 1 | - | - |

図4 発生装置の使用許可台数

Fig.4 Number of Radiation Generators in Use (as of March 31,2013)



1.2.4 表示付認証機器の使用届出台数(種類別, 機関別)

Number of Approved Devices with certification labels in Use (as of March 31,2013)

| 機器 Approved Device | 機関 Category | 総数 Total 構成比 Ratio(%) | 医療機関 Hospitals &Clinics | 教育機関 Educational Institutions | 研究機関 Reseach Institutions | 民間企業 Private Companies | その他の機関 Other Organizations |
|--|----------------|-----------------------------|-------------------------------|-------------------------------------|---------------------------------|------------------------------|----------------------------------|
| 総数 Total | | 12,870 | 57 | 354 | 541 | 6,521 | 5,397 |
| 構成比 Ratio % | | 100% | 0.4 | 2.8 | 4.2 | 50.7 | 41.9 |
| 校正用線源 Calibration Sources | | 3,781 29.4 | 48 | 169 | 194 | 1,116 | 2,254 |
| 厚さ計 Thickness Gauges | | 67 0.5 | - | - | - | 66 | 1 |
| レベル計 Level Gauges | | 831 6.5 | - | - | 1 | 807 | 23 |
| 密度計 Density Gauges | | 133 1.0 | - | - | 7 | 126 | - |
| 水分密度計 Moisture & Density Gauges | | 695 5.4 | - | - | 5 | 689 | 1 |
| 水分計 Moisture Gauges | | 314 2.4 | - | 1 | 1 | 312 | - |
| ガスクロマトグラフ Gas Chromatograph | | 4,055 31.5 | 7 | 166 | 300 | 2,999 | 583 |
| 静電除去装置 Electric Static Eliminator | | 98 0.8 | - | 17 | 30 | 49 | 2 |
| 爆発物・薬物検知器 Explosive & Drug Detector | | 2,160 16.8 | 2 | 1 | 1 | 355 | 1,801 |
| 濃度計 concentration meter | | 4 0.0 | - | - | 2 | 2 | - |
| その他 Others | | 732 5.7 | - | - | - | - | 732 |

2 各機関別利用状況*

UTILIZATION OF RADIATION BY ORGANIZATIONS IN EACH CATEGORY

2.1 医療機関 Hospitals and Clinics

2.1.1 使用許可・届出事業所数(開設者別) Number of Licensed Hospitals and Clinics by Ownership and by License (as of March 31, 2013)

| 開設者 Type of Ownership | 許可・届出の別 Category of License | 総数 Total | 許可事業所 Permitted | 届出事業所 Reported |
|------------------------------|---|-------------|--------------------|-------------------|
| 総数 Total | | 959 | 927 | 32 |
| 病院 (総数) Hospitals (Total) | | 959 | 927 | 32 |
| | 国・独立行政法人 National | 154 | 153 | 1 |
| | 公的・地方独立行政法人 Local Governmental & Public Organizations | 408 | 403 | 5 |
| | 医療法人および個人 Private | 211 | 194 | 17 |
| | その他 Other | 186 | 177 | 9 |
| 診療所 Clinics | | - | - | - |

*本章のデータには、表示付認証機器届出事業所は含まれていない。

*Number of Users are not included notifying users of the approved devices with certification labels.

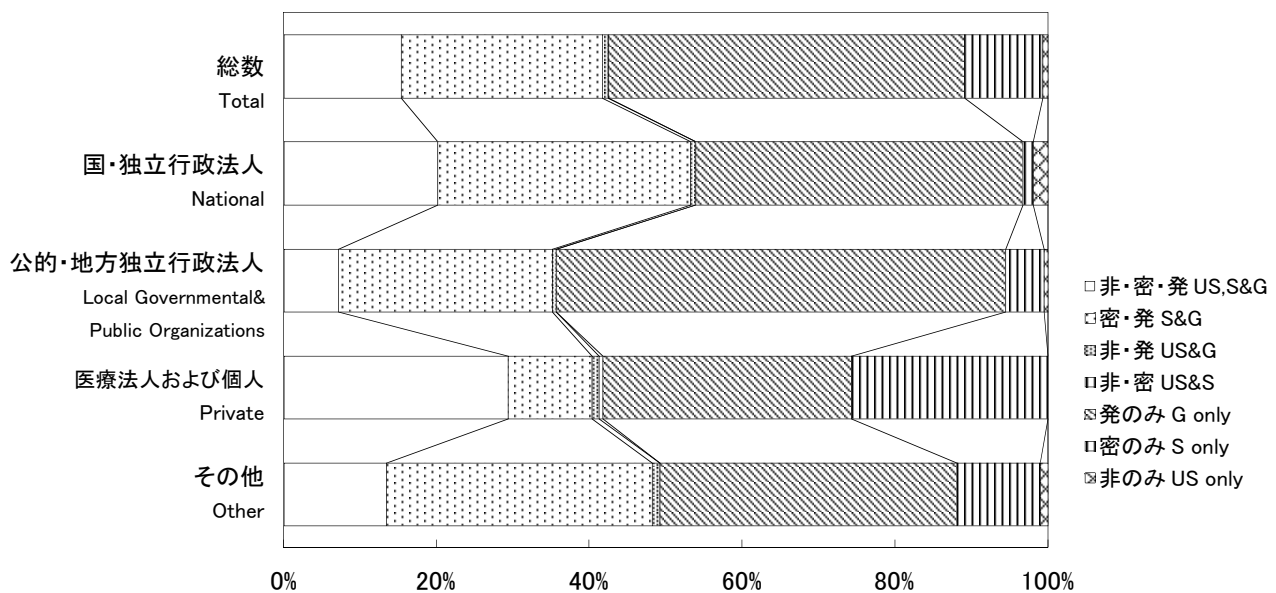
2.1.2 使用許可・届出事業所数(開設者別, 利用形態別)

Number of Licensed Hospitals and Clinics by Ownership and by Usage (as of March 31, 2013)

| 開設者 Type of Ownership | 利用形態 Usage | 総数 Total | 非のみ US only | 密のみ S only | 発のみ G only | 非・密 US & S | 非・発 US & G | 密・発 S & G | 非・密・発 US,S&G | 延べ計 | | |
|---|---------------|-------------|----------------|---------------|---------------|---------------|---------------|--------------|-----------------|-------------|-------------|-------------|
| | | | | | | | | | | 非US | 密S | 発G |
| 総数 Total | | 959 | 7 | 76 | 458 | 1 | 7 | 259 | 151 | 166 | 487 | 875 |
| 構成比 Raito (%) | | 100% | 0.7 | 7.9 | 47.8 | 0.1 | 0.7 | 27.0 | 15.7 | 17.3 | 50.8 | 91.2 |
| 病院 (総数) Hospitals (Total) | | 959 | 7 | 76 | 458 | 1 | 7 | 259 | 151 | 166 | 487 | 875 |
| 国・独立行政法人 National | | 154 | 3 | 2 | 66 | - | 1 | 51 | 31 | 35 | 84 | 149 |
| 公的・地方独立行政法人 Local Governmental & Public Organizations | | 408 | 2 | 11 | 246 | - | 2 | 117 | 30 | 34 | 158 | 395 |
| 医療法人および個人 Private | | 211 | - | 49 | 71 | 1 | 2 | 24 | 64 | 67 | 138 | 161 |
| その他 Other | | 186 | 2 | 14 | 75 | - | 2 | 67 | 26 | 30 | 107 | 170 |
| 診療所 Clinic | | - | - | - | - | - | - | - | - | - | - | - |

図5 病院における利用形態

Fig.5 Usage of Radiation in Licensed Hospitals (as of March 31, 2013)



2.1.3 使用許可・届出事業所数(都道府県別, 利用形態別)

Number of Licensed Hospitals and Clinics by Prefecture and by Usage (as of March 31, 2013)

| 都道府県 Prefecture | 利用形態 Usage | 総数 Total | 非のみ US only | 密のみ S only | 発のみ G only | 非・密 US & S | 非・発 US & G | 密・発 S & G | 非・密・発 US,S&G | 延 べ 計 | | |
|--------------------|---------------|-------------|----------------|---------------|---------------|---------------|---------------|--------------|-----------------|------------|------------|------------|
| | | | | | | | | | | 非US | 密S | 発G |
| 全 国 | Total | 959 | 7 | 76 | 458 | 1 | 7 | 259 | 151 | 166 | 487 | 875 |
| 100 | 北 海 道 | 40 | - | 1 | 17 | - | - | 14 | 8 | 8 | 23 | 39 |
| 201 | 青 森 | 15 | 1 | 1 | 9 | - | - | 4 | - | 1 | 5 | 13 |
| 202 | 青 岩 | 13 | - | - | 8 | - | - | 4 | 1 | 1 | 5 | 13 |
| 203 | 宮 城 | 18 | - | 1 | 9 | - | - | 2 | 6 | 6 | 9 | 17 |
| 204 | 秋 田 | 11 | - | - | 9 | - | - | 1 | 1 | 1 | 2 | 11 |
| 205 | 山 形 | 8 | - | - | 3 | - | - | 3 | 2 | 2 | 5 | 8 |
| 206 | 福 島 | 14 | - | 1 | 4 | - | - | 7 | 2 | 2 | 10 | 13 |
| 301 | 茨 城 | 22 | - | 1 | 16 | - | - | 3 | 2 | 2 | 6 | 21 |
| 302 | 栃 木 | 11 | - | - | 6 | - | 1 | 3 | 1 | 2 | 4 | 11 |
| 303 | 群 馬 | 16 | - | 2 | 6 | - | - | 6 | 2 | 2 | 10 | 14 |
| 304 | 埼 埼 | 31 | - | 3 | 12 | - | 1 | 10 | 5 | 6 | 18 | 28 |
| 305 | 千 葉 | 31 | - | 2 | 15 | - | 1 | 5 | 8 | 9 | 15 | 29 |
| 306 | 東 京 | 97 | - | 13 | 39 | 1 | 1 | 28 | 15 | 17 | 57 | 83 |
| 307 | 神 奈 川 | 49 | - | 1 | 22 | - | 2 | 16 | 8 | 10 | 25 | 48 |
| 401 | 新 潟 | 17 | - | 1 | 13 | - | - | 1 | 2 | 2 | 4 | 16 |
| 402 | 富 山 | 12 | - | - | 6 | - | - | 5 | 1 | 1 | 6 | 12 |
| 403 | 石 川 | 12 | - | - | 3 | - | - | 6 | 3 | 3 | 9 | 12 |
| 404 | 福 山 | 7 | - | - | 2 | - | - | 3 | 2 | 2 | 5 | 7 |
| 405 | 山 梨 | 7 | - | - | 3 | - | - | 2 | 2 | 2 | 4 | 7 |
| 406 | 山 梨 | 16 | - | - | 10 | - | - | 4 | 2 | 2 | 6 | 16 |
| 407 | 岐 阜 | 16 | - | 2 | 9 | - | - | 4 | 1 | 1 | 7 | 14 |
| 408 | 静 岡 | 34 | 1 | 3 | 17 | - | - | 7 | 6 | 7 | 16 | 30 |
| 409 | 愛 知 | 48 | - | 3 | 19 | - | - | 16 | 10 | 10 | 29 | 45 |
| 501 | 三 重 | 15 | - | 3 | 9 | - | - | 1 | 2 | 2 | 6 | 12 |
| 502 | 滋 賀 | 12 | - | 1 | 7 | - | - | 1 | 3 | 3 | 5 | 11 |
| 503 | 京 都 | 23 | 3 | 1 | 9 | - | - | 4 | 6 | 9 | 11 | 19 |
| 504 | 大 阪 | 77 | 2 | 6 | 34 | - | - | 21 | 14 | 16 | 41 | 69 |
| 505 | 兵 庫 | 43 | - | 6 | 23 | - | - | 11 | 3 | 3 | 20 | 37 |
| 506 | 和 歌 山 | 10 | - | - | 6 | - | - | 1 | 3 | 3 | 4 | 10 |
| 507 | 和 歌 山 | 11 | - | 1 | 7 | - | - | 2 | 1 | 1 | 4 | 10 |
| 601 | 鳥 取 | 7 | - | 1 | 4 | - | - | 2 | - | - | 3 | 6 |
| 602 | 島 根 | 7 | - | 1 | 2 | - | - | 4 | - | - | 5 | 6 |
| 603 | 岡 山 | 13 | - | - | 4 | - | - | 5 | 4 | 4 | 9 | 13 |
| 604 | 広 島 | 25 | - | 6 | 9 | - | - | 8 | 2 | 2 | 16 | 19 |
| 605 | 山 口 | 15 | - | - | 7 | - | - | 6 | 2 | 2 | 8 | 15 |
| 606 | 山 徳 | 5 | - | - | 3 | - | - | 1 | 1 | 1 | 2 | 5 |
| 607 | 香 川 | 10 | - | 1 | 6 | - | - | 2 | 1 | 1 | 4 | 9 |
| 608 | 香 愛 | 12 | - | - | 6 | - | - | 4 | 2 | 2 | 6 | 12 |
| 609 | 高 知 | 6 | - | 1 | 3 | - | - | 1 | 1 | 1 | 3 | 5 |
| 701 | 福 岡 | 35 | - | 5 | 12 | - | - | 14 | 4 | 4 | 23 | 30 |
| 702 | 佐 賀 | 7 | - | 1 | 4 | - | - | 2 | - | - | 3 | 6 |
| 703 | 長 崎 | 12 | - | 3 | 5 | - | - | 3 | 1 | 1 | 7 | 9 |
| 704 | 熊 本 | 16 | - | - | 9 | - | - | 5 | 2 | 2 | 7 | 16 |
| 705 | 大 分 | 15 | - | 1 | 10 | - | 1 | 1 | 2 | 3 | 4 | 14 |
| 706 | 宮 崎 | 9 | - | - | 5 | - | - | 2 | 2 | 2 | 4 | 9 |
| 707 | 鹿 児 島 | 19 | - | 2 | 11 | - | - | 4 | 2 | 2 | 8 | 17 |
| 708 | 沖 縄 | 10 | - | 1 | 6 | - | - | - | 3 | 3 | 4 | 9 |

2.1.4 近接治療装置の使用許可・届出事業所数(核種別, 放射能別)

Number of Licensed Hospitals and Clinics Using Brachytherapy (as of March 31, 2013)

| 核種 Nuclides | 機器 Apparatus | 低線量率近接治療装置 low dose rate brachytherapy | | | | 中、高線量率近接治療装置 middle and high dose rate brachytherapy (A&D) | | |
|-------------------|-----------------|--|---------------------|------------------------------|-----------------------------|---|-----|-----|
| | | 総数 Total | less than 100MBq | 100MBq ~less than 1GBq | 1GBq ~less than 10GBq | 10GBq and over | | |
| ⁶⁰ Co | | - | - | - | - | - | 32 | 33 |
| ⁹⁰ Sr | | 6 | - | 1 | 5 | - | - | - |
| ¹⁰³ Pa | | - | - | - | - | - | - | - |
| ¹⁰⁶ Ru | | 1 | - | 1 | - | - | - | - |
| ¹²⁵ I | | 118 | - | - | 1 | 117 | - | - |
| ¹³⁷ Cs | | 26 | - | 1 | 9 | 16 | - | - |
| ¹⁹² Ir | | 23 | - | - | 7 | 16 | 138 | 139 |
| ¹⁹⁸ Au | | 37 | - | - | 22 | 15 | - | - |
| ²²⁶ Ra | | 4 | 1 | 1 | 2 | - | - | - |

注1 (A&D) 欄は許可・届出台数

Note:1 The figure in (A&D) shows the number of apparatus.

2.1.5 遠隔照射治療装置の使用許可台数(放射能別, 発生装置の種類別, 年度別)

Changes with the Year in the Number of Teletherapeutic Apparatus in Use in Hospitals and Clinics
(as of March 31 of Each Year from 2008 to 2013)

| 放射能, 装置 Activity or Apparatus | 年月 Year | Mar. 2008 | | Mar. 2009* | | Mar. 2010 | | Mar. 2011 | | Mar. 2012 | | Mar. 2013 | | 構成比 Ratio(%) |
|--|------------|--------------|------|---------------|------|--------------|------|--------------|------|--------------|------|--------------|------|-----------------|
| | | [CO] | [CS] | [CO] | [CS] | [CO] | [CS] | [CO] | [CS] | [CO] | [CS] | [CO] | [CS] | |
| 総数 Total | | 1,134 | | - | | 1,161 | | 1,143 | | 1,204 | | 1,244 | | |
| ⁶⁰ Co and ¹³⁷ Cs (総数 Total) | | 82 | 13 | - | - | 75 | 10 | 70 | 7 | 63 | 8 | 56 | 8 | 100% |
| Less than 1TBq <H&C> | | - | - | - | - | - | 2 | - | 2 | - | 2 | - | 2 | 3.1 |
| 1TBq ~ less than 10TBq <H&C> | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 10TBq ~ less than 100TBq <H&C> | | 10 | 11 | - | - | 5 | 7 | 5 | 5 | 1 | 6 | - | 6 | 9.4 |
| 100TBq and over <H&C> | | 20 | 2 | - | - | 11 | 1 | 9 | - | 6 | - | 5 | - | 87.5 |
| | | 72 | 2 | - | - | 70 | 1 | 65 | - | 62 | - | 56 | - | 87.5 |
| | | 74 | | - | | 71 | | 65 | | 62 | | 56 | | |
| 発生装置(総数) Radiation Generators (Total) | | 1039 | | - | | 1076 | | 1066 | | 1133 | | 1180 | | 100% |
| 直線加速器 Linear Accelerators <H&C> | | 890 | | - | | 931 | | 922 | | 982 | | 1024 | | 86.7 |
| | | 747 | | - | | 752 | | 747 | | 783 | | 802 | | |
| ベータトロン Betatrons <H&C> | | 1 | | - | | - | | - | | - | | - | | - |
| | | 1 | | - | | - | | - | | - | | - | | |
| サイクロトロン Cyclotrons <H&C> | | 131 | | - | | 132 | | 133 | | 139 | | 143 | | 12.3 |
| | | 126 | | - | | 127 | | 127 | | 131 | | 135 | | |
| シンクロトロン Synchrotrons <H&C> | | 3 | | - | | 8 | | 7 | | 8 | | 9 | | 0.7 |
| | | 3 | | - | | 8 | | 7 | | 8 | | 9 | | |
| シンクロサイクロトロン Synchrocyclotrons <H&C> | | 1 | | - | | - | | - | | - | | - | | - |
| | | 1 | | - | | - | | - | | - | | - | | |
| マイクロトロン Microtrons <H&C> | | 13 | | - | | 5 | | 4 | | 4 | | 4 | | 0.4 |
| | | 12 | | - | | 5 | | 4 | | 4 | | 4 | | |

注1 <H&C> 欄は許可・届出事業所数

注2 [CO]欄は⁶⁰Coの台数, [CS] 欄は¹³⁷Csの台数。

Note:1 <H&C> shows the number of licensed hospitals and clinics.

Note:2 [CO] shows the number of ⁶⁰Co and [CS] shows the number of ¹³⁷Cs teletherapeutic apparatus.

* 2008年度は集計を行わなかった。

* The statistical work of this item was not carried out in fiscal 2008.

2.1.6 おもな装備機器等の使用許可・届出台数(機器の種類別, 核種別)

Number of Major Apparatus in Use in Hospitals and Clinics by Nuclide (as of March 31, 2013)

| 核種 Nuclides | 機器 Apparatus | 総数 Total | ガスクロマトグラフ | 骨塩定量分析装置 | 血液照射装置 | 校正用線源 |
|---------------------|-----------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| | | 構成比 (Ratio%) | Gas Chromatograph | Bone Densitometry | Blood Irradiators | Calibration Sources |
| 総数 Total | | 1,446 100% | - | 6 | 112 | 1,328 |
| ⁶³ Ni | | - - | - | - | - | - |
| ⁶⁸ Ge | | 1,158 80.1 | - | - | - | 1,158 |
| ⁹⁰ Sr | | 30 2.1 | - | - | - | 30 |
| ¹²⁵ I | | 1 0.1 | - | 1 | - | - |
| ¹³³ Ba | | - - | - | - | - | - |
| ¹³⁷ Cs | | 180 12.4 | - | - | 112 | 68 |
| ¹⁵³ Gd | | 5 0.3 | - | 5 | - | - |
| ²²⁶ Ra | | 2 0.1 | - | - | - | 2 |
| ²⁴¹ Am | | - - | - | - | - | - |
| Others | | 70 4.8 | - | - | - | 70 |

2.2 教育機関および研究機関 Educational Institutions and Research Institutions

2.2.1 使用許可・届出事業所数(教育機関・研究機関の種類別) Number of Licensed Educational Institutions and Research Institutions by Ownership and by License (as of March 31, 2013)

| 教育機関, 研究機関の種類 Type of Ownership | 許可・届出の別 Category of License | 総数 Total | 許可 Permitted | 届出 Reported |
|---|--------------------------------|-------------|-----------------|----------------|
| 総 数 | Total | 656 | 574 | 82 |
| 教 育 機 関 (総 数) Educational Institutions (Total) | | | | |
| 大 学 (総 数) Faculties of Universities and Colleges (Total) | | | | |
| 国立・独立行政法人 National | | | | |
| 公立・地方独立行政法人 Local Governmental | | | | |
| 私 立 Private | | | | |
| 短 大 ・ 高 専 Junior Colleges and Technical Colleges | | | | |
| 高 校 High Schools | | | | |
| 研 究 機 関 (総 数) Research Institutions (Total) | | | | |
| 大 学 付 属 Attached to Universities and Colleges | | | | |
| 国立・独立行政法人 National | | | | |
| 公立・地方独立行政法人 Local Governmental | | | | |
| 特殊法人・公益法人 Public Corporation and Non-profit Private | | | | |
| 私 立 Private | | | | |

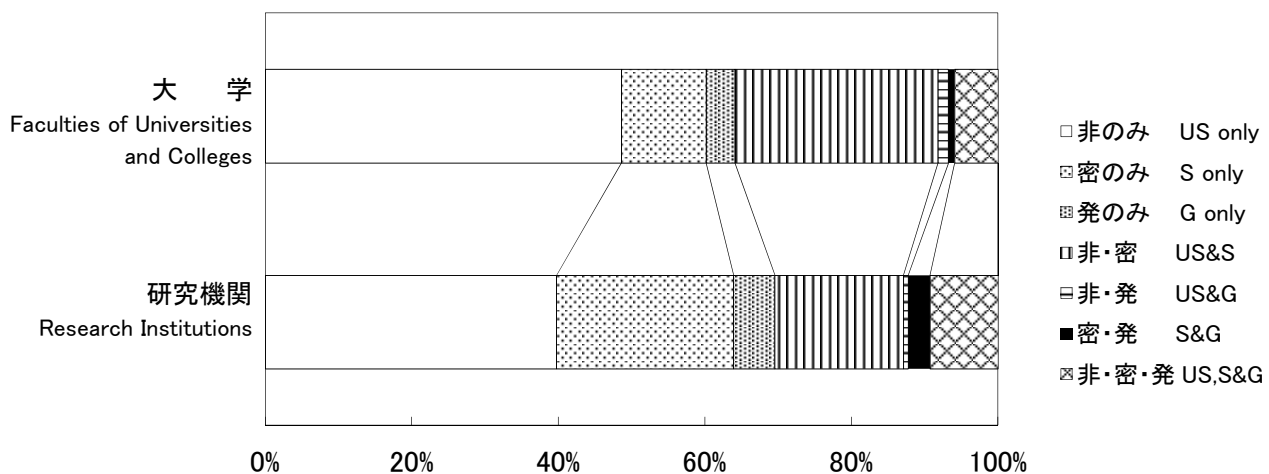
2.2.2 使用許可・届出事業所数(教育機関・研究機関の種類別, 利用形態別)

Number of Licensed Educational Institutions and Research Institutions by Ownership and by Usage
(as of March 31, 2013)

| 教育機関, 研究機関の種類 Type of Ownership | 利用形態 Usage | 総数 Total | 非のみ US only | 密のみ S only | 発のみ G only | 非・密 US&S | 非・発 US&G | 密・発 S&G | 非・密・ 発 US,S &G | 延べ計 Total | | |
|---|---------------|-------------|----------------|---------------|---------------|-------------|-------------|------------|-------------------------|--------------|------------|-----------|
| | | | | | | | | | | 非 US | 密 S | 発 G |
| 総数 Total | | 656 | 292 | 114 | 31 | 151 | 7 | 12 | 49 | 499 | 326 | 99 |
| 教育機関(総数) Educational Institutions (Total) | | 354 | 172 | 41 | 14 | 98 | 5 | 3 | 21 | 296 | 163 | 43 |
| 大学(総数) Faculties of Universities and Colleges (Total) | | 351 | 171 | 39 | 14 | 98 | 5 | 3 | 21 | 295 | 161 | 43 |
| 国立・独立行政法人 National | | 184 | 76 | 23 | 7 | 60 | 3 | 1 | 14 | 153 | 98 | 25 |
| 公立・地方独立行政法人 Local Governmental | | 26 | 13 | 1 | - | 7 | - | 1 | 4 | 24 | 13 | 5 |
| 私立 Private | | 141 | 82 | 15 | 7 | 31 | 2 | 1 | 3 | 118 | 50 | 13 |
| 短大・高専 Junior Colleges and Technical Colleges | | 3 | 1 | 2 | - | - | - | - | - | 1 | 2 | - |
| 高校 High Schools | | - | - | - | - | - | - | - | - | - | - | - |
| 研究機関(総数) Research Institutions (Total) | | 302 | 120 | 73 | 17 | 53 | 2 | 9 | 28 | 203 | 163 | 56 |
| 大学付属 Attached to Universities and Colleges | | 47 | 17 | 1 | 3 | 15 | 1 | 3 | 7 | 40 | 26 | 14 |
| 国立・独立行政法人 National | | 74 | 17 | 8 | 10 | 20 | - | 4 | 15 | 52 | 47 | 29 |
| 公立・地方独立行政法人 Local Governmental | | 49 | 6 | 41 | - | 2 | - | - | - | 8 | 43 | - |
| 特殊法人・公益法人 Public Corporation and Non-profit Private | | 29 | 9 | 8 | 2 | 5 | 1 | 1 | 3 | 18 | 17 | 7 |
| 私立 Private | | 103 | 71 | 15 | 2 | 11 | - | 1 | 3 | 85 | 30 | 6 |

図6 大学および研究機関における利用形態

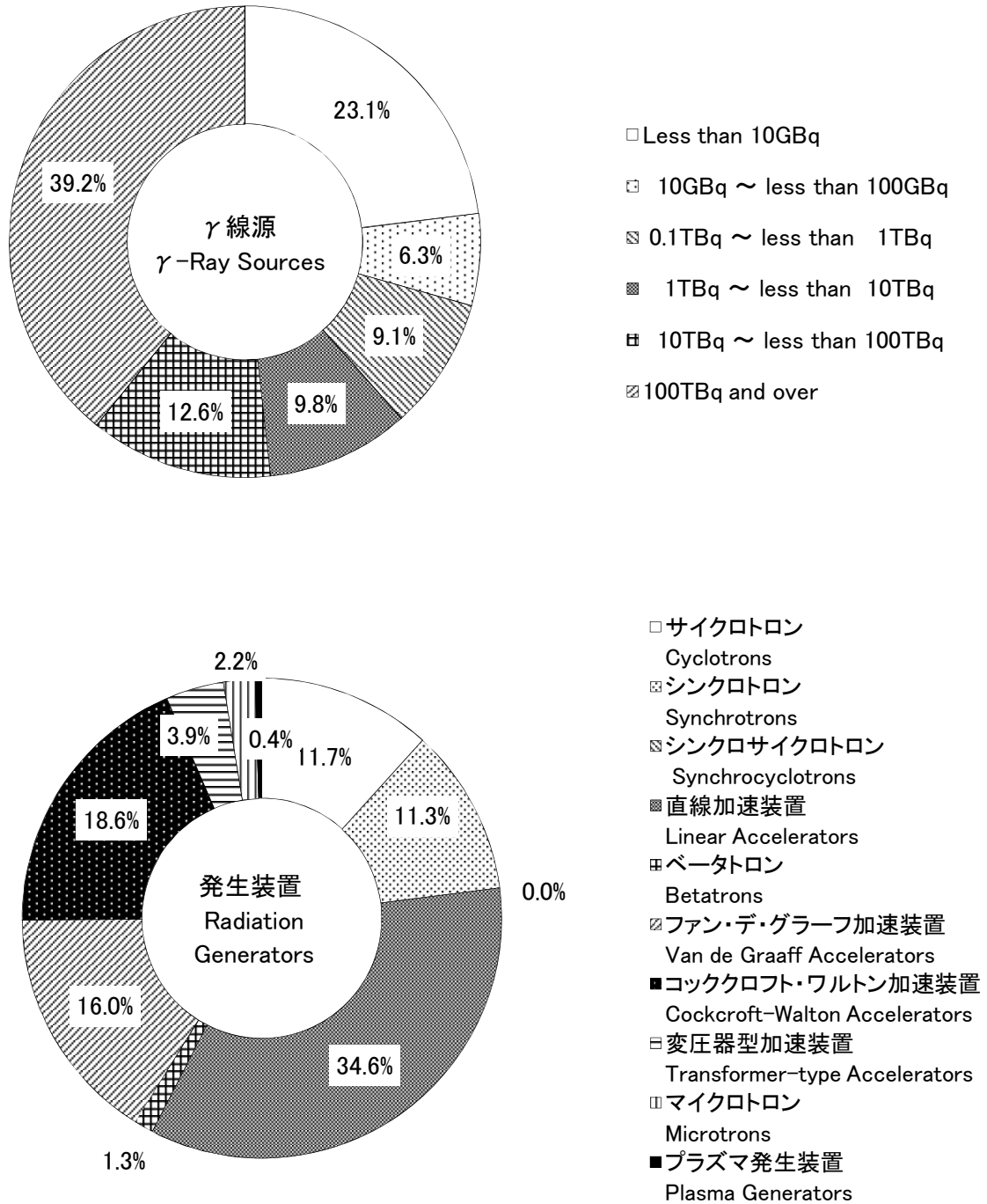
Fig.6 Usage of Radiation in Licensed Universities and Research Institutions (as of March 31, 2013)



2.2.3 照射装置の使用許可・届出台数(放射能別, 発生装置の種類別, 分野別)
 Number of γ -Ray Irradiation Facilities and Radiation Generators in Use
 in Educational Institutions and Research Institutions (as of March 31, 2013)

| 放射能, 装置 Activity or Apparatus | 分野 Fields | 総数 Total | 構成比 (Ratio%) | 教育機関 Educational Institutions | 研究機関 Research Institutions |
|--|--------------|-------------|-----------------|-------------------------------------|----------------------------------|
| γ線源 (総数 Total) γ-Ray Sources (構成比 Ratio%) | | 143 | 100% | 43 30.1 | 100 69.9 |
| Less than 10GBq | | 33 | 23.1 | 1 | 32 |
| 10GBq ~ less than 100GBq | | 9 | 6.3 | - | 9 |
| 0.1TBq ~ less than 1TBq | | 13 | 9.1 | 4 | 9 |
| 1TBq ~ less than 10TBq | | 14 | 9.8 | 2 | 12 |
| 10TBq ~ less than 100TBq | | 18 | 12.6 | 11 | 7 |
| 100TBq and over | | 56 | 39.2 | 25 | 31 |
| 発生装置 (総数 Total) Radiation Generators (構成比 Ratio%) | | 231 | 100% | 66 28.6 | 165 71.4 |
| サイクロトロン Cyclotrons | | 27 | 11.7 | 4 | 23 |
| シンクロトロン Synchrotrons | | 26 | 11.3 | 3 | 23 |
| シンクロサイクロトロン Synchrocyclotrons | | - | - | - | - |
| 直線加速装置 Linear Accelerators | | 80 | 34.6 | 25 | 55 |
| ベータトロン Betatrons | | 3 | 1.3 | 1 | 2 |
| ファン・デ・グラーフ加速装置 Van de Graaff Accelerators | | 37 | 16.0 | 14 | 23 |
| コッククロフト・ワルトン加速装置 Cockcroft-Walton Accelerators | | 43 | 18.6 | 16 | 27 |
| 変圧器型加速装置 Transformer-type Accelerators | | 9 | 3.9 | - | 9 |
| マイクロトロン Microtrons | | 5 | 2.2 | 3 | 2 |
| プラズマ発生装置 Plasma Generators | | 1 | 0.4 | - | 1 |

図7 教育・研究機関における照射装置の構成比
 Fig.7 Number of γ -Ray Irradiation Facilities and Radiation Generators
 in Use in Educational Institutions and Research Institutions
 (as of March 31,2013)



2.2.4 非破壊検査装置およびおもな装備機器等の使用許可・届出台数(機器の種類別, 核種別)
 Number of γ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Educational Institutions and
 Research Institutions by Nuclide (as of March 31, 2013)

| 機器 Appa- ratus 核種 Nuclides | 総数 Total | | 非破壊 検査装置 Radiography | 厚さ計 Thickness Gauges | レベル計 Level Gauges | 密度計 Density Gauges | 水分計 Moisture Gauges | 蛍光X線 分析装置 X-ray Fluorescence Spectrometer | ガスクロマ ト グラフ Gas Chromato- graph | 硫黄 分析計 Sulfur Meters | 静電除去 装置 Electric Static Eliminator | ガス 検知器 Gas Detector | その他 Others |
|--|-----------------|------|--------------------------------|----------------------------|-------------------------|--------------------------|---------------------------|---|--|-------------------------------|--|------------------------------|---------------|
| | 構成比 (Ratio%) | | | | | | | | | | | | |
| 総数 Total | 25,183 | 100% | 6 | 3 | - | 9 | - | 16 | 344 | - | 1 | 1 | 24,803 |
| ³ H | 1,039 | 4.1 | - | - | - | - | - | - | 1 | - | - | - | 1,038 |
| ⁵⁵ Fe | 180 | 0.7 | - | - | - | - | - | 4 | - | - | - | - | 176 |
| ⁶⁰ Co | 288 | 1.1 | 3 | - | - | - | - | - | - | - | - | - | 285 |
| ⁶³ Ni | 436 | 1.7 | - | - | - | - | - | - | 343 | - | - | 1 | 92 |
| ⁸⁵ Kr | 16 | 0.1 | - | 1 | - | - | - | - | - | - | - | - | 15 |
| ¹³⁷ Cs | 202 | 0.8 | 1 | - | - | 8 | - | - | - | - | - | - | 193 |
| ¹⁴⁷ Pm | 174 | 0.7 | - | 1 | - | - | - | - | - | - | - | - | 173 |
| ¹⁹² Ir | 1 | 0.0 | 1 | - | - | - | - | - | - | - | - | - | - |
| ²¹⁰ Po | 358 | 1.4 | - | - | - | - | - | - | - | - | 1 | - | 357 |
| ²⁴¹ Am | 264 | 1.0 | - | - | - | 1 | - | 6 | - | - | - | - | 257 |
| Others | 22,225 | 88.3 | 1 | 1 | - | - | - | 6 | - | - | - | - | 22,217 |

2.3 民間企業

Private Companies

2.3.1 使用許可・届出事業所数(業種別)

Number of Licensed Private Companies by Industry and by License (as of March 31, 2013)

| 業種 Category of Industry | 許可・届出の別 Category of License | 総数 Total | | 許可 Permitted | 届出 Reported |
|--|--------------------------------|-------------|-----------------|-----------------|----------------|
| | | | 構成比 Ratio(%) | | |
| 総数 Total | | 1,057 | 100% | 805 | 252 |
| 鉱業 Mining | | 4 | 0.4 | 3 | 1 |
| 建設 Construction | | 8 | 0.8 | 3 | 5 |
| 食料品 Food | | 6 | 0.6 | 1 | 5 |
| 繊維 Textiles | | 33 | 3.1 | 32 | 1 |
| パルプ・紙 Pulp and Paper | | 148 | 14.0 | 147 | 1 |
| 化学 Chemicals | | 219 | 20.7 | 198 | 21 |
| 石油・石炭製品 Petroleum and Coal | | 32 | 3.0 | 32 | - |
| ゴム製品 Rubber | | 18 | 1.7 | 18 | - |
| ガラス・土石製品 Glass, Stone and Clay | | 14 | 1.3 | 12 | 2 |
| 鉄鋼 Iron and Steel | | 67 | 6.3 | 64 | 3 |
| 非鉄金属 Nonferrous Metals | | 11 | 1.0 | 11 | - |
| 金属製品 Fabricated Metals | | 22 | 2.1 | 18 | 4 |
| 機械 Machinery | | 38 | 3.6 | 27 | 11 |
| 電気機器 Electric Machines | | 70 | 6.6 | 53 | 17 |
| 輸送用機器 Transportation Equipment | | 16 | 1.5 | 13 | 3 |
| 精密機器 Precising Machinery | | 45 | 4.3 | 27 | 18 |
| その他製造 Miscellaneous Manufacturing | | 30 | 2.8 | 28 | 2 |
| 電機・ガス Electricity and Gas | | 18 | 1.7 | 18 | - |
| 非破壊検査 Nondestructive Inspection Service | | 50 | 4.7 | 50 | - |
| その他計測サービス Other Inspection Services | | 136 | 12.9 | 20 | 116 |
| その他 Others | | 72 | 6.8 | 30 | 42 |

2.3.2 使用許可・届出事業所数（業種別，利用形態別）

Number of Licensed Private Companies by Industry and by Usage (as of March 31, 2013)

| 業種 Category of Industry | 利用形態 Usage | 総数 Total | 非のみ US only | 密のみ S only | 発のみ G only | 非・密 US&S | 非・発 US&G | 密・発 S&G | 非・密 発 US,S&G | 延 べ 計 Total | | |
|--|---------------|-------------|----------------|---------------|---------------|-------------|-------------|------------|--------------------|-------------|--------|--------|
| | | | | | | | | | | 非 US | 密 S | 発 G |
| 総 数 Total | | 1,057 | 45 | 908 | 31 | 24 | 10 | 32 | 7 | 86 | 971 | 80 |
| 構 成 比 Ratio(%) | | 100% | 4.3 | 85.9 | 2.9 | 2.3 | 0.9 | 3.0 | 0.7 | | | |
| 鉱 業 Mining | | 4 | - | 4 | - | - | - | - | - | - | 4 | - |
| 建 設 Construction | | 8 | - | 8 | - | - | - | - | - | - | 8 | - |
| 食 料 品 Food | | 6 | 1 | 5 | - | - | - | - | - | 1 | 5 | - |
| 織 維 Textiles | | 33 | 1 | 30 | 1 | - | - | 1 | - | 1 | 31 | 2 |
| パルプ・紙 Pulp and Paper | | 148 | - | 148 | - | - | - | - | - | - | 148 | - |
| 化 学 Chemicals | | 219 | 28 | 166 | 5 | 4 | 9 | 3 | 4 | 45 | 177 | 21 |
| 石油・石炭製品 Petroleum and Coal | | 32 | - | 31 | - | - | - | 1 | - | - | 32 | 1 |
| ゴ ム 製 品 Rubber | | 18 | - | 18 | - | - | - | - | - | - | 18 | - |
| ガラス・土石製品 Glass, Stone and Clay | | 14 | - | 14 | - | - | - | - | - | - | 14 | - |
| 鉄 鋼 Iron and Steel | | 67 | - | 61 | 1 | 1 | - | 4 | - | 1 | 66 | 5 |
| 非 鉄 金 属 Nonferrous Metals | | 11 | - | 10 | 1 | - | - | - | - | - | 10 | 1 |
| 金 属 製 品 Fabricated Metals | | 22 | - | 19 | 1 | 1 | - | 1 | - | 1 | 21 | 2 |
| 機 械 Machinery | | 38 | - | 30 | 3 | - | 1 | 4 | - | 1 | 34 | 8 |
| 電 気 機 器 Electric Machines | | 70 | 5 | 52 | 4 | 5 | - | 3 | 1 | 11 | 61 | 8 |
| 輸 送 用 機 器 Transportation Equipment | | 16 | - | 11 | 3 | - | - | 2 | - | - | 13 | 5 |
| 精 密 機 器 Precising Machinery | | 45 | 3 | 34 | 2 | 3 | - | 3 | - | 6 | 40 | 5 |
| そ の 他 製 造 Miscellaneous Manufacturing | | 30 | 1 | 26 | 3 | - | - | - | - | 1 | 26 | 3 |
| 電 機 ・ ガ ス Electricity and Gas | | 18 | - | 13 | - | 5 | - | - | - | 5 | 18 | - |
| 非 破 壊 検 査 Nondestructive Inspection Service | | 50 | - | 46 | - | - | - | 4 | - | - | 50 | 4 |
| そ の 他 計 測 サービス Other Inspection Services | | 136 | 5 | 126 | 1 | 1 | - | 2 | 1 | 7 | 130 | 4 |
| そ の 他 Others | | 72 | 1 | 56 | 6 | 4 | - | 4 | 1 | 6 | 65 | 11 |

2.3.3 非破壊検査装置およびおもな装備機器等の使用許可・届出事業所数

その(1) 業種別、機器の種類別

Number of Licensed Private Companies Using γ -Ray Radiography Apparatus and Major Isotope Gauges by Industry
(as of March 31, 2013)

| 業種 Category of Industry | 非破壊検査装置 Radiography <A&D> | | 厚さ計 Thickness Gauges <A&D> | | レベル計 Level Gauges <A&D> | | 密度計 Density Gauges <A&D> | | 水分計 Moisture Gauges <A&D> | | 蛍光X線分析装置 X-ray Fluorescence Spectrometer <A&D> | | スラブ位置検出器 Slab Position Detector <A&D> | | ガスクロマトグラフ Gas Chromatograph <A&D> | | 硫黄分析計 Sulfur Meters <A&D> | | たばこ量目制御装置 Cigarette Weight controller <A&D> | | 静電除去装置 Electric Static Eliminator <A&D> | | ガス検知器 Gas Detector <A&D> | | その他 Others <A&D> | |
|--|---------------------------------|------------------------|----------------------------------|----------------------|-------------------------------|------------------------|---|------------------------------------|---------------------------------|------------------------|--|--------------------------------------|---|---------------|---|-----|---------------------------------|-----|---|---|---|----|--------------------------------|----|------------------------|--------|
| | 機器 Apparatus | 非破壊検査装置 Radiography | 厚さ計 Thickness Gauges | レベル計 Level Gauges | 密度計 Density Gauges | 水分計 Moisture Gauges | 蛍光X線分析装置 X-ray Fluorescence Spectrometer | スラブ位置検出器 Slab Position Detector | ガスクロマトグラフ Gas Chromatograph | 硫黄分析計 Sulfur Meters | たばこ量目制御装置 Cigarette Weight controller | 静電除去装置 Electric Static Eliminator | ガス検知器 Gas Detector | その他 Others | | | | | | | | | | | | |
| 総数 Total | 107 | 970 | 401 | 2,617 | 149 | 1,938 | 52 | 290 | 15 | 74 | 13 | 42 | 5 | 31 | 185 | 448 | 25 | 108 | 0 | 0 | 5 | 12 | 3 | 12 | 167 | 15,600 |
| 鉱業 Mining | - | - | 1 | 8 | 1 | 1 | 1 | 2 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | 1 | 3 |
| 建設 Construction | - | - | - | - | 2 | 5 | 1 | 1 | - | - | - | - | - | - | 5 | 6 | - | - | - | - | - | - | - | - | 1 | 2 |
| 食料品 Food | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | 6 | - | - | - | - | - | - | - | - | - | - |
| 繊維 Textiles | - | - | 20 | 131 | 11 | 155 | 1 | 6 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - |
| パルプ・紙 Pulp and Paper | - | - | 141 | 762 | 33 | 631 | 18 | 58 | 1 | 1 | 1 | 1 | - | - | 7 | 7 | 1 | 1 | - | - | 1 | 3 | - | - | 2 | 3 |
| 化学 Chemicals | 2 | 8 | 98 | 420 | 45 | 607 | 15 | 36 | - | - | 1 | 2 | - | - | 22 | 40 | 1 | 1 | - | - | - | - | - | - | 10 | 388 |
| 石油・石炭製品 Petroleum and Coal | 1 | 1 | 2 | 15 | 22 | 232 | 4 | 16 | - | - | 1 | 1 | - | - | - | - | 20 | 94 | - | - | - | - | - | - | 2 | 6 |
| ゴム製品 Rubber | - | - | 17 | 40 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 4 |
| ガラス・土石製品 Glass, Stone and Clay | - | - | 6 | 12 | 4 | 25 | 1 | 1 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | 1 | 2 | - | - | 1 | 1 |
| 鉄鋼 Iron and Steel | 11 | 24 | 43 | 634 | 17 | 120 | 4 | 7 | 11 | 63 | - | - | 5 | 31 | 3 | 4 | 1 | 2 | - | - | - | - | 1 | 6 | 9 | 114 |
| 非鉄金属 Nonferrous Metals | 2 | 2 | 6 | 25 | 1 | 2 | 1 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 金属製品 Fabricated Metals | 7 | 11 | 8 | 59 | 2 | 13 | - | - | 1 | 7 | 3 | 4 | - | - | 1 | 2 | - | - | - | - | - | - | - | - | 2 | 7 |
| 機械 Machinery | 13 | 69 | 5 | 15 | 1 | 7 | 1 | 1 | - | - | 2 | 16 | - | - | 5 | 9 | - | - | - | - | - | - | - | - | 9 | 2024 |
| 電気機器 Electric Machines | 1 | 3 | 30 | 393 | 2 | 93 | 1 | 3 | 1 | 2 | 2 | 6 | - | - | 3 | 3 | 2 | 10 | - | - | - | - | - | - | 32 | 1129 |
| 輸送用機器 Transportation Equipment | 4 | 10 | 1 | 2 | 1 | 32 | 1 | 10 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - | 6 | 148 |
| 精密機器 Precising Machinery | 3 | 6 | 8 | 62 | - | - | - | - | - | - | - | - | - | - | 9 | 32 | - | - | - | - | 2 | 4 | - | - | 16 | 493 |
| その他製造 Miscellaneous Manufacturing | 2 | 8 | 15 | 39 | 2 | 4 | 1 | 1 | - | - | - | - | - | - | 1 | 1 | - | - | - | - | 1 | 3 | - | - | 5 | 29 |
| 電機・ガス Electricity and Gas | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 2 | - | - | - | - | - | - | 1 | 4 | 17 | 688 |
| 非破壊検査 Nondestructive Inspection | 50 | 776 | - | - | - | - | - | - | - | - | 2 | 10 | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 5 |
| その他計測サービス Other Inspection Services | 9 | 23 | - | - | 1 | 2 | - | - | - | - | 1 | 2 | - | - | 112 | 223 | - | - | - | - | - | - | - | - | 9 | 23 |
| その他 Others | 2 | 29 | - | - | 4 | 9 | 2 | 142 | 1 | 1 | - | - | - | - | 7 | 109 | - | - | - | - | - | - | 1 | 2 | 43 | 10533 |

注1 <A&D>欄は許可・届出台数

Note:1 The figure in <A&D> shows the number of apparatus or gauges.

2.3.3 非破壊検査装置およびおもな装備機器等の使用許可・届出事業所数

その(2) 許可・届出台数別, 機器の種類別

Number of Licensed Private Companies Using γ -Ray Radiography Apparatus and Major Isotope Gauges by Number of Possessions (as of March 31, 2013)

| 台数 Number of Apparatus | 機器 Apparatus | 非破壊 検査装置 | 厚さ計 | レベル計 | 密度計 | 水分計 | 蛍光X線 分析装置 | スラブ位置 検出器 | ガス クロマトグラフ | 硫黄 分析計 | たばこ量目 制御装置 | 静電除去 装置 | ガス 検知器 | その他 |
|------------------------------|------------------|---------------------|-----------------|-------------------|--------------------|---------------------------------------|------------------------------|---------------------------|------------------|-----------------------------------|----------------------------------|-----------------|-----------|------------|
| | Radio- graphy | Thickness Gauges | Level Gauges | Density Gauges | Moisture Gauges | X-ray Fluorescence Spectrometer | Slab Position Detector | Gas Chromato- graph | Sulfur Meters | Cigarette Weight controller | Electric Static Eliminator | Gas Detector | Others | |
| 総 数 Total | | 107 | 401 | 149 | 52 | 15 | 13 | 5 | 185 | 25 | - | 5 | 3 | 167 |
| 1 | | 30 | 79 | 13 | 21 | 3 | 4 | 2 | 100 | 5 | - | 1 | - | 33 |
| 2 ~ 5 | | 43 | 211 | 55 | 20 | 5 | 6 | - | 82 | 12 | - | 4 | 2 | 45 |
| 6 ~ 10 | | 15 | 57 | 41 | 9 | 7 | 3 | 2 | 1 | 6 | - | - | 1 | 22 |
| 11 ~ 20 | | 5 | 27 | 25 | - | - | - | 1 | 1 | 2 | - | - | - | 19 |
| 21 and over | | 14 | 27 | 15 | 2 | - | - | - | 1 | - | - | - | - | 48 |

2.3.4 非破壊検査装置およびおもな装備機器等の使用許可・届出台数(機器の種類別, 核種別)

Number of γ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Private Companies by Nuclide (as of March 31, 2013)

| 核種 Nuclides | 機器 Apparatus | 総数 Total | 非破壊 検査装置 | 厚さ計 | レベル計 | 密度計 | 水分計 | 蛍光X線 分析装置 | スラブ位置 検出器 | ガス クロマトグラフ | 硫黄 分析計 | たばこ量目 制御装置 | 静電除去 装置 | ガス 検知器 | その他 | |
|----------------------------------|-----------------|------------------|---------------------|-----------------|-------------------|--------------------|---------------------------------------|------------------------------|---------------------------|------------------|-----------------------------------|----------------------------------|-----------------|-----------|-----------|---------------|
| | 構成比 (Ratio%) | Radio- graphy | Thickness Gauges | Level Gauges | Density Gauges | Moisture Gauges | X-ray Fluorescence Spectrometer | Slab Position Detector | Gas Chromato- graph | Sulfur Meters | Cigarette Weight controller | Electric Static Eliminator | Gas Detector | Others | | |
| 総数 Total | | 22,142 | 1 | 970 | 2,617 | 1,938 | 290 | 74 | 42 | 31 | 448 | 108 | - | 12 | 12 | 15,600 |
| ³ H | | 9,236 | 41.7 | - | - | - | - | - | - | - | 2 | - | - | - | - | 9,234 |
| ⁵⁵ Fe | | 153 | 0.7 | - | 4 | - | - | 27 | - | - | - | - | - | - | - | 122 |
| ⁶⁰ Co | | 934 | 4.2 | 129 | - | 484 | - | - | 20 | - | - | - | - | - | - | 301 |
| ⁶³ Ni | | 490 | 2.2 | - | - | - | - | - | - | 446 | - | - | - | 12 | - | 32 |
| ⁸⁵ Kr | | 4,396 | 19.9 | - | 1,343 | - | 3 | - | - | - | - | - | - | - | - | 3,050 |
| ⁹⁰ Sr | | 160 | 0.7 | - | 157 | - | 3 | - | - | - | - | - | - | - | - | - |
| ¹³⁷ Cs | | 2,313 | 10.4 | 21 | 274 | 1,454 | 117 | - | 11 | - | - | - | - | - | - | 436 |
| ¹⁴⁷ Pm | | 284 | 1.3 | - | 197 | - | - | - | - | - | - | - | - | - | - | 87 |
| ¹⁹² Ir | | 716 | 3.2 | 716 | - | - | - | - | - | - | - | - | - | - | - | - |
| ²⁰⁴ Tl | | 1 | 0.0 | - | 1 | - | - | - | - | - | - | - | - | - | - | - |
| ²¹⁰ Po | | 14 | 0.1 | - | - | - | - | - | - | - | - | - | 8 | - | - | 6 |
| ²²⁶ Ra | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ²⁴¹ Am | | 1,761 | 8.0 | 3 | 611 | - | 167 | 1 | 1 | - | 108 | - | - | - | - | 870 |
| ²⁴¹ Am/ ^{Be} | | 66 | 0.3 | - | - | - | - | 66 | - | - | - | - | - | - | - | - |
| ²⁵² Cf | | 4 | 0.0 | - | - | - | - | 4 | - | - | - | - | - | - | - | - |
| Other | | 1,614 | 7.3 | 101 | 30 | - | - | 3 | 14 | - | - | - | 4 | - | - | 1,462 |

2.3.5 非破壊検査装置およびおもな装備機器等の使用許可・届出台数
(機器の種類別, 都道府県別)

Number of γ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Private Companies
by Prefecture (as of March 31, 2013)

| 都道府県 Prefecture | 機器 Apparatus | 非破壊 検査装置 | 厚さ計 | レベル計 | 密度計 | 水分計 | 蛍光X線 分析装置 | スラブ位置 検出器 | ガス クロマトグラ フ | 硫黄分析計 | たばこ量 目 制御装置 | 静電除去 装置 | ガス 検知器 | その他 |
|--------------------|------------------|---------------------|-----------------|-------------------|--------------------|---------------------------------------|------------------------------|---------------------------|-------------------|-----------------------------------|----------------------------------|-----------------|------------|-------|
| | Radio- graphy | Thickness Gauges | Level Gauges | Density Gauges | Moisture Gauges | X-ray Fluorescence Spectrometer | Slab Position Detector | Gas Chromato- graph | Sulfur Meters | Cigarette Weight controller | Electric Static Eliminator | Gas Detector | Others | |
| | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> | <I&O> |
| 全 国 Total | 970 107 | 2,617 401 | 1,938 149 | 290 52 | 74 15 | 42 13 | 31 5 | 448 185 | 108 25 | 0 0 | 12 5 | 12 3 | 15,600 167 | |
| 100 北 海 道 | 7 4 | 68 9 | 64 9 | 15 3 | - - | - - | - - | 8 6 | 1 1 | - - | - - | - - | 59 3 | |
| 201 青 森 | 22 1 | 29 1 | 13 2 | - - | - - | - - | - - | 1 1 | - - | - - | - - | - - | 35 4 | |
| 202 岩 手 | - - | 16 5 | 4 1 | - - | - - | 2 1 | - - | 1 1 | - - | - - | - - | - - | - - | |
| 203 宮 城 | 3 1 | 33 4 | 22 3 | - - | - - | 1 1 | - - | - - | - - | - - | - - | - - | 9 2 | |
| 204 秋 田 | 2 2 | 8 1 | 17 2 | 5 1 | 1 1 | - - | - - | 5 1 | - - | - - | - - | - - | - - | |
| 205 山 形 | - - | 18 2 | - - | - - | - - | - - | - - | 6 4 | - - | - - | 3 1 | - - | - - | |
| 206 福 島 | 4 2 | 94 16 | 37 2 | - - | - - | - - | - - | 7 5 | - - | - - | - - | - - | 162 5 | |
| 301 茨 城 | 30 5 | 127 25 | 105 8 | 4 2 | 7 1 | - - | - - | 3 3 | 3 1 | - - | - - | - - | 121 16 | |
| 302 栃 木 | - - | 48 12 | - - | - - | - - | - - | - - | 6 4 | - - | - - | - - | - - | 82 3 | |
| 303 群 馬 | 1 1 | 4 2 | 4 1 | - - | - - | - - | - - | 3 2 | - - | - - | - - | - - | - - | |
| 304 埼 玉 | 2 1 | 88 21 | - - | 6 1 | - - | 1 1 | - - | 10 7 | - - | - - | 6 2 | - - | 306 8 | |
| 305 千 葉 | 158 7 | 130 16 | 133 13 | 71 1 | 7 2 | 8 1 | - - | 12 7 | 23 4 | - - | - - | - - | 5,093 9 | |
| 306 東 京 | 2 1 | 234 8 | 97 3 | 74 2 | 2 1 | 6 2 | - - | 141 18 | 10 2 | - - | 3 2 | - - | 6,834 24 | |
| 307 神 奈 川 | 142 14 | 98 17 | 123 11 | 17 5 | 5 1 | 3 2 | 7 1 | 39 19 | 6 4 | - - | - - | - - | 350 12 | |
| 401 新 潟 | 7 5 | 55 9 | 9 2 | 2 1 | - - | - - | - - | 8 4 | - - | - - | - - | - - | 86 5 | |
| 402 富 山 | 5 2 | 20 6 | 24 5 | 14 2 | - - | - - | - - | 5 4 | - - | - - | - - | - - | - - | |
| 403 石 川 | - - | 6 3 | - - | - - | - - | 6 1 | - - | 3 3 | - - | - - | - - | - - | 19 2 | |
| 404 福 井 | - - | 37 7 | 89 3 | - - | - - | - - | - - | 6 3 | - - | - - | - - | 4 1 | 251 4 | |
| 405 山 梨 | 2 1 | 8 1 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | 2 1 | |
| 406 長 野 | 2 1 | 5 3 | - - | - - | - - | - - | - - | 6 3 | - - | - - | - - | - - | 1 1 | |
| 407 岐 阜 | - - | 76 16 | 5 1 | 1 1 | - - | - - | - - | 1 1 | - - | - - | - - | - - | 208 2 | |
| 408 静 岡 | 2 1 | 180 41 | 33 4 | 11 3 | - - | - - | - - | 12 9 | - - | - - | - - | - - | 32 4 | |
| 409 愛 知 | 17 4 | 251 20 | 56 11 | 5 4 | 8 1 | - - | - - | 29 19 | 2 1 | - - | - - | - - | 1,030 7 | |
| 501 三 重 | 7 2 | 41 12 | 111 9 | 1 1 | - - | - - | - - | 4 2 | 17 2 | - - | - - | - - | 12 3 | |
| 502 滋 賀 | - - | 75 18 | - - | - - | - - | - - | - - | 4 2 | - - | - - | - - | - - | 38 1 | |
| 503 京 都 | 2 1 | 38 6 | 36 1 | - - | - - | - - | - - | 22 5 | - - | - - | - - | - - | 8 4 | |
| 504 大 阪 | 217 9 | 80 21 | 19 3 | 19 4 | - - | 10 1 | - - | 27 14 | 9 3 | - - | - - | 2 1 | 181 12 | |
| 505 兵 庫 | 50 13 | 173 19 | 11 3 | 5 3 | 3 2 | - - | 10 3 | 26 11 | - - | - - | - - | - - | 24 9 | |
| 506 奈 良 | - - | 6 3 | - - | - - | - - | - - | - - | 1 1 | - - | - - | - - | - - | - - | |
| 507 和 歌 山 | 1 1 | 17 3 | - - | - - | 9 1 | - - | - - | - - | - - | - - | - - | - - | 13 1 | |
| 601 鳥 取 | 1 1 | 32 3 | 2 1 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | |
| 602 島 根 | - - | 28 4 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | 32 1 | |
| 603 岡 山 | 2 1 | 116 12 | 176 12 | 3 3 | 6 1 | 2 1 | - - | 4 1 | 12 3 | - - | - - | - - | 43 4 | |
| 604 広 島 | 138 8 | 86 8 | 30 6 | 8 4 | 14 2 | 2 1 | - - | 8 5 | - - | - - | - - | - - | 85 5 | |
| 605 山 口 | 9 3 | 52 5 | 92 9 | 1 1 | - - | - - | - - | 4 3 | 11 2 | - - | - - | - - | 14 1 | |
| 606 徳 島 | - - | 52 8 | 22 2 | 2 2 | - - | - - | - - | 1 1 | - - | - - | - - | - - | - - | |
| 607 香 川 | 1 1 | 10 4 | - - | 2 1 | - - | - - | - - | 4 1 | 12 1 | - - | - - | - - | 16 1 | |
| 608 愛 媛 | 1 1 | 71 9 | 472 10 | 10 1 | - - | - - | - - | 3 3 | - - | - - | - - | - - | 29 3 | |
| 609 高 知 | - - | 10 6 | - - | - - | - - | - - | - - | 2 1 | - - | - - | - - | - - | - - | |
| 701 福 岡 | 78 4 | 36 5 | 17 4 | - - | 2 1 | 1 1 | - - | 9 4 | - - | - - | - - | 6 1 | 44 4 | |
| 702 佐 賀 | - - | 4 2 | - - | - - | - - | - - | - - | - - | - - | - - | - - | - - | 101 1 | |
| 703 長 崎 | 51 8 | - - | - - | - - | - - | - - | - - | 10 3 | - - | - - | - - | - - | 39 1 | |
| 704 熊 本 | 4 1 | 24 3 | 10 1 | 1 1 | - - | - - | - - | 5 2 | - - | - - | - - | - - | - - | |
| 705 大 分 | - - | 7 2 | 45 4 | 9 2 | 10 1 | - - | 14 1 | - - | 2 1 | - - | - - | - - | 21 2 | |
| 706 宮 崎 | - - | 17 2 | 56 2 | 3 2 | - - | - - | - - | - - | - - | - - | - - | - - | - - | |
| 707 鹿 児 島 | - - | 9 1 | 4 1 | 1 1 | - - | - - | - - | 1 1 | - - | - - | - - | - - | 220 2 | |
| 708 沖 縄 | - - | - - | - - | - - | - - | - - | - - | 1 1 | - - | - - | - - | - - | - - | |

注1 < I&O > 欄は許可・届出事業所数

Note:1 < I&O > shows the number of Private Companies using apparatus or gauges.

2.3.6 γ 線照射装置の使用許可・届出台数(放射能別)

Number of γ -Ray Irradiation Facilities in Use in Private Companies
(as of March 31, 2013)

| 放射能 Activity 台数 Number of γ -Ray Irradiation Facilities | 総数 Total | less than 10GBq | 10GBq~ less than 0.1TBq | 0.1TBq~ less than 1TBq | 1TBq~ less than 10TBq | 10TBq~ less than 100TBq | 100TBq and over |
|---|-------------|--------------------|-------------------------------|------------------------------|-----------------------------|-------------------------------|--------------------|
| | | | | | | | |
| 許可・届出台数 | 98 | 19 | 25 | 4 | 26 | 9 | 15 |
| 〈 I&O 〉 | | 10 | 17 | 4 | 19 | 5 | 9 |

注 〈 I&O 〉 欄は許可・届出事業所数

Note: 〈 I&O 〉 shows the number of licensed Private Companies

2.4 その他の機関

Other Organizations

2.4.1 非破壊検査装置およびおもな装備機器等の使用許可・届出台数(機器の種類別, 核種別)

Number of γ -Ray Radiography Apparatus and Major Isotope Gauges in Use in Other Organizations by Nuclide (as of March 31, 2013)

| 核種 Nuclides | 機器 Apparatus | | 非破壊 検査装置 Radio- graphy | 厚さ計 Thickness Gauges | レベル計 Level Gauges | 密度計 Density Gauges | 水分計 Moisture Gauges | 蛍光X線 分析装置 X-ray Fluorescence Spectrometer | スラブ位置 検出器 Slab Position Detector | ガス クロマト グラフ Gas Chromato- graph | 硫黄 分析計 Sulfur Meters | たばこ量目 制御装置 Cigarette Weight controller | 静電除去 装置 Electric Static Eliminator | ガス 検知器 Gas Detector | その他 Others |
|---------------------|-----------------|-----------------|---------------------------------|----------------------------|-------------------------|--------------------------|---------------------------|---|--|--|-------------------------------|--|--|------------------------------|---------------|
| | 総数 Total | 構成比 (Ratio%) | | | | | | | | | | | | | |
| 総数 Total | 7,447 | 100% | - | 3 | - | - | - | - | - | 187 | - | - | - | 2 | 7,255 |
| ³ H | 830 | 11.1 | - | - | - | - | - | - | - | - | - | - | - | - | 830 |
| ⁵⁵ Fe | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ⁶⁰ Co | 25 | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | 25 |
| ⁶³ Ni | 217 | 2.9 | - | - | - | - | - | - | - | 187 | - | - | - | 2 | 28 |
| ⁸⁵ Kr | 6,010 | 80.7 | - | 3 | - | - | - | - | - | - | - | - | - | - | 6,007 |
| ¹³⁷ Cs | 140 | 1.9 | - | - | - | - | - | - | - | - | - | - | - | - | 140 |
| ¹⁴⁷ Pm | 40 | 0.5 | - | - | - | - | - | - | - | - | - | - | - | - | 40 |
| ¹⁹² Ir | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ²¹⁰ Po | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ²⁴¹ Am | 6 | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | 6 |
| Others | 179 | 2.4 | - | - | - | - | - | - | - | - | - | - | - | - | 179 |

2.4.2 γ 線照射装置の使用許可・届出台数(放射能別)

Number of γ -Ray Irradiation Facilities in Use in Other Organizations (as of March 31, 2013)

| 台数 Number of γ -Ray Irradiation Facilities | 放射能 Activity | 総数 Total | less than 10GBq | 10GBq~ less than 0.1TBq | 0.1TBq~ less than 1TBq | 1TBq~ less than 10TBq | 10TBq~ less than 100TBq | 100TBq and over |
|--|-----------------|-------------|--------------------|-------------------------------|------------------------------|-----------------------------|-------------------------------|--------------------|
| | | | | | | | | |
| 許可・届出台数 < I&O > | | 21 | 8 | 5 | 1 | 2 | 2 | 3 |
| | | | 6 | 4 | 1 | 2 | 2 | 3 |

注 < I&O > 欄は許可・届出事業所数

Note: < I&O > shows the number of licensed Private Companies and other organizations.

3 アイソトープの流通状況 SUPPLY OF RADIOISOTOPES

3.1 おもな非密封アイソトープの供給量

Amounts of Major Unsealed Radioisotopes Supplied

3.1.1 おもな非密封アイソトープの供給量の推移(核種別, 年度別)

Amounts of Major Unsealed Radioisotopes[§] Supplied in Fiscal 2008-2012

(単位Unit:MBq)

| 年度 Fiscal Year | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|-----------|-----------|-----------|-----------|-----------|
| 核種 Nuclides | | | | | |
| ³ H Total | 384,609 | 391,930 | 299,557 | 215,688 | 230,198 |
| (標識化合物 ³ H-Labeled compound) | 380,109 | 206,927 | 262,556 | 215,687 | 230,197 |
| ¹⁴ C Total | 280,800 | 258,765 | 238,606 | 66,583 | 77,391 |
| (標識化合物 ¹⁴ C-Labeled compound) | 280,799 | 258,763 | 238,606 | 66,582 | 77,391 |
| ¹⁸ F | 33,855 | 38,480 | 46,535 | 44,770 | 29,970 |
| ²² Na | 78 | 367 | 286 | 80 | 122 |
| ²⁴ Na | 63 | 33 | 44 | - | 0 |
| ³² P Total | 199,331 | 154,511 | 132,151 | 119,807 | 113,024 |
| (標識化合物 ³² P-Labeled compound) | 144,125 | 112,173 | 91,397 | 81,140 | 69,264 |
| ³³ P Total | 37,798 | 21,203 | 13,356 | 13,622 | 12,230 |
| (標識化合物 ³³ P-Labeled compound) | 30,644 | 16,190 | 6,044 | 4,039 | 4,220 |
| ³⁵ S Total | 115,164 | 98,569 | 85,841 | 70,487 | 56,649 |
| (標識化合物 ³⁵ S-Labeled compound) | 107,800 | 91,243 | 82,877 | 67,342 | 53,134 |
| ⁴⁵ Ca | 1,813 | 1,999 | 1,277 | 888 | 1,222 |
| ⁵¹ Cr | 61,671 | 52,902 | 45,780 | 35,992 | 31,943 |
| ⁵⁴ Mn | 155 | 124 | 90 | 26 | 108 |
| ⁵⁵ Fe | 1,111 | 370 | 740 | 629 | 335 |
| ⁵⁷ Co | 118 | 246 | 171 | 238 | 168 |
| ⁵⁹ Fe | 530 | 465 | 394 | 373 | 298 |
| ⁶⁰ Co | 12 | 7 | 13 | 4 | 7 |
| ⁶³ Ni | 6 | 15 | 4 | 74 | 28 |
| ⁶⁵ Zn | 34 | 107 | 96 | 60 | 66 |
| ⁶⁷ Ga | 185 | 1,739 | 851 | 222 | 518 |
| ⁶⁸ Ge | 2,220 | 2,758 | 3,100 | 3,034 | 3,488 |
| ⁷⁵ Se | 78 | 8 | 4 | 4 | 226 |
| ⁸⁵ Kr | 283,104 | 662,446 | 424,528 | 752,684 | 211,650 |
| ⁸⁵ Sr | 145 | 208 | 151 | 360 | 420 |
| ⁸⁶ Rb | 740 | 259 | 407 | 777 | 592 |
| ⁸⁹ Sr | 81 | 40 | 0 | 287 | 458 |
| ⁹⁰ Y | 17,834 | 22,348 | 14,911 | 5,180 | 20,572 |
| ⁹⁹ Mo | 102,735 | 70,300 | 112,850 | 140,600 | 148,000 |
| ^{99m} Tc | 66,866 | 164,169 | 138,886 | 84,382 | 99,561 |
| ¹⁰⁹ Cd | 67 | 27 | 35 | 50 | 10 |
| ¹¹¹ In | 5,291 | 5,587 | 4,440 | 4,943 | 10,915 |
| ¹²³ I | 2,944 | 5,328 | 5,550 | 14,514 | 16,440 |
| ¹²⁵ I Total | 157,796 | 150,213 | 146,791 | 115,429 | 77,832 |
| (標識化合物 ¹²⁵ I-Labeled compound) | 6,591 | 5,382 | 5,941 | 5,151 | 4,236 |
| ¹³¹ I | 20,735 | 24,869 | 24,185 | 20,687 | 17,432 |
| ¹³³ Xe | 370 | - | - | - | - |
| ¹³⁴ Cs | 2 | 5 | - | 11 | 41 |
| ¹³⁷ Cs | 22 | 43 | 28 | 297 | 251 |
| ¹⁴¹ Ce | - | - | - | - | - |
| ¹⁷⁷ Lu | 500 | 500 | 625 | - | 370 |
| ¹⁸⁶ Re | 10,150 | 6,280 | 11,690 | - | - |
| ²⁰¹ Tl | 1,850 | 1,924 | 1,258 | 1,665 | 666 |
| その他 Others | 672 | 1,038 | 937 | 32 | 82 |
| 合計 Total | 1,791,535 | 2,140,182 | 1,756,168 | 1,714,479 | 1,163,283 |
| 供給先事業所数 Institution Supplied | 609 | 577 | 548 | 533 | 503 |

§ Radionuclide/Labeled Compounds, Radiopharmaceuticals for research purpose

3.1.2 おもな非密封アイソトープの供給量(核種別, 機関別)2012年度

Amounts of Major Unsealed Radioisotopes[§] Supplied in Fiscal 2012 (by Institutions)

(単位Unit:MBq)

| 核種 Nuclides | 機関 Institutions | 総数 Total | 医療機関 Hospitals and Clinics | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Others |
|-------------------|--------------------|-------------|----------------------------------|-------------------------------------|----------------------------------|------------------------------|------------------|
| ³ H | | 230,198 | 298 | 23,676 | 144,589 | 61,635 | 0 |
| ¹⁴ C | | 77,391 | 1 | 4,967 | 70,336 | 2,087 | - |
| ¹⁸ F | | 29,970 | - | 6,105 | 23,495 | 370 | - |
| ²² Na | | 122 | - | 66 | 56 | - | - |
| ²⁴ Na | | - | - | - | - | - | - |
| ³² P | | 113,024 | 538 | 75,164 | 31,413 | 5,568 | 341 |
| ³³ P | | 12,230 | 37 | 627 | 11,159 | 407 | - |
| ³⁵ S | | 56,649 | 1,056 | 34,207 | 20,979 | 407 | - |
| ⁴⁵ Ca | | 1,222 | - | 962 | 260 | - | - |
| ⁵¹ Cr | | 31,943 | 1,443 | 18,694 | 6,441 | 5,106 | 259 |
| ⁵⁴ Mn | | 108 | - | 37 | 71 | - | - |
| ⁵⁵ Fe | | 335 | - | 259 | 75 | 1 | - |
| ⁵⁷ Co | | 168 | - | 166 | 2 | - | - |
| ⁵⁹ Fe | | 298 | - | 260 | 38 | - | - |
| ⁶⁰ Co | | 7 | - | 0 | 6 | 1 | 0 |
| ⁶³ Ni | | 28 | - | - | 28 | 0 | - |
| ⁶⁵ Zn | | 66 | - | 56 | 10 | - | - |
| ⁶⁷ Ga | | 518 | - | 481 | 37 | - | - |
| ⁶⁸ Ge | | 3,488 | 1,110 | 158 | 2,220 | - | - |
| ⁷⁵ Se | | 226 | - | 37 | 189 | - | - |
| ⁸⁵ Kr | | 211,650 | - | - | 10 | 211,640 | - |
| ⁸⁵ Sr | | 420 | - | 112 | 308 | - | - |
| ⁸⁶ Rb | | 592 | - | 370 | 222 | - | - |
| ⁸⁹ Sr | | 458 | - | 1 | 315 | 1 | 141 |
| ⁹⁰ Y | | 20,572 | - | 370 | 370 | 19,610 | 222 |
| ⁹⁹ Mo | | 148,000 | 14,800 | 102,675 | 25,900 | 4,625 | 0 |
| ^{99m} Tc | | 99,561 | 12,950 | 65,306 | 15,015 | 0 | 6,290 |
| ¹⁰⁹ Cd | | 10 | - | 10 | - | - | - |
| ¹¹¹ In | | 10,915 | 2,257 | 5,476 | 3,182 | - | - |
| ¹²³ I | | 16,440 | 555 | 10,360 | 5,328 | 197 | - |
| ¹²⁵ I | | 77,832 | 1,155 | 19,600 | 16,788 | 40,289 | - |
| ¹³¹ I | | 17,432 | - | 6,056 | 1,062 | 9,648 | 666 |
| ¹³³ Xe | | - | - | - | - | - | - |
| ¹³⁴ Cs | | 41 | - | 1 | 40 | 0 | - |
| ¹³⁷ Cs | | 251 | 2 | 71 | 177 | 1 | 0 |
| ¹⁷⁷ Lu | | 370 | - | - | 370 | - | - |
| ¹⁸⁶ Re | | - | - | - | - | - | - |
| ²⁰¹ Tl | | 666 | - | 518 | 148 | - | - |
| その他 Others | | 82 | - | 4 | 32 | 46 | 0 |
| 合計 Total | | 1,163,283 | 36,202 | 376,852 | 380,671 | 361,639 | 7,919 |

§ Radionuclide/Labeled Compounds, Radiopharmaceuticals for research purpose

3.2 おもな密封アイソトープの供給量 Amounts of Major Sealed Radioisotopes Supplied

3.2.1 おもな密封アイソトープ*の供給量の推移(核種別, 年度別) Amounts of Major Sealed Radioisotopes § Supplied in Fiscal 2008-2012

| 核種 Nuclides | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | |
|-----------------------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|----------------------|----------|
| | 数量 Activity (MBq) | 個数 Piece | 数量 Activity (MBq) | 個数 Piece | 数量 Activity (MBq) | 個数 Piece | 数量 Activity (MBq) | 個数 Piece | 数量 Activity (MBq) | 個数 Piece |
| ³ H Target | - | - | - | - | 358,900 | 2 | 1,021,200 | 3 | - | - |
| ²² Na | 1,197 | 25 | 1,532 | 15 | 2,646 | 17 | 1,060 | 23 | 807 | 20 |
| ⁵⁵ Fe | 9,990 | 4 | 37 | 1 | 4 | 1 | 4 | 1 | 37 | 1 |
| ⁵⁷ Co | 38,938 | 43 | 19,420 | 37 | 30,072 | 42 | 34,710 | 53 | 24,276 | 34 |
| ⁶⁰ Co** | 114,253,124,294 | 671 | 101,422,972,075 | 654 | 135,016,419,281 | 427 | 128,197,963,295 | 813 | 70,486,056,014 | 683 |
| ⁶³ Ni | 453,805 | 1,226 | 673,030 | 1,819 | 447,700 | 1,210 | 593,110 | 1,603 | 521,700 | 1,410 |
| ⁶⁸ Ge | 57,639 | 347 | 53,054 | 362 | 49,771 | 355 | 49,016 | 375 | 48,484 | 374 |
| ⁸⁵ Kr | 1,245,420 | 80 | 1,218,040 | 77 | 1,546,600 | 94 | 1,768,795 | 106 | 1,332,010 | 85 |
| ⁹⁰ Sr | 7,411 | 28 | 2,718 | 42 | 18,603 | 72 | 9,049 | 36 | 12,062 | 74 |
| ^{119m} Sn | 925 | 1 | 1,480 | 2 | - | - | - | - | 1,480 | 3 |
| ¹²⁵ I | 2,705,943 | 201,941 | 3,162,292 | 236,729 | 3,279,371 | 248,921 | 3,522,453 | 269,405 | 3,274,386 | 253,782 |
| ¹³⁷ Cs | 162,450,723 | 367 | 3,791,014 | 649 | 126,497,413 | 319 | 3,685,001 | 605 | 4,597,926 | 476 |
| ¹⁴⁷ Pm | 512,635 | 35 | 656,750 | 43 | 594,985 | 45 | 510,600 | 35 | 562,400 | 36 |
| ¹⁵³ Gd | - | - | 37,000 | 4 | 37,000 | 4 | - | - | 37,000 | 4 |
| ¹⁶⁹ Yb | 1,850,000 | 5 | 1,850,000 | 5 | 1,480,000 | 4 | 1,110,000 | 3 | 1,110,000 | 3 |
| ¹⁹² Ir | 704,622,450 | 1,983 | 644,151,500 | 1,791 | 632,393,720 | 1,750 | 543,017,590 | 1,494 | 607,776,950 | 1,685 |
| ¹⁹⁸ Au | 333,925 | 1,805 | 294,520 | 1,592 | 324,675 | 1,755 | 252,155 | 1,363 | 246,975 | 1,335 |
| ²⁴¹ Am | 538,104 | 35,694 | 1,093,770 | 24,319 | 1,207,098 | 25,267 | 169,704 | 12,640 | 241,569 | 18,806 |
| ²⁴¹ Am+Be | 166,500 | 9 | 3,700 | 1 | - | - | - | - | 74,000 | 4 |
| ²⁵² Cf | 10,466 | 389 | 63,547 | 409 | 16,258 | 246 | 2,195 | 325 | 43,703 | 387 |
| その他 Others | 5,551 | 30 | 174,102 | 37 | 2,554 | 27 | 1,864 | 49 | 2,386 | 43 |
| 合計 Total | 115,128,135,916 | 244,683 | 102,080,219,581 | 268,588 | 135,784,706,651 | 280,558 | 128,753,711,801 | 288,932 | 71,105,964,165 | 279,245 |

§ Radioactive sources

*下限数量を超えるものの集計

*Amounts of sources with activity over exception level

** ⁶⁰Coの個数について、滅菌施設等に使用される場合は輸送する輸送容器ごとに1個として、ガンマナイフ用の場合は照射装置に装填する個数201個または192個(装填個数)を1個として集計した。

** ⁶⁰Co (Piece) : Piece of the shipping container (used for sterilization device); Piece of unit (201 or 192 sources) (used for Gamma Knife)

3.2.2 おもな密封アイソトープの供給量(核種別, 機関別)2012年度

Amounts of Major Sealed Radioisotopes[§] Supplied in Fiscal 2012 (by Institutions)

(単位Unit:MBq)

| 核種 Nuclides | 機関 Institutions | 総数 Total | 医療機関 Hospitals and Clinics | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Others |
|-------------------------|--------------------|----------------|----------------------------------|-------------------------------------|----------------------------------|------------------------------|------------------|
| ³ H Target * | | - | - | - | - | - | - |
| ²² Na | | 807 | 63 | 740 | 2 | 2 | - |
| ⁵⁵ Fe | | 37 | - | - | - | - | 37 |
| ⁵⁷ Co | | 24,276 | 4,070 | 13,505 | 4,460 | 2,241 | - |
| ⁶⁰ Co | | 70,486,056,014 | 1,308,986,001 | 14 | 2,245,800,027 | 62,903,849,955 | 4,027,420,017 |
| ⁶³ Ni | | 521,700 | - | - | - | 521,700 | - |
| ⁶⁸ Ge | | 48,484 | 44,518 | 39 | 2,301 | 1,625 | 1 |
| ⁸⁵ Kr | | 1,332,010 | - | - | - | 1,332,010 | - |
| ⁹⁰ Sr | | 12,062 | - | 2 | 4,443 | 7,614 | 3 |
| ^{119m} Sn | | 1,480 | - | 555 | 925 | - | - |
| ¹²⁵ I | | 3,274,386 | 3,164,532 | 90,606 | 15,762 | 3,060 | 426 |
| ¹³⁷ Cs | | 4,597,926 | 755 | 32 | 163 | 4,595,097 | 1,879 |
| ¹⁴⁷ Pm | | 562,400 | - | - | - | 562,400 | - |
| ¹⁵³ Gd | | 37,000 | 37,000 | - | - | - | - |
| ¹⁶⁹ Yb | | 1,110,000 | - | - | - | 1,110,000 | - |
| ¹⁹² Ir | | 607,776,950 | 157,299,950 | 1,110,000 | 7,770,000 | 441,597,000 | - |
| ¹⁹⁸ Au | | 246,975 | 246,975 | - | - | - | - |
| ²⁴¹ Am | | 241,569 | - | 34 | 5 | 241,496 | 34 |
| ²⁴¹ Am+Be | | 74,000 | - | - | - | 74,000 | - |
| ²⁵² Cf | | 43,703 | - | 7 | 255 | 43,415 | 26 |
| その他 Others | | 2,386 | 100 | - | 12 | 1,902 | 372 |
| 合計 Total | | 71,105,964,165 | 1,469,783,964 | 1,215,534 | 2,253,598,355 | 63,353,943,517 | 4,027,422,795 |

* 非密封アイソトープではあるが、密封線源のように使用されるため統計上は密封に含めた。

* Although ³H Target is an unsealed isotope, it is included in this category since it is handled similarly to sealed sources.

注 100MBq以下の核種については省略した。

Note: The radionuclides below 100MBq are omitted.

§ Radioactive sources

3.2.3 密封アイソトープの内、おもな医療機器の供給量(核種別, 年度別)

Amounts of Major Medical Devices Supplied in Fiscal 2008-2012

(単位Unit: MBq)

| 使用用途 Usage | 核種 Nuclide & 数量 Activity | 年度 Year | | | | |
|--|--|---------------|---------------|---------------|---------------|---------------|
| | | 2008 | 2009 | 2010 | 2011 | 2012 |
| 遠隔照射治療 用密封線源 Teletherapy | ガンマナイフ GammaKnife ⁶⁰ Co 1,111TBq×201or192sources | 1,774,890,000 | 1,978,020,000 | 3,073,590,000 | 1,938,060,000 | 1,521,810,000 |
| | その他 Others ⁶⁰ Co 37~111TBq/1 source | - | - | - | - | - |
| アフターローディング用密封 線源 High Dose Rate Brachytherapy | ⁶⁰ Co 37~148GBq/1 source | 148,000 | 518,000 | 222,000 | 222,000 | 296,000 |
| | ¹⁹² Ir 295~370GBq/1 source | 158,508,000 | 158,952,000 | 161,838,000 | 162,060,000 | 161,320,000 |
| 治療用密封小線源 Low Dose Rate Brachytherapy | ¹²⁵ I 約11~15MBq/1 source | 2,704,796 | 3,162,047 | 3,278,323 | 3,520,079 | 3,268,485 |
| | ¹⁹⁸ Au 185MBq/1 source | 333,925 | 294,520 | 324,675 | 252,155 | 246,975 |
| | ¹⁹² Ir 37MBq~740MBq/1 source | 68,450 | 55,500 | 57,720 | 39,590 | 49,950 |
| その他Others | | 675 | 53,773 | 68,553 | 26,657 | 59,402 |
| 合計Total | | 1,936,653,846 | 2,141,055,840 | 3,239,379,271 | 2,104,180,481 | 1,687,050,812 |

注) 表3.2.3は表3.2.1の内集計です。

Note) This table is a partial breakdown of Table 3.2.1.

4 アイソトープ廃棄物の集荷・処理 RADIOISOTOPE WASTE

4.1 アイソトープ廃棄物の集荷 Collection of Radioisotope Waste

4.1.1 廃棄物集荷数量および事業所数(種類別, 年度別)(200L容器換算本数) Amounts of Collected Radioisotope Waste and Number of Institutions in Fiscal 1960-2012 (by waste type)

(Unit: piece of 200L containers)

| 種類 Waste | 年度 Year | 1960 ~ 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|
| 総数 Total | | 341,275 | 16,636 | 15,728 | 14,313 | 12,793 | 11,744 | 11,739 | 10,301 | 10,152 | 9,644 | 8,954 | 9,016 |
| 固体 Solids | | | | | | | | | | | | | |
| 可燃物 Combustibles | | 46,589 | 1,364 | 1,268 | 1,166 | 1,045 | 980 | 977 | 850 | 849 | 760 | 726 | 703 |
| 難燃物* Combustibles* | | 81,551 | 7,610 | 7,037 | 6,058 | 5,224 | 4,604 | 4,295 | 3,679 | 3,622 | 3,183 | 3,094 | 2,900 |
| 不燃物 Incombustibles | | 110,221 | 1,628 | 1,581 | 1,424 | 1,413 | 1,353 | 1,350 | 1,266 | 1,296 | 1,245 | 1,061 | 1,025 |
| スラリー Slurry | | 550 | - | - | - | - | - | - | - | - | - | - | - |
| 乾燥動物 Dried Animals | | 7,439 | 234 | 191 | 176 | 205 | 180 | 222 | 160 | 161 | 129 | 182 | 117 |
| ホルマリン動物 Animals | | 1,258 | - | - | - | - | - | - | - | - | - | - | - |
| 液体 Liquids | | 6,880 | 356 | 313 | 390 | 368 | 335 | 334 | 274 | 261 | 230 | 198 | 193 |
| フィルタ Filters | | 72,819 | 4,552 | 3,960 | 4,008 | 4,021 | 3,600 | 4,170 | 3,766 | 3,711 | 3,676 | 3,496 | 3,618 |
| 非圧縮性不燃物 Incompressible Incombustibles | | 13,968 | 892 | 1,378 | 1,091 | 517 | 692 | 391 | 306 | 252 | 421 | 197 | 460 |
| 集荷事業所数 Number of Institutions from which Radioisotope Waste is Collected | | / | 1,501 | 1,502 | 1,512 | 1,552 | 1,552 | 1,580 | 1,549 | 1,529 | 1,516 | 1,512 | 1,522 |

* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

4.1.2 廃棄物集荷数量および事業所数(種類別, 地区別)(200L容器換算本数)2012年度

Amounts of Collected Radioisotope Waste and Number of Institutions in Fiscal 2012 (by waste type, district)

(Unit: piece of 200L containers)

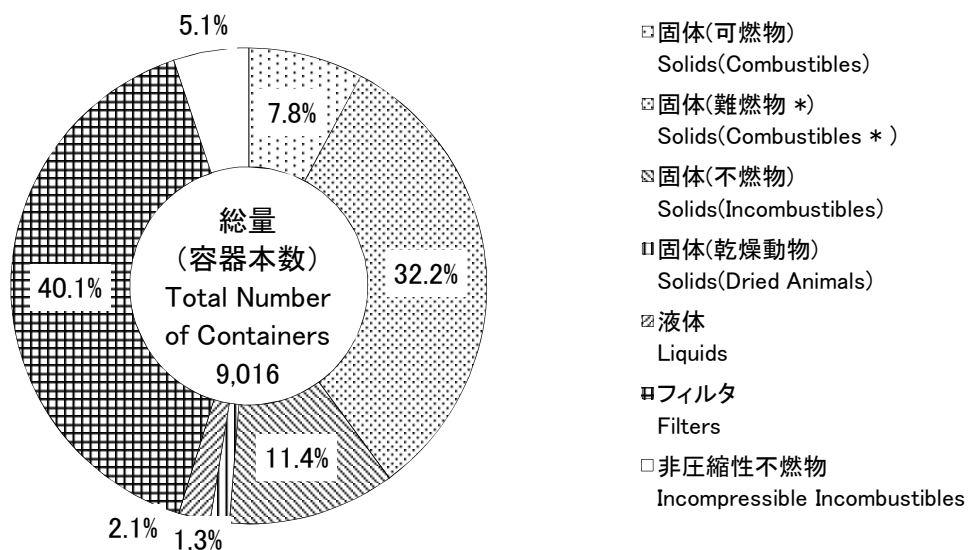
| 種類 Waste type | 地域 District | 総数 Total | 北海道 Hokkaido | 東北 Tohoku | 関東 Kanto | 中部 Chubu | 近畿 Kinki | 中国・四国 Chugoku & Shikoku | 九州・沖縄 Kyushu & Okinawa |
|--|----------------|--------------|-----------------|--------------|--------------|--------------|--------------|----------------------------|---------------------------|
| 総数 Total | | 9,016 | 258 | 426 | 4,749 | 1,002 | 1,649 | 452 | 480 |
| 固体 Solids | | | | | | | | | |
| 可燃物 Combustibles | | 703 | 21 | 21 | 375 | 82 | 125 | 35 | 44 |
| 難燃物* Combustibles* | | 2,900 | 86 | 65 | 1,836 | 220 | 441 | 121 | 131 |
| 不燃物 Incombustibles | | 1,025 | 43 | 39 | 503 | 126 | 175 | 69 | 70 |
| 乾燥動物 Dried Animals | | 117 | 2 | 2 | 67 | 12 | 24 | 6 | 4 |
| 液体 Liquids | | 193 | 4 | 3 | 106 | 21 | 41 | 10 | 8 |
| フィルタ Filters | | 3,618 | 101 | 292 | 1,704 | 456 | 657 | 205 | 203 |
| 非圧縮性不燃物 Incompressible Incombustibles | | 460 | 1 | 4 | 158 | 85 | 186 | 6 | 20 |
| 集荷事業所数 Number of Institutions from which Radioisotope Wastes is Collected | | 1,522 | 96 | 118 | 482 | 267 | 270 | 143 | 146 |

* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

図8 種類別廃棄物集荷数量 2012年度

Fig.8 Collected Radioisotope Waste by Kinds of Waste in Fiscal 2012



4.1.3 廃棄物集荷数量および事業所数(種類別, 機関別)(200L容器換算本数)2012年度

Amounts of Collected Radioisotope Waste and Number of Institutions in Fiscal 2012(by waste type, institutions)

(Unit: piece of 200L containers)

| 種類 Waste type | 機関 Institutions | 総数 Total | 医療機関** Hospitals and Clinics** | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Others |
|--|--------------------|--------------|--------------------------------------|-------------------------------------|----------------------------------|------------------------------|------------------|
| 総数 Total | | 9,016 | 3,853 | 1,533 | 2,438 | 1,113 | 79 |
| 固体 Solids | | | | | | | |
| 可燃物 Combustibles | | 703 | 121 | 180 | 287 | 97 | 18 |
| 難燃物* Combustibles* | | 2,900 | 1,501 | 450 | 651 | 278 | 20 |
| 不燃物 Incombustibles | | 1,025 | 520 | 111 | 196 | 188 | 10 |
| 乾燥動物 Dried Animals | | 117 | 1 | 22 | 77 | 17 | - |
| 液体 Liquids | | 193 | 2 | 58 | 104 | 28 | 1 |
| フィルタ Filters | | 3,618 | 1,672 | 685 | 896 | 346 | 19 |
| 非圧縮性不燃物 Incompressible Incombustibles | | 460 | 36 | 27 | 227 | 159 | 11 |
| 集荷事業所数 Number of Institutions from which Radioisotope Wastes is Collected | | 1,522 | 1,019 | 235 | 188 | 69 | 11 |

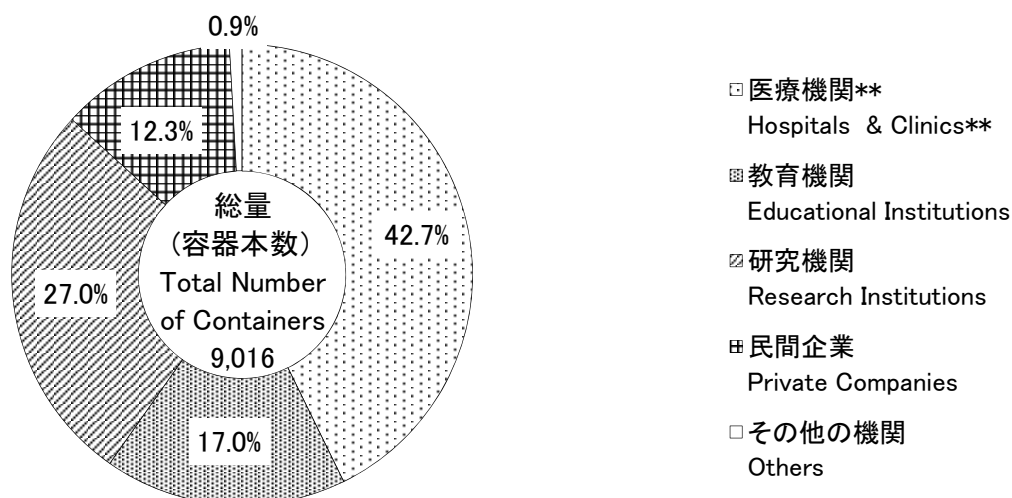
* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

** この統計においては, 衛生検査所は医療機関に含む。

** includes clinical laboratories

図9 機関別廃棄物集荷数量 2012年度
Fig.9 Collected Radioisotope Waste by Institutions in Fiscal 2012



4.2 アイソトープ廃棄物の処理 Treatment of Radioisotope Waste

4.2.1 廃棄物処理数量(種類別, 年度別)(200L容器換算本数)

Amounts of Treated Radioisotope Waste in Fiscal 1960-2012 (by waste type)

(Unit: piece of 200L containers)

| 種類 Waste type | 年度 Year | 1960 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|--|------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | | ～ 2001 | | | | | | | | | | | |
| 総数 Total | | 234,956 | 9,057 | 8,929 | 6,130 | 5,683 | 5,526 | 4,457 | 2,954 | 3,530 | 3,962 | 4,030 | 4,441 |
| 固体 Solids | | | | | | | | | | | | | |
| 可燃物 Combustibles | | 27,253 | 173 | 280 | 168 | 247 | 121 | 215 | 61 | 135 | 236 | 86 | 172 |
| 難燃物* Combustibles* | | 60,175 | 4,989 | 4,687 | 4,455 | 3,646 | 3,415 | 2,252 | 1,506 | 1,591 | 1,444 | 1,850 | 1,334 |
| 不燃物 Incombustibles | | 84,009 | 1,235 | 482 | 23 | 8 | 72 | 15 | 3 | 36 | 192 | 65 | 945 |
| スラリー Slurry | | 168 | - | - | - | - | - | - | - | - | - | - | - |
| 乾燥動物 Dried Animals | | 1,192 | 100 | 25 | - | - | - | - | - | 138 | 566 | 1,400 | 1,490 |
| ホルマリン動物 Animals | | 31 | - | - | - | - | - | - | - | - | - | - | - |
| 液体 Liquids | | | | | | | | | | | | | |
| 無機 Inorganic Substances | | 2,164 | 127 | - | - | - | - | - | - | - | - | - | - |
| 有機 Organic Substances | | 408 | - | - | - | - | - | - | - | 4 | 40 | 23 | 36 |
| フィルタ Filters | | 53,207 | 2,403 | 3,455 | 1,484 | 1,782 | 1,918 | 1,975 | 1,384 | 1,623 | 1,484 | 606 | 464 |
| 非圧縮性不燃物 Incompressible Incombustibles | | 6,349 | 30 | - | - | - | - | - | - | 3 | - | - | - |

* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

4.2.2 廃棄物処理数量(種類別, 機関別)(200L容器換算本数)2012年度

Amounts of Treated Radioisotope Waste in Fiscal 2012 (by waste type, institutions)

(Unit: piece of 200L-containers)

| 種類 Waste type | 機関 Institutions | 総数 Total | 医療機関** Hospitals & Clinics** | 教育機関 Educational Institutions | 研究機関 Research Institutions | 民間企業 Private Companies | その他の機関 Others |
|--|--------------------|--------------|------------------------------------|-------------------------------------|----------------------------------|------------------------------|------------------|
| 総数 Total | | 4,441 | 2,622 | 409 | 757 | 537 | 116 |
| 固体 Solids | | | | | | | |
| 可燃物 Combustibles | | 172 | 161 | — | — | 11 | — |
| 難燃物* Combustibles* | | 1,334 | 1,200 | — | — | 44 | 90 |
| 不燃物 Incombustibles | | 945 | 778 | — | — | 142 | 25 |
| 乾燥動物 Dried Animals | | 1,490 | 15 | 396 | 741 | 338 | — |
| 液体 Liquids | | | | | | | |
| 無機 Inorganic Substances | | — | — | — | — | — | — |
| 有機 Organic Substances | | 36 | 4 | 13 | 16 | 2 | 1 |
| フィルタ Filters | | 464 | 464 | — | — | — | — |
| 非圧縮性不燃物 Incompressible Incombustibles | | — | — | — | — | — | — |

* プラスチックチューブ, ポリバイアル, ポリシート, ゴム手袋等, 燃やしにくいもの(シリコン, テフロンは含まない。)

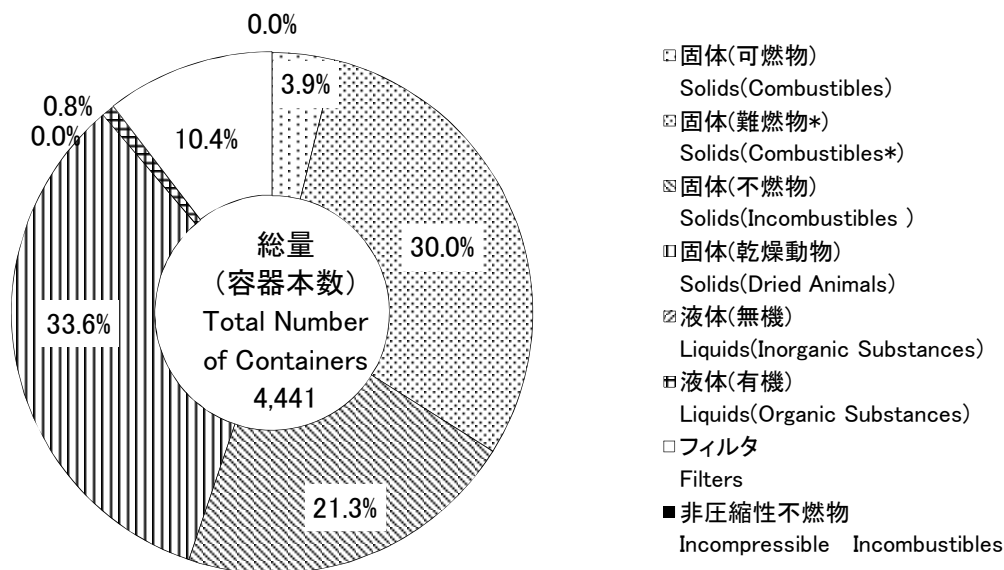
* Plastic tubes, polyethylene vials, polyethylene sheets, rubber gloves, etc. (Silicon and Teflon are not included)

** この統計においては, 衛生検査所は医療機関に含む。

** includes clinical laboratories

図10 種類別廃棄物処理数量 2012年度

Fig.10 Treatment of Radioisotope Waste by Kinds of Waste in Fiscal 2012



5 付録 APPENDIX

5.1 放射性医薬品の使用施設数の推移(都道府県別, 年度別) Number of Hospitals and Clinical Laboratories in Fiscal 2010-2012 (by prefecture)

| 施設 H&C** | 平成 22 年 (2010) | | | | 平成 23 年 (2011) | | | | 平成 24 年 (2012) | | | |
|----------------------------|---------------------|-----------------------|-----------|------|---------------------|-----------------------|-----------|------|---------------------|-----------------------|-----------|------|
| | 全施設 Total H&C | In vitro 施設 H&C | In vivo | | 全施設 Total H&C | In vitro 施設 H&C | In vivo | | 全施設 Total H&C | In vitro 施設 H&C | In vivo | |
| | | | 施設 H&C | (%)* | | | 施設 H&C | (%)* | | | 施設 H&C | (%)* |
| 100 北海道 | 97 | 2 | 95 | 1.7 | 97 | 2 | 95 | 1.7 | 97 | 1 | 96 | 1.7 |
| 201 青森 | 20 | 1 | 20 | 1.5 | 19 | 1 | 19 | 1.4 | 18 | - | 18 | 1.3 |
| 202 岩手 | 19 | 1 | 19 | 1.4 | 19 | - | 19 | 1.4 | 19 | - | 19 | 1.4 |
| 203 宮城 | 31 | - | 31 | 1.3 | 30 | - | 30 | 1.3 | 31 | - | 31 | 1.3 |
| 204 秋田 | 16 | - | 16 | 1.5 | 16 | - | 16 | 1.5 | 16 | - | 16 | 1.5 |
| 205 山形 | 13 | - | 13 | 1.1 | 12 | - | 12 | 1.0 | 12 | - | 12 | 1.0 |
| 206 福島 | 18 | - | 18 | 0.9 | 18 | - | 18 | 0.9 | 18 | - | 18 | 0.9 |
| 東北計 TOHOKU Area Total | 117 | 2 | 117 | 1.2 | 114 | 1 | 114 | 1.2 | 114 | - | 114 | 1.2 |
| 401 新潟 | 34 | - | 34 | 1.4 | 35 | - | 35 | 1.5 | 35 | - | 35 | 1.5 |
| 405 山梨 | 7 | 1 | 7 | 0.8 | 7 | - | 7 | 0.8 | 7 | - | 7 | 0.8 |
| 406 長野 | 24 | 1 | 24 | 1.1 | 24 | 1 | 24 | 1.1 | 24 | 1 | 24 | 1.1 |
| 301 茨城 | 19 | 1 | 18 | 0.6 | 19 | 1 | 18 | 0.6 | 20 | 1 | 19 | 0.6 |
| 302 栃木 | 12 | 2 | 11 | 0.5 | 13 | 2 | 12 | 0.6 | 14 | 1 | 13 | 0.7 |
| 303 群馬 | 26 | - | 26 | 1.3 | 26 | - | 26 | 1.3 | 23 | - | 23 | 1.1 |
| 304 埼玉 | 33 | 3 | 32 | 0.4 | 35 | 3 | 34 | 0.5 | 35 | 2 | 34 | 0.5 |
| 305 千葉 | 40 | 1 | 40 | 0.7 | 39 | 1 | 39 | 0.6 | 40 | - | 40 | 0.6 |
| 306 東京都 | 112 | 2 | 110 | 0.9 | 112 | 2 | 110 | 0.8 | 112 | 2 | 110 | 0.8 |
| 307 神奈川県 | 59 | 1 | 58 | 0.6 | 59 | 2 | 57 | 0.6 | 59 | 1 | 58 | 0.6 |
| 関東計 KANTO Area Total | 366 | 12 | 360 | 0.8 | 369 | 12 | 362 | 0.8 | 369 | 8 | 363 | 0.8 |
| 407 岐阜 | 26 | - | 26 | 1.2 | 26 | - | 26 | 1.2 | 25 | - | 25 | 1.2 |
| 408 静岡県 | 34 | 2 | 34 | 0.9 | 34 | 2 | 34 | 0.9 | 33 | 1 | 33 | 0.9 |
| 409 愛知 | 57 | 1 | 57 | 0.8 | 58 | 1 | 58 | 0.8 | 59 | 1 | 59 | 0.8 |
| 501 三重 | 17 | - | 17 | 0.9 | 17 | - | 17 | 0.9 | 17 | - | 17 | 0.9 |
| 東海計 TOKAI Area Total | 134 | 3 | 134 | 0.9 | 135 | 3 | 135 | 0.9 | 134 | 2 | 134 | 0.9 |
| 402 富山 | 17 | - | 17 | 1.6 | 17 | - | 17 | 1.6 | 17 | - | 17 | 1.6 |
| 403 石川 | 24 | 1 | 24 | 2.1 | 23 | - | 23 | 2.0 | 23 | - | 23 | 2.0 |
| 404 福井 | 12 | - | 12 | 1.5 | 12 | - | 12 | 1.5 | 12 | - | 12 | 1.5 |
| 北陸計 HOKURIKU Area Total | 53 | 1 | 53 | 1.7 | 52 | - | 52 | 1.7 | 52 | - | 52 | 1.7 |
| 502 滋賀 | 18 | 1 | 17 | 1.2 | 18 | 1 | 17 | 1.2 | 17 | 1 | 16 | 1.1 |
| 503 京都 | 33 | 3 | 31 | 1.2 | 32 | 3 | 30 | 1.1 | 32 | 3 | 30 | 1.1 |
| 504 大阪 | 79 | 1 | 78 | 0.9 | 76 | - | 76 | 0.9 | 76 | - | 76 | 0.9 |
| 505 兵庫 | 57 | 1 | 57 | 1.0 | 57 | 1 | 57 | 1.0 | 57 | - | 57 | 1.0 |
| 506 奈良 | 13 | - | 13 | 0.9 | 14 | - | 14 | 1.0 | 14 | - | 14 | 1.0 |
| 507 和歌山 | 13 | - | 13 | 1.3 | 12 | - | 12 | 1.2 | 12 | - | 12 | 1.2 |
| 近畿計 KINKI Area Total | 213 | 6 | 209 | 1.0 | 209 | 5 | 206 | 1.0 | 208 | 4 | 205 | 1.0 |
| 601 鳥取 | 8 | - | 8 | 1.4 | 8 | - | 8 | 1.4 | 8 | - | 8 | 1.4 |
| 602 島根 | 11 | - | 11 | 1.5 | 11 | - | 11 | 1.5 | 11 | - | 11 | 1.5 |
| 603 岡山 | 20 | - | 20 | 1.0 | 20 | - | 20 | 1.0 | 20 | - | 20 | 1.0 |
| 604 広島 | 30 | 1 | 29 | 1.0 | 30 | 1 | 29 | 1.0 | 29 | 1 | 28 | 1.0 |
| 605 山口 | 21 | - | 21 | 1.4 | 21 | - | 21 | 1.4 | 19 | - | 19 | 1.3 |
| 中国計 THUGOKU Area Total | 90 | 1 | 89 | 1.2 | 90 | 1 | 89 | 1.2 | 87 | 1 | 86 | 1.1 |
| 607 香川 | 14 | - | 14 | 1.4 | 14 | - | 14 | 1.4 | 13 | - | 13 | 1.3 |
| 606 徳島 | 6 | 1 | 6 | 0.8 | 6 | - | 6 | 0.8 | 6 | - | 6 | 0.8 |
| 608 愛媛 | 24 | - | 24 | 1.7 | 25 | - | 25 | 1.7 | 25 | - | 25 | 1.8 |
| 609 高知 | 6 | - | 6 | 0.8 | 6 | - | 6 | 0.8 | 6 | - | 6 | 0.8 |
| 四国計 SHIKOKU Area Total | 50 | 1 | 50 | 1.3 | 51 | - | 51 | 1.3 | 50 | - | 50 | 1.3 |
| 701 福岡 | 57 | 2 | 56 | 1.1 | 54 | 1 | 53 | 1.0 | 55 | 1 | 54 | 1.1 |
| 702 佐賀 | 6 | - | 6 | 0.7 | 6 | - | 6 | 0.7 | 6 | - | 6 | 0.7 |
| 703 長崎 | 13 | - | 13 | 0.9 | 13 | - | 13 | 0.9 | 13 | - | 13 | 0.9 |
| 704 熊本 | 20 | 1 | 20 | 1.1 | 20 | 1 | 20 | 1.1 | 20 | - | 20 | 1.1 |
| 705 大分 | 14 | - | 14 | 1.2 | 14 | - | 14 | 1.2 | 14 | - | 14 | 1.2 |
| 706 宮崎 | 14 | - | 14 | 1.2 | 14 | - | 14 | 1.2 | 14 | - | 14 | 1.2 |
| 707 鹿児島 | 25 | - | 25 | 1.5 | 24 | - | 24 | 1.4 | 24 | - | 24 | 1.4 |
| 708 沖縄 | 12 | - | 12 | 0.9 | 11 | - | 11 | 0.8 | 11 | - | 11 | 0.8 |
| 九州計 KYUSYU Area Total | 161 | 3 | 160 | 1.1 | 156 | 2 | 155 | 1.1 | 157 | 1 | 156 | 1.1 |
| 計 Grand Total | 1,281 | 31 | 1,267 | 1.0 | 1,273 | 26 | 1,259 | 1.0 | 1,268 | 17 | 1,256 | 1.0 |

* 対人口10万人比 H&C/100thousand

注 本表の数字は供給実績に基づく施設数

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

** H&C : Hospitals and Clinical Laboratories

5. 2 放射性医薬品の使用施設数の推移(事業形態別, 年度別)

Number of Hospitals and/or Clinical Laboratories in Fiscal 2010–2012 (by organization)

| 事業形態 Type | 施設 H&C* | 全施設 Total H&C* | | | <i>in vivo</i> 施設 <i>in vivo</i> H&C* | | | <i>in vitro</i> 施設 <i>in vitro</i> H&C* | | |
|--------------------------------|------------|----------------|---------------|---------------|---------------------------------------|---------------|---------------|---|---------------|---------------|
| | | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 |
| 大学病院 University Hospitals | | 125 | 125 | 124 | 125 | 125 | 124 | 8 | 5 | 2 |
| 国立病院 National Hospitals | | 135 | 135 | 135 | 135 | 135 | 135 | 2 | 1 | 1 |
| 公立病院 Prefectural Hospitals | | 355 | 353 | 349 | 355 | 353 | 349 | 5 | 5 | 2 |
| 民間病院 Private Hospitals | | 652 | 646 | 648 | 652 | 646 | 648 | 2 | 1 | 0 |
| 衛生検査所 Clinical Laboratories | | 14 | 14 | 12 | - | - | - | 14 | 14 | 12 |
| 合計 Total | | 1,278 | 1,273 | 1,268 | 1,267 | 1,259 | 1,256 | 31 | 26 | 17 |

注 本表の数字は供給実績に基づく施設数

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

* H&C : Hospitals and Clinical Laboratories

5. 3 放射性医薬品の使用施設数の推移(*in vivo*/*in vitro*別, 年度別)

Number of Hospitals and/or Clinical Laboratories in Fiscal 2008–2012 (by *in vivo*/*in vitro* use)

| 施設 H&C* | 年度 Year | 平成20年 2008 | 平成21年 2009 | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 |
|--|---------|---------------|---------------|---------------|---------------|---------------|
| <i>in vivo</i> 施設 <i>in vivo</i> use | | 1,274 | 1,263 | 1,267 | 1,259 | 1,256 |
| <i>in vitro</i> 施設 <i>in vitro</i> use | | 45 | 34 | 31 | 26 | 17 |
| <i>in vivo</i> / <i>in vitro</i> 両方使用 both <i>in vivo</i> and <i>in vitro</i> use | | 26 | 19 | 17 | 12 | 5 |
| <i>in vivo</i> のみ使用 <i>in vivo</i> use only | | 1,248 | 1,244 | 1,250 | 1,247 | 1,251 |
| <i>in vitro</i> のみ使用(病院) <i>in vitro</i> use only (Hospital) | | 0 | 0 | 0 | 0 | 0 |
| <i>in vitro</i> のみ使用(衛生検査所) <i>in vitro</i> use only (Clinical lab.) | | 19 | 15 | 14 | 14 | 12 |
| 全施設数 Total | | 1,293 | 1,278 | 1,281 | 1,273 | 1,268 |

注 本表の数字は供給実績に基づく施設数

note: Figures in the table show actual numbers provided Radiopharmaceuticals.

* H&C : Hospitals and Clinical Laboratories

5. 4 *in vivo* 供給量の推移(核種別、年度別)

Amounts of Radiopharmaceuticals (for *in vivo* use) Supplied in Fiscal 2008–2012

| | | [MBq] | | | | |
|--|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 核種 Nuclides | 年度 Year | 平成20年 2008 | 平成21年 2009 | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 |
| | ¹⁸ F | | 21,973,190 | 24,694,170 | 28,730,685 | 31,783,925 |
| ⁵¹ Cr | | 1,536 | 1,295 | 1,351 | 962 | 814 |
| ⁶⁷ Ga | | 7,207,822 | 6,018,531 | 5,191,359 | 4,419,983 | 3,957,150 |
| ⁸¹ Rb- ^{81m} Kr(G) | | 590,335 | 562,215 | 592,925 | 604,210 | 603,655 |
| ⁸⁹ Sr | | 117,171 | 163,701 | 245,904 | 272,271 | 241,110 |
| ⁹⁰ Y | | 155,400 | 495,800 | 603,100 | 414,400 | 338,550 |
| ⁹⁹ Mo- ^{99m} Tc(G) | | 141,679,350 | 43,453,050 | 63,559,525 | 92,609,150 | 83,888,250 |
| ^{99m} Tc | | 307,304,295 | 406,342,734 | 366,592,140 | 321,106,358 | 324,536,027 |
| ¹¹¹ In | | 169,312 | 190,846 | 190,365 | 155,844 | 158,508 |
| ¹²³ I | | 22,794,774 | 23,853,351 | 24,461,953 | 25,319,350 | 26,996,755 |
| ¹³¹ I | | 12,399,161 | 12,973,724 | 13,300,113 | 14,174,481 | 14,561,627 |
| ¹³³ Xe | | 2,153,770 | 1,071,890 | 880,600 | 892,070 | 818,070 |
| ²⁰¹ Tl | | 19,608,853 | 20,917,543 | 19,343,267 | 17,835,184 | 16,927,352 |
| 合 計 Total | | 536,154,968 | 540,738,849 | 523,693,287 | 509,588,189 | 509,086,588 |

(G) : ジェネレータ

(G) : Radioisotope Generator

5. 5 *in vitro* 供給量の推移(核種別、年度別)

Amounts of Radiopharmaceuticals (for *in vitro* use) Supplied in Fiscal 2008–2012

| | | [MBq] | | | | |
|----------------------|------------------|---------------|---------------|---------------|---------------|---------------|
| 核種 Nuclides | 年度 Year | 平成20年 2008 | 平成21年 2009 | 平成22年 2010 | 平成23年 2011 | 平成24年 2012 |
| | ⁵⁹ Fe | | 3,818 | 4,140 | 3,830 | 3,834 |
| ¹²⁵ I | | 31,874 | 26,770 | 23,429 | 22,088 | 18,983 |
| 合 計 Total | | 35,692 | 30,910 | 27,258 | 25,921 | 22,853 |

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