

FUNDAMENTALS NORMS ON RADIOLOGICAL SAFETY

Chapter I OBJECTIVE AND DEFINITIONS

Art. 1. – These norms set up the requirements concerning the ensurance of radiological safety of profesional exposed workers, population and environment, in accordance with the provisions of Law 111/1996 on the safe deployment of nuclear activities ,republished.

Art. 2. - Terms and expressions used in these norms are defined in annexes No. 1 and 3.

Chapter II APPLICABILITY

Art. 3. - (1) These norms shall apply to practices which involve the risk of exposure to ionizing radiation emanating from:

- a) artificial sources;
- b) radiation sources in cases where radionuclides are or have been processed in view of using their radioactive, fissile or fertile properties;
- c) electrical equipment which operating at a potential difference of more than 5kV emit such radiation.

(2) These norms shall also apply to activities which involve the presence of natural radiation sources, in other situations than those provided under paragraph (1), b) and leading to a significant increase in the exposure of workers or members of the public.

(3) These norms shall also apply to intervention in case of radiological emergencies as well as in case of lasting exposure resulting from a radiological emergency or a past or old practice or work activity.

Art. 4. – These norms shall not apply in case of:

- a) exposure to radon in dwellings;
- b) exposure to the natural level of radiation;
- c) practices provided under art. 3, paragraph (1), l.a) and b) which involve utilization of materials for which exemption requirements from annex No. 2 are accomplished.

Chapter III AUTHORIZATION OF PRACTICES

AUTHORIZATION

Art. 5. - (1) According to provisions under art. 8 of the Law 111/1996 on the safe deployment of nuclear activities, republished, the practices provided by art. 3, paragraph 1 shall require an authorization issued by the National Commission for Nuclear Activities Control, hereinafter CNCAN.

(2) The regime of authorization shall also apply in case of radioactive waste storage after the final completion of practice, the final disposal, recycling or reutilization of the sealed, unsealed sources and of

the radioactive materials arised from any activity subject to authorisation requirements..

Art. 6. - (1) The authorisation issued by CNCAN according to provisions of art. 5 is prior to practice development.

(2) The exceptions regarding the prior character of authorisation are established by CNCAN through specific regulations according to the law.

Art. 7. -The content, conditions and stages of authorisations process of practices are established by the specific regulations issued by CNCAN.

Exemptions from the authorisation

Art. 8. - (1) There are exempted from the CNCAN authorisation the folowing practices:

- a) which involve radioactive sources and radioactive materials whose total activity does not exceed the exemption value provided in column 5 of Table 2-B from annex No. 2 or, in special cases, an other exemption value established by CNCAN, that satisfy the fundamental criteria set out in annex No. 2.
- b) which involve radioactive sources and radioactive materials whose concentration of activity per unit mass do not exceed the exemption value set out in column 4 of Table 2-B to annex No. 2 or ,in special cases, an other exemption value established by CNCAN, that satisfies the fundamental criteria set out in annex No. 2.
- c) which involve nuclear facilities containing radioactive sources whose total activity and the concentration of activity exceed the exemption values set out in subparagraph (a) and (b) if the conditions established by CNCAN are satisfied.
- d) which involve the cathode ray tubes intended for the display of visual images, or electrical apparatus operating at a potential difference not exceeding 30 kV, provided that this operation shall not cause, in normal operating conditions, a dose rating, an equivalent debit of ambient dose $H'(10)$ and not one equivalent debit of directional dose $H'(0,07;\Omega)$ (whatever the direction Ω), more than 1 μSv per hour at a distance of 0,1m from any accessible surface of facility ;
- e) which involve the electrical apparatus operating at a potential more than 30kV provided that the type of respective apparatus obtain an authorization of radiological safety where are mentioned the exception of utilization from the authorization, but the operation of apparatus shall not produce, in normal operating conditions, an equivalent debit of ambient dose $H'(10)$ and not one equivalent debit of directional dose $H'(0,07;\Omega)$ (whatever the direction Ω), more than 1 μSv per hour at a distance of 0,1 m from any accessible surface of facility;
- f) which involve materials contaminated with radionuclides arised from authorized practices

which accomplish the clearance levels from the regulatory control established by CNCAN.

(2) The provisions of the paragraph (1) do not apply to practices which involve the import, supply, reparation and assembling – installing.

(3) The clearance levels provided in the paragraph (1) f) shall apply only after obtaining the authorization from the CNCAN.

Art. 9. – For the purpose of exemption from the authorization, the practices provided by the art. 8 c) shall accomplish cumulative the following conditions :

- a) the radioactive sources are sealed sources;
- b) the equivalent debit of ambient dose $H'(10)$, and the equivalent debit of directional dose $H'(0,07; \Omega)$ (whatever the direction Ω), do not exceed 1 μSv per hour at a distance of 0,1 m from any accessible surface of facility;
- c) are established the conditions for disposal as radioactive waste;
- d) the type of facility has obtained the radiological safety authorization where are mentioned the exemption from the authorization of practices involving the utilization of respective facility.

Art. 10. - (1) The natural and legal persons which posses, deposit or utilize the nuclear facilities provided under art. 8 c) shall comply with the provisions of use instructions issued by producer regarding the physical protection, radiation protection, evidence and accounting for sources, delivering as radioactive waste as well as reporting of loss or theft radioactive sources.

(2) The content of use instructions issued by producer are approved by CNCAN on occasion of issuing of the radiological safety authorization of respective nuclear facilities.

Art. 11. - (1) The storage as radioactive waste after the final part of practice, final disposal, recycling and reutilization of radioactive materials arising from any activity subject to the authorization requirements, shall not subject the authorization requirements in case they accomplish the conditions regarding the clearance levels from the regulatory control which shall be established by CNCAN for each concrete situation.

(2) The clearance levels from the regulatory control shall be established by CNCAN taking technical norms of Community into consideration.

Chapter IV

JUSTIFICATION, OPTIMIZATION AND DOSE LIMITATION FOR PRACTICES FROM NUCLEAR FIELD

Section I General principles

Justification of practices

Art. 12. - (1) All new practices which lead to exposure to ionizing radiation shall be justified in writing by their initiator, precisising their economic, social or other nature advantages, in comparison with the detriment which they could cause to health.

(2) CNCAN shall authorize these practices, provided that consider the justification as being thorough.

Art. 13. - (1) Existing practices shall be reassessed whenever new situations appear regarding their consequences and efficiency in conditions provided in art. 12.

(2) The reassessment of practice justification is coordinated by CNCAN.

(3) If the practice does not justify any more, CNCAN may dispose practice extending reducing or even her stopping.

Art. 14. – They are considered unjustified the following practices :

- a) that which involve activation through irradiation or deliberate introduction of radioactive substances in foodstuffs, drink, cosmetics, or any other goods or products destinad to ingestion, inhalation or transdermic transfer by a human being;
- b) that which involve utilization of radiations or radioactive substances for the purpose of entertainment, recreation or in products as toys, personal jewellery or ornaments.

Art. 15. – Provisions of art. 14 (a) shall not apply to practices regarding medical exposures.

Optimization of practices

Art. 16. – The applicant, respectively the authorization holder, is forced to demonstrate that are undertaken all actions to ensure radiation protection optimization, with a view to ensure that all exposures, including the potential ones, within the framework of practice developed to be maintained at the lowest reasonable achievable level, taking in consideration the economic and social factors - the principle ALARA .

Limitation of doses and dose constraints

Art. 17. - (1) The annual doses sum arising from all relevant practices shall not exceed the dose limits provided by these present norms for professional exposed workers, individuals under training and members of population.

(2) Provisions under paragraph (1) shall not apply in case of following types of exposure:

- a) exposure of individuals as part of own diagnosis or medical treatment ;
- b) exposure of individuals knowingly and willingly helping ,other than as part of their occupation, in supporting the patients under medical diagnosis or treatment ;
- c) exposure of volunteers which participate in medical or biomedical research programmes.

Art. 18. - (1) CNCAN establishes, whenever is necessary, dose constraints for practices or for certain radiation sources within the practice.

(2) Doses constraints shall be used as superior limit in the process of optimization of radiation protection.

Art. 19. - In the process authorization and control of practices involving medical exposure, CNCAN shall also verify:

- a) compliance with the dose constraints established by Ministry of Health as reference levels for medical exposure;
- b) compliance with the dose constraints established by Ministry of Health within the procedures applied to exposed individuals in accordance with art. 17 paragraph (2), b) and c).

Art. 20. - (1) Authorization holder establishes, whenever is necessary, derived limits of emission for radioactive effluents, with assistance of an approved expert or an approved occupation health service.

(2) CNCAN approves derived limits within the authorization process.

Section II

Specific requirements regarding dose limit

Dose limits for professional exposed individuals

Art. 21. - It is forbidden persons utilization under 18 years in activities which could lead to their professional exposure excepted persons under training for practices in nuclear field.

Art. 22. - (1) The limit on effective dose for professional exposed individuals is 20 mSv (milisievert) in a year.

(2) Compliance with disposals of paragraph (1), are also available the following limits on equivalent dose:

- a) 150 mSv in a year for the lens of the eye ;
- b) 500 mSv in a year for skin; the limit shall apply in average of dose over any 1 cm² area of skin, regardless of the area exposed.;
- c) 500 mSv in a year for the extremity of hands and legs.

Special protection in periods of pregnancy and nursing

Art. 23. - (1) As soon as a professional exposed woman take notice of fact that she is pregnant, she should inform in writing the authorization holder about this fact.

(2) Authorization holder shall take immediately all measures for ensuring the foetus protection at the level of dose provided for population.

(3) Conditions of work of pregnant woman should ensure that the effective dose received by foetus should be at the lowest reasonable achievable level, without exceeding 1 mSv in all left period of pregnancy.

Art. 24. - (1) The professional exposed woman who suckles a child should announce in writing, immediatly, authorization holder about this fact.

(2) The authorization holder de autorizatie should ensure immediatly that the respective womens do not carry on in the period of suckling the activities involving a significant risk of the radioactive contamination.

Limits of dose for population

Art. 25. - (1) The limit of effective dose for population is 1 mSv in a year.

(2) In special situations, CNCAN may authorize an annual superior limit till 5 mSv in a year, provided that the average of the effective dose on 5 years running does not exceed 1 mSv in a year.

Art. 26. - In compliance with conditions provided under art. 25, the following limits of the equivalent dose are also available for the population:

- a) 15 mSv in a year for the lens of the eye;
- b) 50 mSv in a year for the skin; the limit shall apply to the dose average over any area of 1 cm², regardless of the area exposed.

Dose limits for the persons under training

Art. 27. – The dose limits for apprentices aged under 16 years who under training are obliged to use the radiation sources, are that which are provided in art. 25 si 26 for the population.

Art. 28. - (1) The limit on effective dose for the persons aged between 16 and 18 years who under their training are obliged to use the radiation sources, is 6 mSv in a year.

(2) In compliance with disposals of paragraph (1), sunt valabile si the following limits of the equivalent dose are also available:

- a) 50 mSv in the year for the lens of the eye;
- b) 150 mSv in the year for the skin; the limit shall apply for the dose average over any area of 1 cm², regardless of the area exposed;
- c) 150 mSv in the year for the extremity of hands and legs.

Art. 29. – The dose limits for the persons aged over 18 years who under their training are obliged to use the radiation sources, are that which are provided in art. 22 for the professional exposed individuals.

Specially authorised exposures

Art. 30. - In exceptional circumstances, excluding radiological emergencies, CNCAN may authorise individual occupational exposures of some identified workers exceeding the effective dose limit set out in art. 22 paragraph (1), provided that such exposures are limited in time, confined to certain working areas and are integrated below maximum value approved by CNCAN for the equivalent dose limits provided in art. 22 paragraph (2).

Art. 31. – The holder authorization which applies the special authorization for exposures shall respect the following conditions:

- a) to submit to specially authorised exposures only the professional exposed persons on category A;
- b) to no submit to specially authorised exposures the persons under training, pregnant womens, womens which suckle a child, if that suppose the possibility of incorporation or radioactive contamination;

- c) to justify seriously these exposure and to discuss in detail with workers, which should be the volunteers, with their representatives, with the approved doctor or with the approved occupational health services for the professional exposed persons and with the qualified expert or with the approved body of radiation protection;
- d) to ensure that all staff involved in specially authorised exposures should be informed on presumed risks and on precautions to be taken;
- e) to ensure that all doses concerning these specially authorised exposures should be recorded separately in medical file and in individual monitoring registration.

Art. 32. - In case of specially authorised exposure, having as effect the exceeding of the effective dose limit provided in art. 22 paragraph (1), it is not obligatory the temporary or definitive change of the work place of the exposed person, without his requirement.

Exposure of the population in general

Art. 33. - CNCAN shall take all measures for ensure that the exposure of population on radiations, caused by the nuclear practices to which shall apply this norms, for be kept as low as reasonably achievable, economic and social factors being taken into account.

Art. 34. - CNCAN shall watch periodically the all value of effective dose for the population in general, on number of inhabitant.

Chapter V ESTIMATION OF DOSES

Art. 35. – For the estimation of effective dose and equivalent doses, to the external exposure, as well as of effective dose to internal exposure shall be used the values and relationships referred to in annexe nr. 3 and annexe nr. 4.

Art. 36. - CNCAN may also accept the use of other methods of estimation of doses.

Chapter VI

OPERATIONAL RADIATION PROTECTION OF PROFESSIONAL EXPOSED AND OF PERSONS UNDER TRAINING

General principles

Art. 37. – The authorisation holder shall take all necessary measures for reduce the exposed workers to radiations at the lowest reasonable achievable level. In this purpose:

- a) shall realize preliminary assessment, which should allow the identification of nature and of proportions of radiological risk of professional exposed and level to which are accomplished

- the provisions concerning the optimization of radiation protection in all work conditions;
- b) shall realize the clasification of workplaces, then is the case, in different areas, relying on the assesment of the foreseeable anual doses, as well as on the probability and the extent of the potential exposures;
- c) shall realize the clasification on the category of the professional exposed persons;
- d) shall involve the measures of the control and the surveillance adapted to the different areas and the working conditions, including the conditions of individual surveillance, then situation shall impose;
- e) shall ensure the medical surveillance;
- f) shall ensure the equipment of protection to radiations, both individual and collective;
- g) shall use in practice only the staff which possesses the authorisations for practising available for the respective activity.
- h) shall accomplish any other necessary measurements for the assurance of the operational radiation protection of the professional exposed persons , in the respective practice.

General requirements concerning the zoning

Art. 38. - (1) In the all workplaces where it is the possibility of an exposure to the ionising radiations superior to the dose limits for population provided in art. 25 si 26, the holder authorisation may take the measurements for the purpose of radiation protection, which shall be adapted to the nature of facilities and of sources.

(2) The workplaces provided in the paragraph (1) shall be classified in the controlled and monitored areas, in accordance with the specific criteria issued by CNCAN, in regulations regarding the respective practices.

Art. 39. - Both the extent of actions for prevention and surveillance, and their nature and quality may be in accordance with the risks associated to work in conditions of exposure to the ionising radiation.

Art. 40. – The work conditions in the controlled and monitored areas shall be revised periodically and only t in case of emergency, shall be revised by the authorisation holder.

Art. 41. – The legal regime of the controlled and monitored areas, may allow to the authorisation holder the implementation of the tasks assigned in this norms.

Art. 42. - (1) For every controlled and monitored area, may be nominated in writing, at least a responsible with the radiological safe which shall to answer for the application of this norms and of the specific regulations in respective area.

(2) The responsible with the radiological safe may be an authorisation possessor issued by CNCAN in the field and speciality in according with the practices which carry on in the controlled/monitored area.

(3) In certains cases, issued by CNCAN through the specific regulation, this position shall be ensured by a special department managed by an approved expert.

Requirements concerning the controlled areas

Art. 43. - The minimum measures which the holder may accomplish concerning a controlled area are as follows:

- a) shall delimit precisely the area, which should not be accessible only for the persons which have been trained adequately, and the access should be controlled in accordance with the written instructions of the authorization holder. In case of the significant risk for the extent of the radioactive contamination, shall be taken the special measures of prevention, including the control of the contamination at the entrance and the way out of persons and things and the ensurance of the decontamination of the persons and things;
- b) shall set up the radiological monitoring of the work environment relying on the nature and the proportion of the radiological risks from the controlled area;
- c) shall advertise obligatory the symbol of danger radiation provided in annexe nr. 5, as well as the indications concerning the type of the area, the nature of the sources and risks which these suppose;
- d) shall also establish and involve the instructions of work adapted to the radiological risk associated with the sources and performed operations.

Art. 44. - The acces and station in the controlled area have authorised the following categories of persons:

- a) professional exposed persons, nominated in writing from among their workers of the holder authorisation;
- b) outsider workers nominated in writting, only after the examination of the implementation of requirements by the professional exposed person and of the acquisition of the specific work instructions.

Art. 45. - (1) The acces and station in controlled area of other persons, than those provided in art. 44, is authorised only in following situations:

- a) if through the nature of tasks of work, the persons should work in controlled area, for a limited time and it is an writting procedure, which establishes the entrance and station conditions, so that shall prove that the respective persons shall not be exposed to the doses greater than those authorised for the persons from population;
- b) in case where, without existes an writting procedure, it may prove through the individual monitoring or other adequate methods as the dose limits for the persons from population are complied with.

Requirements concerning the supervised areas

Art. 46. - The measures which may ensured by the authorisation holder a supervised area are as follows:

- a) shall ensure the radiological surveillance of the working environment, relying on the nature and the extent of the radiological risks from the supervised area;

- b) shall display the signs indicating type of area, nature of the sources and their inherent risks;
- c) shall establish and involve the working instructions appropriate to radiological risk associated with the sources and the operations involved.

Art. 47. - For the implementation of the requirements concerning the controlled and supervised areas the authorisation holder has the duty to consult a qualified expert or an approved body of the radiological protection, which shall certifie the proposed area.

Classification of the professional exposed persons

Art. 48. - The professional exposed persons are classified in two categories:

- a) Category A: including the professional exposed persons for which exist a significant probability for receiving an effective annual dose or an equivalent annual dose greater than three tens from the limit of the respective provided in art. 22;
- b) Category B: including other persons than those provided in category A..

Information, training and the authorization of workers

Art. 49. - The authorization are obliged to ensure the information of the professional exposed workers and of the persons under training concerning:

- a) the risks which the spread activity involve on health;
- b) the general procedures of the radiation protection and the special required measures, concerning both the practices in general and any type of activity which may operate;
- c) the importance of complying with the technical, medical, administrative requirements;
- d) the need of pregnant woman and those who suckle to inform in writting, immediately, the authorisation holder about their situation, having in view the exposure risks for their foetus and the risk of contaminating the nursing infant in case of internal contamination of mother.

Art. 50. - (1) The holder authorisation are obliged to ensure the adequate training of professional exposed persons, in field of the radiological safe, and his recycling at least once at 5 years, through a sistem of training recognised by CNCAN.

(2) The first period of 5 years for the application of provisions paragraph (1) shall apply beginning on the date of coming into force of this norms.

(3) The authorisation holder are obliged to instruct the persons under training before the use or the manipulation by those of radiation sources.

Estimation and implementation of measures concerning radiological protection of professional exposed persons

Art. 51. - The authorisation holder shall responsible for assessing and implementing arrangements for the radiological protection of exposed workers.

Art. 52. - (1) The authorisation holder may consult the qualified experts or the approved bodies of radiological protection regarding the examination, the undertaking of radiation sources, of equipments and of radiological protection systems, as well as of the dosimetric measuring instruments.

(2) The consulting shall be made, in principal, for:

- a) prior critical examination of plans for nuclear objectives and facilities from the point of view of radiological safe;
- b) identification, in view of use, only of nuclear facilities and of radiological sources which has a radiological safe authorization;
- c) the acceptance of new or modified radiological radiation, only after the checking from the point of view of radiological safe ;
- d) regular checking of nuclear facilities, of radiological sources and of equipments, systems and techniques of protection efficiency;
- e) regular calibration' of measuring instruments and regular checking that they are serviceable and correctly used.

Radiological monitoring of the working environment

Art. 53. - (1) Radiological monitoring of the working environment, as provided for in art. 43 b) and in art. 46 a), may include, after case:

- a) the measurement of external dose rates, indicating the nature and quality of the radiation in question;
- b) the measurement of air activity concentration and surface density of contaminating, indicating the radionuclides nature and their physical and chemical states.

(2) The results of these measurements shall be recorded and shall be used, if necessary, for estimating individual doses. The term of the records keeping is established by CNCAN in the authorisation process.

Art. 54. – The system of the radiological monitoring of the working environment is approved by CNCAN in the authorisation process of the practice.

Individual monitoring of exposure to radiations of the professional exposed persons

Art. 55. - (1) The authorisation holder may ensure the systematic individual monitoring of all professional exposed category A persons .

(2) The monitoring may be accomplished by an approved dosimetric service.

Art. 56. - (1) In case where it is the possibility that the professional exposed category A persons are liable to receive significant internal contamination, the individual monitoring provided in art. 55 may include internal contamination monitoring of these persons.

(2) The identification of persons provided under paragraph (1) may be made by the consulting of an qualified expert or of an approved service of radiological protection.

Art. 57. - In case where individual measurements provided in art. 55 and 56 are impossible or inadequate, the individual monitoring shall be based

on an estimate arrived at either from individual measurements made on other exposed workers or from the results of the surveillance of the workplace provided for in art. 53.

Art. 58. - (1) The individual monitoring of the professional exposed category B persons shall be at least sufficient to demonstrate that such workers are correctly classified in this category, following afterwards shall not be necessary.

(2) In case of certain practices, CNCAN may impose that for the professional exposed category B persons it should be ensured the individual monitoring in accordance with the conditions established for the professional exposed category A persons.

Art. 59. – The monitoring system of the exposure to ionising radiation of exposed workers is approved by CNCAN during the authorisation process of the practice.

Monitoring of exposure to radiations in case of the accidental and emergency exposures

Art. 60. - In case of the accidental exposures, the authorisation may ensure immediatly for all involved persons the assesement of individual doses due both by to external exposure externe and to the intenal exposure, as well as the distribution of these doses in the body.

Art. 61. - In case of the emergency exposure the authorisation holder may ensure the individual dosimetric monitoring and/or the assesement of the received doses, according to the case.

Art. 62. - For the confirmation of the results of the d doses assessment arising after the accidental or emergency exposures, the authorisation holder may consult an qualified expert or an approved service of radiological protection.

Recording and reporting of the results of the individual monitoring of the exposure to radiations

Art. 63. - The authorisation holder may ensure the record containing the results of the individual monitoring for every professional exposed category A person or professional exposed category B person, for which CNCAN has imposed to ensure the individual monitoring, as well as for all persons submitted to accidental or emergency exposure.

Art. 64. - (1) The authorisation holder may ensure the custody of recording provided in art. 63 until the respective person has or would have attained the age of 75 years, but in any case not less than 30 years from the termination of the work involving exposure .

(2) In case of the repeal of the legal person authorisation holder, the documents provided in art. 63 shall be take over by the approved dosimetric service which has ensured the individual monitoring, which shall keep them in the conditions provided under paragraph (1).

(3) The record containing the results of the invidual monitoring shall include:

- a) recording of the measured or assessed individual doses, according to the case;
- b) reporting concerning the entriprised circumstances and actions in case of the accidental and emergency exposures;
- c) results of the radiological surveillance of the workplace, used for the doses assessment, whenever it was the case .

(4) The results of the individual monitoring of specially authorised exposures, of the accidental or emergency exposures may be recorded separately from those of the systematic individual monitoring.

Art. 65. - In case where the authorisation holder use the external workers, the task of the record containing the results of the individual monitoring shall incumbent both to the authorisation holder who use them and to the legal person out of whom belong the respective persons.

Art. 66. - (1) The holder authorisation shall solicit at the hiring of an professional exposed person a declaration concerning the prior received doses as professional exposed.

(2) The holder authorisation shall solicit from the last employer whom the respective person has been hired as professional exposed, the official sending of the extract from the dose evidence received from that person dose evidence.

Art. 67. - (1) OrganismeleThe approved dosimetric services may maintain the evidence of monitored professional exposed and of the doses accorded in the period provided in art. 64-paragraph (1), in the conditions established by the specific regulations issued by CNCAN.

(2) In case of the abrogation of the approved dosimetric service, this is obliged to hand over to CNCAN the documents of evidence of the invidual monitoring of all recorded persons.

Art. 68. - (1) CNCAN organise the centralised evidence of the doses recording for the professional exposed workers.

(2) The authorization holders and the approved dosimetric services are obliged to place at CNCAN's disposal the results of the individual monitoring.

Art. 69. – The authorisation holder are obliged to inform the involved person of results of his individual monitoring and to ensure the access of the involved person to the results of the measures which had been used for the dose assessment of the respective person and for the results of the radiological monitoring of the work environment used to assessment of the doses received from that person.

Art. 70. - Titularul de autorizatie are obliged to place at the approved medical practitioner's disposal the results of the individual results in view of the interpretation of the involvements of exposures to radiation concerning the state of health of exposed workers.

Art. 71. - In case of the accidental or emergency exposure as well as in case of the statement of any exceeding of the dose limits, the approved dosimetric service shall transmit immediately to the authorisation

holder the result of the individual monitoring, and that shall transmit immediately this result to the approved medical practitioner and to CNCAN.

Investigation and raporting of over exposures and abnormal exposures

Art. 72. - (1) As soon as an holder authorisation presume or has been informed that a person had an abnormal exposure or an over exposure as a result of the practices for which he is responsablel, he has the following obligations:

- a) shall make a first investigation including the preliminary value of the received doses;
- b) shall make a thoroughly investigation for the determination of the circumstances where the over exposure arised ;
- c) shall appraise the received dose on the basis of all available dates, inclusive on the basis of the results of the individual dosimetric measures and, if it is necessary, shall make the necessary arrangements to prevent the recurrence of such over exposures;
- d) shall notify immediately the affected person ;
- e) shall let know immediatly to CNCAN, the approved medical practitioner and the employer of the external worker (if the involved person is an external worker), on the presumed over exposure and the preliminary evaluated;
- f) shall draw up 10 days from the beginning of the investigation provided under the paragraph (1), a report on this event, which shall have the regime of keeping provided in art. 64, paragraph (1) and shall be send to persons provided under the paragraph e).

(2) If trough the investigation provided under paragraph (1)-a) it has established immediately and was not certainly an over exposure, the holder is not obliged anymore to comply with the rules provided under paragraph (1), but he shall be obliged to draw up a report which he shall keep at least 2 years.

(3) In process of appraisal and investigation provided under paragraph (1) b) and c), the authorisation holder shall consult an qualified expert or an approved service of radiological protection.

Art. 73. – The over exposures shall recorded in accordance with the provisions of art. 64, the paragraph (1).

Art. 74. – The professional exposed persons profesional which had an over exposure may continue to work in controlled zones if the medical contra-indication do not exist.

Art. 75. – The approved dosimetric services are obliged to inform immediatly CNCAN and the local medical authority on every exceeding of the dose limit which may be of concern.

General requirements concerning the medical surveillance of the professional exposed persons

Art. 76. - The medical surveillance of the professional exposed persons shall be made in accordance with the regulations established by Ministry of Health.

Medical conditioning of the use of the professional exposed persons

Art. 77. – No worker may be used in any circumstance as professional exposed person if he has not medical note which should certify that the respective person is fit to occupy the respective post.

The special medical surveillance of the professional exposed persons

Art. 78. - For the professional exposed persons which had been exposed to the superior doses to the dose limits provided in art. 22, shall be ensured a special medical surveillance, in accordance with the regulations issued by Ministry of Health.

Art. 79. - CNCAN shall verify the compliance of the conditions established by the approved medical practitioner concerning the ulterior exposure of the exceeding of the dose limits provided in art. 22.

The system of the protection against the ionising radiations

Art. 80. - (1) In accordance with the provisions of the Law 111/1996 concerning the safe display of nuclear activities, republished, the authorisation holder are obliged to set up and to maintain a system of protection against the ionising radiations.

(2) The system of protection against the ionising radiations involve at least the following measures:

- a) the use of the qualified experts or of an approved service of radiological protection, according to circumstances, in all situations where these is required by this norms;
- b) the compliance of the general principles provided in art. 37 from this norms;
- c) the elaboration and the implementation of a documents set which should regulate the display of the practice in accordance with this norms and the specific norms from the nuclear field;
- d) the use in practice only of the persons which have an authorisation available for the respective activity;
- e) The assignation of the responsibilities concerning the radiological safety in accordance with the provisions of the art. 42 from this norms.

The obligations of the professional exposed persons

Art. 81. - A professional exposed person are obliged to not be exposed and to not expose other personse to radiations exceeding the reasonable values necessary for the achievement of the service tasks.

Art. 82. -It is forbidden to the professional exposed persons to use the radiological sources or the nuclear facilities for other purposes than those which had been created and authorised, or for other works than those resulted from the service tasks.

Art. 83. - Each professional exposed person are obliged:

- a) to wear the individual equipment of the protection and the means of the individual monitoring;
- b) to let know immediately to the responsible with the radiological safety any breakdown discovered to the individual equipment of protection or to the warning system;
- c) to hand over immediately after the use, at the place of the keeping, the individual equipment of the protection and the means of the individual monitoring;
- d) to comply with the work instructions and the indications of the responsible with the radiological safety for the controlled or monitored zone;
- e) to be present at the examinations or the medical tests required by the approved medical practitioner, in work time and on employer expenses , and to give all details regarding the state of health required by the approved medical practitioner;
- f) to notify immediately, in writing inclusive, to the responsible with the radiological safety or to the authorisation holder management, whenever he has the very good reasons to believe that he or other person had an over exposure or that it is arised a special event as would be the loss/theft of a radiological source or nuclear facility, the radioactive material waste, the breakdowns which put in danger the radiological sources, nuclear facilities or the means of the protection integrity;
- g) in case where he is an external worker, to keep adequately the document of individual radiological monitoring, regarding his own radiological monitoring.

The obligatons regarding the transmission of the relative informations on the individual monitoring

Art. 84. – The authorisation holder and the approved dosimetric services, which have ensured the individual monitoring at the last work place of a professional exposed category A or B persons for the cases provided in the cases provided in art. 58, are obliged to ensure, at the request, the transmission of respective individual monitoring results for the authorisation holder which hires the respective person as professional exposed person.

Art. 85. - The authorisation holders and the approved dosimetric services are obliged to ensure the transmission to the adequate services from abroad, at their request, of the results of the individual monitoring of professional exposed persons in Romania who solicit to be staff as professional exposed persons in other countries.

The tasks of CNCAN concerning radiological safety assurance in controlled and monitored zones

Art. 86. – The enforcement of the provisions from this norms concerning the assurance of the radiological safety in the controlled and monitored zones are controlled by CNCAN in accordance with chapter, “Regime of control” from the Law 111/1996 on the safe deployment of nuclear activities, republished.

Art. 87. - CNCAN establishes through the specific regulations the requirements of approval for the qualified experts, the approved services of the radiation protection and the approved dosimetric services and verifies if are created the conditions for the training and the professional re-training of this specialists.

Operational radiological protection of the persons under training

Art. 88. – The exposure conditions and operational radiological protection of the persons under training, aged over 18 years, may be equivalents to that of the professional exposed category A or B persons, as appropriate.

Art. 89. - The exposure conditions and operational protection of persons under training, aged between 16 and 18 years, may be equivalents to that of the professional exposed category B persons.

Chapter VII SIGNIFICANT INCREASE IN EXPOSURE DUE TO NATURAL RADIATION SOURCES

The field of application

Art. 90. - The physical and legal persons which carries on the professional activities at the work places of kind of that provided in art. 3-paragraph (2) are obliged to identify through measurement and examination these workplaces and to evaluate the consequences.

Art. 91. – The following activities involve the presence of natural radiation sources which leads to a significant increase in the exposure of workers or of members of the public:

- a) work activities where the workers and/or members of the public are exposed to radon, thoron and those daughters, to gamma radiations or other nuclear radiations due to natural environment, in workplaces such as spas, caves, mines, underground workplaces or aboveground workplaces in identified area;
- b) work activities where are included extraction, processing, use or storage of materials not usually regarded as radioactive, but which contain naturally occurring radionuclides causing a significant increase in the exposure of members of the public or workers;
- c) work activities which leads to the production of residues not usually regarded as radioactive, but which contain naturally occurring radionuclides,

- causing a significant increase in the exposure of members of the public or of workers;
- d) aircraft operating.

Art. 92. - (1) If the estimation result provided in art. 90 establishes the increase in the exposure of workers and/or of members of public for the values which may not be disregarded from point of view of radiological protection, the legal or physical person are obliged to report the results to CNCAN and to obtain the framework of the activities carried on in the legal provisions.

(2) If the estimation result provided under paragraph (1) establishes the increase in the exposure of members of public, as a result of the ulterior introduction in economic and social circuit for the use or consumption, of products containing the natural radioactive substances, the legal or physical person which carries on the activity may obtain as a preliminary the authorisation of Ministry of Health, in accordance with the provisions of art. 38-paragraph (1) from the Law NR.111/1996 concerning the development in safety of nuclear activities, republished.

Radiation protection against exposure from terrestrial natural radiation sources

Art. 93. - For each work activity submitted to the authorisation system, the legal person which carries on the respective activity may take the following measures:

- a) the implementation of an adequate system for monitoring exposure;
- b) the application of protection measures against radiations in accordance with this norms;
- c) if CNCAN require the carrying out of an intervention, to ensure the implementation of corrective measures to reduce exposure, in accordance with the provisions of this norms referring to the interventions.

Radiological protection of air crews

Art. 94. – The legal persons who operate the aircrafts may be ensure the assessment of effective doses for the air crew.

Art. 95. – For the persons who could receive the doses more than 1 mSv per an, the legal persons which operate the aircrafts may take the following measures:

- a) to take into account the assessed dose when organising working schedules with a view to reducing the doses of highly exposed aircrew ;
- b) to inform the workers concerned of the health risks their work involves;
- c) to apply the provisions of the art. 23 referring to female crew.

Chapter VIII
IMPLEMENTATION OF RADIATION PROTECTION
FOR THE POPULATION IN NORMAL
CIRCUMSTANCES

Basic principles

Art. 96. – The authorisation holder shall ensure the best possible protection of the population based on the principles set out in the Chapter IV.

Conditions for authorisation of practices involving a risk from exposure to ionising radiation for the population

Art. 97. - In view of the assuagement of operational protection for the population, CNCAN:

- a) examines and approve the plans for nuclear facilities from the point of view of radiation protection;
- b) accepts into service of nuclear facilities involving any radioactive contamination liable to extend beyond the perimeter, taking into account , if relevant, demographic, meteorological, geological, hydrological and ecological conditions, according to circumstances;
- c) in framework of the authorisation process of practices where are possible emissions of radioactive effluents, assesses and approves the release plans of radioactive effluents, including the derived limits of emission of radioactive effluents and verifies in the practice time the respect of the respective plans;
- d) in framework of the authorisation process, assesses and approve, and in the practice time verifies the control and ensurement measures of phisical protection of radiation sources and radioactive materials.

Art. 98. – Accomplishment methods of that provided in art. 97 are established by CNCAN trough the specific regulations, relying on involved risk size, due to exposure.

Estimates of population doses

Art. 99. – For release or maintain a practice authorisation, CNCAN shall verify if:

- a) estimates of population doses , arising from all exposures resulted from the respective practice, inclusive from that potentials, are made correctly both for all population and ethnic groups, in all emplacements where such critical groups could arise ;
- b) analyse of probability and severity of potential exposures is made in accordance with the limits provided in this norms ;
- c) It exist an adequate system of evidence of relevant recordings for the population exposure and it is keeping the evidence on established duration in framework of authorization process of practice.

Art. 100. - (1) Estimates of doses provided in art. 99 a) may include, in relying of the radiological risks:

- a) assessment of doses due to external radiation , indicating, where appropriate, the quality of the radiation in question;

- b) assessment of the intake of radionuclides, indiacting the nature of the radionuclides and, where necessary, their physical and chemical states, as well as the determination of all activity and concentrations of these radionuclides, where appropriate;
- c) indication of the characteristics of critical groups and of doses that the reference groups of the population are liable to receive.

(2) The frequency of estimates of dose and of analyses provided in art. 99 a) and b), as well as the frequency of environment monitoring necessities for the confirmation of estimates of dose, may be in accordance with the requirements, which CNCAN shall establish in the authorisation process.

Inspection of population radiation protection

Art. 101. – In accordance with each competence, the services of inspection of nuclear activities follow the application of provisions concerning the ensurement of radiation protection of population, provided in Chapter IV, “Regime of control” from the Law 111/1996 on the safe deployment of nuclear activities, republished.

Obligations of authorisation holders

Art. 102. – The authorisation holder may organise the deployment of practice in accordance with the principles of population radiation protection inclusive through the accomplishment of following tasks:

- a) achieving and maintaining an optimal level of radiation protection of the environment and the population;
- b) periodically checking of the effectiveness of technical devices for protecting the population and the environment;
- c) using of apparatus, equipments and measure proceedings and assessment of exposure to radiations and of radioactive contamination of population and environment only as a result of a checking which should certify those capacity for achieving adequately the respective functions;
- d) ensurement for all measuring instruments used for radiation protection of the population and the environment, regular calibration, metrological checking and checking of their correct use.

Art. 103. - (1) The authorisation holder may ensure the radioactivity monitoring of factors of environment around the nuclear objectives, the depositing of radioactive waste and other important nuclear facilities which shall be established by CNCAN.

(2) The monitoring system of the factors of environment shall be approved by CNCAN in authorisation process.

Art. 104. - (1) For the nuclear objectives and other nuclear facilities with risk for accident with consequences for the population, it shall be establishes an Clereancezone and a zone with reduced population, where are taken the Clereanceasures, respectively restriction of emplacement of permanent residences for population and of deployment of social economic practices.

(2) The criteria regarding the establishment of the two zones are based on definition of release in

environment of fission products and of dose objectives for the nuclear accident, which are specified by CNCAN in his norms.

Art. 105. - For the implementation of the obligations assigned concerning the population radiation protection, the authorisation holder are obliged to appeal to the services of qualified experts or of approved bodies of radiation protection.

Chapter IX TRANSFER IN ENVIRONMENT OF RADIOACTIVE WASTE

Basic principle

Art. 106. – The protection against negative consequences of ionising radiations over environment is realised through:

- a) interdiction of transfer of solid radioactive waste in environment;
- b) interdiction of release in environment of liquid or gaseous radioactive waste which have the total activities or the concentration of activity superior of the derived limits of emission of radioactive effluents approved by CNCAN in accordance with the provisions of art. 20.
- c) optimization of releases in environment of liquid or gaseous radioactive effluents.

Control of transfer in environment of radioactive waste

Art. 107. - As exception from the provisions of art. 106, a) and b), the transfer in environment of radioactive waste may be made control over:

- a) by authorized special units by CNCAN for the final disposal of radioactive waste;
- b) only for solid waste, and only for total activities, concentrations of activity and contaminations of surface, inferior to values established by CNCAN trough the specific regulations, trough the system of collecting and evacuation of industrial waste.

Art. 108. - (1) The authorisation holders are obliged to hand over to authorised bodies for collecting, treating and conditioning of radioactive waste all radioactive sources which are not used more in framework of the respective practice and all radioactive waste resulted from respective activity.

(2) If the authorisation holder for a certain practice is he himself authorised for the treating, conditioning, intermediary depositing or final disposal of own waste, he may realise this practice at the term and with the regularity imposed by authorisation.

Release of radioactive effluents

Art. 109. - (1) The release in environment of liquid or gaseous radioactive effluents may be made only in compliance with the derived limits of release approved by CNCAN, in accordance with provisions of art. 20 and of conditions concerning the evidences, reports and announcing, provided in this norms.

(2) For the liquid effluents may be also accomplished the condition that the radioactive residues should be under the form of neutral solution and perfectly miscibles with the water.

Art. 110. - The eliminate of liquid radioactive effluents in public sewerage may be made only if are accomplished cumulative the following conditions:

- a) eliminate is provided expressly in authorisation issued by CNCAN;
- b) radioactive residues are under the form of neutral solutions and perfectly miscible with the water;
- c) total activities and activity concentrations are inferior to derived limits of evacuation in public sewerage of liquid radioactive effluents approved by CNCAN in accordance with the provisions of art. 20.

Art. 111. - If are not accomplished the conditions of evacuation from art. 109, the authorisation holder are obliged to take measures of temporary depositing of liquid or gaseous radioactive waste, which concerns:

- a) if the radionuclides have a short life, it is expected the accomplishment of conditions from the art. 109 and the waste are eliminated as radioactive effluents. In case of liquid waste, the eliminate shall be made at the sewerage of the unit connected to the public sewerage, only if are also accomplished the conditions provided in art. 110;
- b) for the other cases, the radioactive waste shall be transferred to an authorised body for treating of liquid or gaseous radioactive waste or shall be treated even by the organisation producing the waste, if that is authorised for this practice.

Art. 112. - The eliminate of liquid radioactive effluents by the authorised bodies which realise the waste treating may be made only in conditions provided in art. 109 and only if the activity concentrations per volume unit of receiving water, after dilution, accomplish the conditions established in the authorization process.

Chapter X RADIATION PROTECTION IN INTERVENTIONS

Field of application and of principles

Art. 113. -The disposals of this chapter shall apply for the intervention in case of radiological emergency or in case of chronic exposure resulted as a resulted of an radiological emergencies or of an professional practice from the past and which has lead to an unacceptable increasing of the exposure.

Art. 114. – The radiation protection system concerning the intervention shall be considered in compliance with the following principles:

- a) intervention shall be undertaken only if the reduction in detriment due to radiation is sufficient to justify the possible harm which may be produced by the intervention, as well as the costs of intervention, including that socials;
- b) form, scale and duration of intervention shall be optimized so that the benefit of the reduction in

health detriment due to radiations, less the detriment associated with the intervention, will be maximized;

- c) dose limits provided in Chapter IV shall not apply to interventions, with the exceptions of the situations of chronic exposures, case where the dose limits provided in art. 22 shall apply for the persons participating to the intervention;
- d) interventions actions are taking place if the avoidable dose through the respective action is superior to the intervention levels which should be provided as indications in intervention plans.

General requirements

Art. 115. – Intervention planning, preparation and execution for the radiological emergencies which may arise because of practices carried on in country or in abroad shall be made on the basis of specific regulations issued by CNCAN.

Art. 116. - CNCAN establishes the agreements with the counterpart authorities from the neighbouring states in view of the intervention organisation in case of boundary radiological emergency which should arise, indifferent of those origin.

Potential exposures

Art. 117. - The authorisation by CNCAN of any practice shall be made, where appropriate, if the authorisation solicitor:

- a) takes in consideration the radiological emergencies which could arise in course of the respective practice;
- b) assesses the spatial and temporary distribution of radioactive substances dispersed in the event of possible radiological emergencies;
- c) assesses the potential exposures corresponding of these radiological emergencies.

Intervention planning and preparation

Art. 118. - (1) The intervention planning in event of a radiological emergency consists in existence of an adequate intervention plan, at all necessary levels, as result of the emergency extent.

(2) The intervention plans shall be drawn up taking account of the principles of radiation protection for intervention referred to in art. 114 and of intervention levels recommended in specific regulations, elaborated in accordance which the art. 115.

(3) The interventions may be tested to an appropriate extent at regular intervals.

(4) The public authorities may create and train correspondingly the special teams for technical, medical and health intervention in case of radiological emergency.

Art. 119. – The intervention plan may provide the intervention form, the technical obligations of workers, the risks for the involved workers health, the means of protection and of the individual dosimetric and of the environment where the intervention takes place monitoring , as well as the nomination of persons wick can approve the emergency exposure.

Implementation of intervention

Art. 120. - The authorisation holder are obliged to make provision for the immediate notification concerning any radiological emergency occurring to his objective or nuclear facility, in accordance with the disposals of specific regulations provided in art. 115 and to require all appropriate actions to reduce the consequences of the radiological emergency, in accordance with the provisions of the intervention plan in the event of an emergency.

Art. 121. - (1) For the adequate accomplishment of own tasks concerning the intervention, the authorisation holder are obliged to made an initial provisional assessment of the circumstances and the consequences of the radiological emergency, for the adequate accomplishment of the own tasks concerning the intervention, and to her communicate immediately to its competent authority, for the correct dimension of the response of the other bodies involved in the intervention.

(2) In accordance with the provisions of the intervention plans, the authorisation holder shall also participate to the ulterior assessment.

Art. 122. - (1) the interventions in event of a radiological emergency have as object, where appropriate:

- a) the source, to reduce or stop the direct radiation and emission of radionuclides;
- b) the environment, to reduce the transfer of radioactive substances to individuals;
- c) individuals, to reduce exposure and organise the treatment of victims.

Art. 123. – All parts involved in intervention may assess and records the consequences of radiological emergency as well as the effectiveness the intervention.

Art. 124. - In the event of a radiological emergency in Romania which may also affect other countries, or in event of a radiological emergency outside its territory which may affect territory of Romania, it shall be also respected the international convention provisions where Romania is involved.

Emergency exposure

Art. 125. - (1) In the event of the emergencies, for rapid actions of help of the persons in danger, of prevention of exposure to radiations of a big number of people or of help of a facilities or value goods, it may be surpassed the annual limits dose established in art. 22 for the professional exposed persons.

(2) In the events provided under paragraph (1), the dose limits provided in art. 22 are replaced with levels the dose limit for emergency exposures, included in the intervention plans and approved by CNCAN in the authorisation process.

(3) For exceptional situations, such as grave dangers against to human live, the dose limit levels provided under the paragraph (2), for the emergency exposures may be surpassed.

Art. 126. - (1) The participant persons to the actions of the type those provided in art. 125-paragraph (1) are

the informed volunteers about the risks involved in their actions.

(2) These persons are nominated in the emergency plan and shall be prepared specially to minimise the dozes resulted of the interventions.

Art. 127. – The persons involved in the interventions of the type of those provided in art. 125-paragraph (3) shall respect the principles of the justification and the optimisation of the exposure in the event of the interventions, provided in art. 114 paragraph a) and b) and the values of the arising of the determinate effects provided in the specific regulations elaborated by CNCAN referring to the intervention planning, preparation and operation.

Art. 128. - The persons from the intervention teams shall be subjected to the individual dosimetric monitoring and shall benefite by the corresponding medical surveillance.

Intervention in cases of lasting exposures

Art. 129. - (1) If it has identified a situation leading to lasting exposure resulting from the after-effects of a radiological emergency or a practice or professional activity from the past, which lead to a unacceptable increase of the exposure, the proprietor of land or buildings may inform CNCAN about the raised situation.

(2) CNCAN can dispose, proportionally with the exposure risk involved, the following measures:

- a) demarcation of the interest perimeter;
- b) assurance of a system of exposure monitoring;
- c) assurance of an corresponding intervention measures, taking account of the real characteristics of the situation;
- d) Regulation of the use of the lands or the buildings situated in the delimited perimeter, as well as of the access in that interior.

Art. 130. – The proprietary of the land or of the buildings may ensure the accomplishment of the measures disposed in accordance with art. 129, paragraph (2).

Chapter XI OTHER EVIDENCES, RAPPORTS, ANNOUNCEMENTS

Evidences

Art. 131. - (1) The authorisation holder shall take the strict and daily evidence of entrances, issues, circulation and consumption of the radiation sources, radioactive materials and the nuclear facilities.

(2) The authorisation holder shall take the strict and daily evidence of the radioactive waste resulted within of the authorised practice, of the radioactive waste transferred to the legal persons authorised for their treatment and final disposal, as well as of the radioactive effluents eliminated in the environment.

(3) The contain of evidences is established within specific norms or authorisation process.

Art. 132. – The authorisation holder may keep the evidences provided in art. 131 paragraph (1) and (2) and after the stoppage of practice, on the minimum period of 20 years, if trough the specific regulations it does not foresee in another way.

Rapports

Art. 133. The authorisation holder shall present to CNCAN the periodical rapports, including the principal aspects concerning the radiological safety within the authorised practice, in accordance with the provisions of the specific norms or of the authorization.

Announcements

Art. 134. - (1) The authorisation holder shall notify immediately to CNCAN in the event of:

- a) release of gaseous or liquid radioactive effluents over the derivative limits of emission established in the authorisation and/or in the authorisation documentation;
- b) releases of the radioactive effluents bellow the derivative limits of emission of the radioactive effluents, if the authorisation and/or the authorisation documentation foresees this thing.

(2) The authorisation holder shall notify immediately to CNCAN, to the medical local authorities and to the police, from the territory where it took place the event, any lost or theft of nuclear facilities, radiation sources or radioactive materials.

Chapter XII TRANSITORY AND FINAL DISPOSALS

Art. 135. –The authorisations issued before the coming into force of this norms keep his validity, but no more than 2 years from the coming into force of this norms.

Art. 136. –The persons, who worked as professional exposed persons before the coming into force of these norms, shall be considered for the respective period as professional exposed category persons.

Art. 137. – Until the issue of the regulations provided by the law, the professional exposed persons who possesses the practising level 2 authorisation, issued by CNCAN, may be nominated as persons responsible with the radiological safety for the controlled and surveyed zones where carries on the practices from the field and the speciality for which is valid the practising authorisation.

Art. 138. - (1) The persons with the superior studies of speciality, possessors of a practising level 2 authorisation, valid, may carry on the activity as qualified experts in the field and the speciality for which is valid the practising authorisation, if, resulting

from an individual solicitation, have obtained, beforehand, the accord of CNCAN.

(2) The duration of the activity provided under the paragraph (1) is at the most 3 years from the coming into force of these norms.

Art. 139. – Within an year from the coming into force of this norms, the services of individual dosimetric surveillance, shall obtain the accreditation in accordance with the specific regulations, as the accredited dosimetric services.

Art. 140. - (1) The period of a year for which is applied the doses limitation in accordance with the provisions of this norms, coincide with the calendar year.

(2) If the exposure begin at the other date, it is considered that it was respected the system of doses limitation, if, the dose received until the end of the calendar year, does not surpass the value obtained trough the multiplication of the number of the months remained until the end of the respective year (rounded by addition) with 1.8 mSv.

Art. 141. – Within the authorisation process, at the solicitation of the authorisation holder, CNCAN may establish more dates of the period beginning of an year for which it is applied the doses limitation.

Art. 142. – The annexes 1, 2, 3, 4 and 5 are integrant part of these norms.

DEFINITIONS

Nuclear accident: nuclear event, which affects the facility and causes the irradiation or the contamination of the population or environment above the limits allowed by regulations in force.

Activation: process by which a stable nuclide bombarded with particles or photons is transformed into a radioactive nuclide.

Activity (A): the number of radioactive nuclide, which are disintegrated in the interval of the time:

$$A = \frac{dN}{dt}$$

where dN represents the number of the radioactive nuclide which are disintegrated in the interval of time dt .
The measurement unit of A activity A is becquerel.

Authorisation: a document issued by CNCAN, to a legal person, of its request, through which it is allowed the deployment of a practice or an other activity in the field of application of these norms;

Becquerel (Bq): special name of the unit of activity. One becquerel is equivalent to a desintegration on the second.

Exposure pathways: the pathways through which the radioactive material reaches, or can irradiate, the human body.

Nuclear fuel: material or mechanical assembly containing nuclear raw material or fissionable material, specially destined to be used in a nuclear reactor for the purpose of producing nuclear energy.

National Commission for the Control of Nuclear Activities (CNCAN): is the national competent authority in the nuclear field which exercise the attributions of regulation, authorisation and control in accordance with the Law 111/1996 safe deployment of nuclear activities, republished in 1998.

Dose constraint: a constraint imposed on the doses that the persons can possibly receive from a certain radiation source and which is used for the design of radiation protection, in the purpose of optimization of radiation protection and of the respect of dose limits in the event of the cumulative exposure to radiation, due to more practices, and/or to more radiation sources within the same practice and/or emissions of effluents produced in the course of time.

Radioactive contamination: the contamination of my material, surface, environment or of an individual with radioactive substances; in the specific case of the human body, the radioactive contamination includes both the external skin contamination and internal contamination, whatever is the route of intake.

Radioactive waste: those materials raised from nuclear activities for which no use was provided and which contain or are contaminated with radionuclides.

Health detriment: an estimate of the risk of reducing in length and life quality following the exposure to the ionising radiations; are included the losses due to somatic effects, cancer and sever generic disorder.

Disposal of radioactive waste (includes also the final disposal of spent nuclear fuel for, which is not provided an other use): emplacement and keeping of radioactive waste in an arranged repository or a certain location, without the intention to be retrieved. The notion of final disposal of radioactive waste covers also the approved direct discharges, of radioactive effluents into environment.

Absorbed dose (D): fundamental dosimetric dimension defined as average energy imparted by the ionising radiation to the irradiated mass unit:

$$D = \frac{d\varepsilon}{dm}$$

where:

- $d\varepsilon$ is the average energy imparted by the ionizing radiation to the matter in a volume element
- dm is the mass of the matter in this volume element.

In the purpose of these norms, the absorbed dose means the dose averaged over a tissue or an organ.
The measurement unit for the absorbed dose is the gray (Gy).

Equivalent dose $H(T)$: the absorbed dose, in tissue or organ T, weighted for the quality of radiation R. It is given by the expression:

$$H_T = w_R D_{T,R}$$

where:

- $D_{T,R}$ is the absorbed dose averaged over on tissue or organ T, due to R radiation,
- w_R is the radiation weighting factor.

In the event where the radiation field is composed of more types of radiations having different energies (different values of w_R), the total equivalent dose, H_T , is given by the relation:

$$H_T = \sum_R w_R D_{T,R}$$

The appropriate values w_R are specified in Anexa 3.
The measurement unit for the equivalent dose is the sievert (Sv).

Effective dose (E): the weighted sum of the equivalent doses raised from the external and internal exposure, in all tissues and organs specified in the Annex 3. It is defined by the expression:

$$E = \sum_T w_T H_T = \sum_T w_T \sum_R w_R D_{T,R}$$

where:

- $D_{T,R}$ is the absorbed dose average over tissue or organ T, due to radiation R,
- w_R is the radiation weighting factor,
- w_T este is the weighting factor for tissue or organ T.

The measurement unit for the effective dose is the sievert.

Committed equivalent dose ($H_T(\tau)$): integral over time (τ) of equivalent dose rate in organ or tissue T of a human body which will be received as result of an intake. For an intake at time τ_0 it is defined by the formula:

$$H_T(\tau) = \int_{\tau_0}^{\tau_0+\tau} \dot{H}_T(t) dt$$

where:

- τ_0 is the intake moment,
- $\dot{H}_T(\tau)$ is the equivalent dose rate in organ or tissue T, due to respective intake ,
- τ is the time over which the integration is performed.

When the time it is not specified, it is presumed equal with 50 years- for the adults, respectively with the duration from the intake moment until reaching the age of 70 years – for children.

The measurement unit for the engaged equivalent dose is the sievert.

Committed effective dose $E(\tau)$: weighted sum of committed equivalent doses by the organ and tissue of a human body ($H_T(\tau)$) as result of an intake; each of the committed equivalent doses by an organ or tissue is weighted with the respective organ or tissue weighting factor w_T (see the Annex 3).

$$E(\tau) = \sum_T w_T H_T(\tau)$$

where:

- τ is the time over which the integration is performed (see the definition of committed equivalent dose).

The measurement unit for the committed effective dose is the sievert.

Preventable dose: dose whose receiving can be avoided by an intervention measure; it represents the difference between the received dose in the absence of intervention measure and the received dose in the event of implementation of respective measure.

Determinist effect : the loss of tissual function as result of living organism irradiation with radiation ionising over a certain dose, named threshold, and over that the effect severity increase with the dose.

Radioactive effluents: radioactive substances under the liquid or gaseous form released and dispersed in the environment.

Qualified expert: a person having the necessaries knowledge and training needed to carry out the physical, technical or radiochemical tests which allow the doses evaluation and/or for give advice in order to ensure an effective protection of individuals and the correct use of protective equipments and whose the capacity to act as expert in this sens is recognised by CNCAN. This recognition consists in issuing of exercising permit, in accordance with the specific regulations issued by CNCAN.

Exposure: the irradiation process of a person.

Accidental exposure : an exposure of individual radiation as result of an accident (it does not include the emergency exposure).

Abnormal exposure : an exposure due carried out activity, where, the received dose in real time exceeds significantly the foreseen dose to be received because of the respective activity; the accidental and emergency exposures are considered abnormal exposures even in the case where no overexposures are.

Chronic exposure : a situation of lasting exposure , as result of a radiological emergency or a past or old practice or professional activity leading to an unacceptable increasing of doses.

Emergency exposure : radiation exposure of individuals performing rapid actions for helping individuals in danger, prevention of radiation exposure of a large number of people or saving of facilities or value goods and where some dose limits for professional exposed persons can be exceeded. Emergency exposure shall be applied only to volunteers.

Potential exposure: radiation exposure which is not expected to be certainly produced, but which can appear following a nuclear accident or, more generally, of an event or sequence events of probabilistic nature involving radiation exposure.

Background radiation: radiation:

- a) due to natural radionuclides contained in the human body and unincorporated as result of a practice;
- b) cosmic radiation at the ground level;
- c) the presence above the ground, due to natural radionuclides from the unperturbed geological environment.

Gray (Gy): the special name of the unit of absorbed dose. One Gray is equal to one Joule per Kilogram:

$$1 \text{ Gy} = 1 \text{ J kg}^{-1}$$

Critical group: a group of members of public, reasonably homogenous concerning its exposure to a certain radiation source and a certain exposure pathway, and which receives the highest effective dose (or equivalent dose, as the case may be) by this exposure pathway and from this source.

Intake:

- a) qualitative meaning – there is the process of body penetration of radionuclides from the environment;
- b) quantitative meaning – activities of radionuclides penetrating the body, from the environment.

Nuclear facility:

- facility producing ionosing radiation, and/or
- facility, apparatus or device extracting, producing, processing or containing radioactive substances.

The nuclear facility also includes related buildings or structures.

Intervention: any activity that prevents or decreases the exposure or probability of exposure to sources which are not part of a practice under control or to sources which are out of control, as a result of an accident.

Dose limits: maximum references laid down for the annual dose resulting from the exposure to ionising radiation, over the natural background, referred to in these norms; the limit shall apply to the sum of doses from external exposures in the specified period and the committed doses from intakes of radioactive substances in the same period.

The dose limits referr to: effective dose, equivalent dose for lens of the eye, equivalent dose for skin and equivalent dose for the hands extremities (forearms, palms, fingers) and feet extremities (ankles, feet, toes); the values of dose limits are established in Chapter IV.

Derived limits (of emission of radioactive effluents or radionuclides concentration in air or water); limit values for the activity or activity concentration, established by the authorisation holder by means of a qualified expert or of an approved occupational health service, with a view of compliance with the dose limits for the occupational exposed workers and/or for the members of public, or of the compliance with dose constraints; the derived limits are approved by CNCAN during the authorisation process.

Outside workers: an occupational exposed individual carrying out activities in controlled area owned by another authorisation holder than the organisation to which the respective person belongs.

Radioactive material: any material containing radionuclides which activity or specific activity can not be disregarded from radiation protection point of view.

Approved medical practitioner: a medical free practitioner, responsible, under these norms, for the medical surveillance of occupational exposed workers, and whose capacity to act in this respect is recognised by the Ministry of Health.

Intervention level: a value of preventable dose equivalent, of preventable effective dose or of a derived quantity at which intervention measures should be taken into account; value of preventable dose or of a derived quantity is only that associated with the exposure pathway for which the intervention measure is applied.

Clearance levels for the authorisation requirements: values established by CNCAN, expressed in the terms of activity concentration and of surface activity below which the radioactive materials arising from any practice subject to the authorisation requirements can be released from the requirements of these norms.

Exempting levels: values established by CNCAN, expressed in terms of total and specific activity, below which the practice is exempted from the authorisation requirements of these norms.

Nuclear objectives: any nuclear reactor, whatever the power is, including critical and sub-critical assemblies, facilities for nuclear fuel fabrication, repositories for nuclear spent fuel storage and final disposal.

Approved occupational health service: a body carrying out activities related to the radiation protection of occupational exposed workers and/or members of the public and whose capacity to act in this field is recognised by CNCAN.

Approved dosimetric body: a body responsible for calibration and verification of instruments for individual dosimetric monitoring and for reading and interpretation of their indications, or for radioactivity measurements in the human body or in biological samples, or for the doses assessment and assignment, whose capacity to act in this way is recognised by CNCAN

Exercising permit: the document which shall be owned, according to the provisions of Law No. 111/1996, republished, by any individual used by the authorisation holder, in practices subject of the respective authorisation. The exercising permit shall be valid for the activities carried out by the respective individual.

Occupational exposed worker: a person hired at a commercial society (eventually his own society), who is subject to exposure arising due to activities carried out within a practice under the incidence of these norms, exposures which, summing up a year, can exceed the dose limits provided for the members of the public.

Member of the public:

- a) any individual from population, in general;
- b) the representative individual from a critical group, in case of verification of the compliance with the annual limits of doses for the members of the public.

Person under training: a pupil, apprentice or student over 16 years old, being under practical and theoretical training, under the responsibility of an authorisation holder, in the purpose of acquiring knowledge in the nuclear field.

Practice: any human activity which can increase the exposure of individuals to radiation from artificial sources, or from any electrical equipment generating ionising radiation or produced by natural sources (where natural radionuclides are processed, taking into account their properties of radioactive, fissile or fertile substances), except emergency exposures.

As practices there are mentioned, without considering the list as exhaustive: the production, processing, use, handling, holding, storage, transportation, supplying, renting, transfer, transit, import, export, disposal of radiation sources and of radioactive materials, as well as extraction and processing of uranium or thorium ores.

Radionuclide: radioactive nucleus

Ionising radiation: emission and propagation, involving energy transportation, of particles or electromagnetic waves having the wave length of maximum 100 nano-meters, the ionising radiation is able to produce ions, directly or indirectly.

Operational radiation protection of occupational exposed workers (members of the public): represents the ensemble of measures, disposals and controls which contribute to the identifying and Clearance of factors which, during the carried out practice, are liable to create for the occupational exposed workers (members of the public), an exposure risk not negligible from the point of view of radiation protection.

Responsible with radiological safety: the individual who is responsible for the application of the provisions of these norms and of specific regulations in the controlled area and in the adjacent supervised area.

Radiological safety: assurance of human being protection against the radiation exposure and of safety of nuclear facilities and of radioactive sources, including the provision of means for achieving this protection and safety and of means for accidents prevention and of mitigation of their consequences, once the accidents are produced; the nuclear objectives and radiation sources safety presenting criticality risk, is treated by the nuclear safety.

Sievert: special name of the unit of equivalent or effective dose. One Sievert is equivalent to one Joule per Kilogram.

$$1 \text{ Sv} = 1 \text{ J kg}^{-1}$$

Overexposure: an exposure leading to the exceeding of one of dose limits.

Radiation source: any ionising radiation emitter, including any radioactive material and any generating ionising radiation device.

Unsealed source: a radioactive source which is not complying with the condition of sealed source.

Sealed source: a radioactive source whose structure is such as to prevent, under normal conditions of use, any dispersion of the radioactive materials into the environment.

Radioactive source: an ionising radiation emitter due to the contained radioactive materials.

Artificial sources: radiation sources produced as result of human practice.

Natural sources: radioactive sources with natural origin (terrestrial or cosmic).

Treatment and conditioning of radioactive waste: succession of technological processes by which the radioactive waste are transformed into a stable and non-dispersible form, form which is adequate for long term storage or final disposal.

Authorisation holder: any legal person who has obtained, from CNCAN, an authorisation for carrying out a practice or another activity from the field of these norms.

Radiological emergency: consecutive situation of a nuclear accident or of another event involving radiation sources which require an emergency activity for protection of occupational exposed workers, members of the public or population, either partially or entirely.

Controlled area: an area subject to special rules for the purpose of protection against ionising radiation or of preventing the radioactive contamination mitigation and to which access is controlled.

Clearance area: area around a nuclear objective or another nuclear facility with accident risk, with consequences against population, established by the authorisation holder and approved by CNCAN, where clearance measures are taken for siting of permanent residences for population and for carrying on economic and social activities, which are not directly related to the operation of the respective nuclear objective or respective nuclear facility

Area with reduced population: area around a nuclear objective or another nuclear facility with accident risk, with consequences against population, established by the authorisation holder and approved by CNCAN, where restricting measures are taken for siting of permanent residences for population and for carrying on economic and social activities.

Supervised area: an area subject to the adequate surveillance in the purpose of protection against ionising radiation.

ANNEX NO. 2

CLEARANCE AND EXEMPTING REQUIREMENTS AND CRITERIA

1. The clearance requirement from the application of the provisions of art.4 c), is that, for all the lines of table 2-A referring to the involved materials, objects, waste or wastewater, to be accomplished line condition.

The line condition is accomplished, if at least one of the provided values from the line is not exceeded.

2. The clearance levels from Table 2-B, column 2, are deduced supposing that ingestion of one kilogram of material shall conduct to a committed effective dose of $10\mu\text{Sv}$. In case where the deduced clearance level exceeds one of the exempting levels, the deduced clearance level has been replaced with the exempted one.

3. The levels of superficial contamination from Table 2-B, column 3, are mediated values on 100 cm^2 . For the calculation of these levels it has been considered the most unfavorable case resulted from the following hypotheses:

a) skin irradiation during 8760 hours per year leads to an effective dose of $0,5\text{ mSv}$ per year;

b) daily ingestion of the activity which could be found on 10 cm^2 of hand area leads to a committed effective dose of $0,5\text{ mSv}$ per year;

c) inhalation of the entire activity on 100 cm^2 leads to a dose of 5 mSv per year.

4. In case of radionuclides mixtures, the clearance level from Table 2-B, column 3, respectively the contamination level from Table 2-B, column 3, are considered to be complied with, if the sum of proportions between the real values and the levels for each radionuclide, provided in the respective columns, is lower than 1.

5. The fundamental criteria taken into account for exempting the practices from the authorisation system, are as follows:

a) radiological risks for a person, caused by the exempted practice, shall be sufficient low in order not to present regulation interest;

b) collective radiological impact of the exempted practice shall be low enough in order not to present regulation interest;

c) the exempted practice is intrinsic without radiological significance, meaning with insignificant probability of arising for scenarios which could lead to the uncompliance with criteria a) and b)

6. A practice can be exempted from the authorisation system requirements without an additional assessment, in accordance with the provisions of art. 8 para. a) and b) if either the total activity or the concentration of activity of the involved radionuclides does not exceed the exempting level mentioned in column 5, respectively in column 4 of the table 2 – B.

7. Exceptionally, as it is provided in art. 8 para. a) and b), CNCAN may decide the exemption of a practice without an additional assessment, in accordance with the fundamental criteria, even if the exempted levels from Table 2-B are exceeded, provided that the following criteria should be cumulatively achieved in all the foreseeable situations:

a) committed annual effective dose for any individual from population due to the respective practice to be of $10\mu\text{Sv}$ or lower;

b) either the committed collective effective dose during one year of the respective practice does not exceed 1 manSv , or an assessment of radiation protection optimization to lead to the conclusion that exception is the optimum solution.

8. In all cases in where the practice involves more radionuclides, including radionuclides mixtures, the exempting levels from the requirements of the authorisation system shall be deduced by the application of the summing criteria below mentioned:

a) the sum of proportions between the real total activities and the exempting levels from column 5 of Table 2-B or assigned by CNCAN according to the provisions of para. 7, for all the radionuclides involved in practice, shall be lower than 1.

b) the sum of proportions between the real values of the activities concentrations and the exempting levels from column 4 of Table 2-B or assigned by CNCAN according to the provisions of para. 7, for all the radionuclides from mixture, shall be lower than 1.

9. The clearance and exempting levels for the total activities from Table 2-B, or those assigned by CNCAN according to the provisions of paragraph 7, respectively the requirement under paragraph 8 a), refer to the total inventory of radioactive substances held by a physical or legal person, at any time.

10. Nucleus marked with “ * “ or “nat” in Table 2-B represent precursor nucleus in equilibrium with their daughters and are listed in Table 2-C. In this case, the values from Table 2-B given as referring only to the precursor nucleus, are already taking into account the presence of their daughters.

11. For the radionuclides which are not listed in Table 2-B, as well as for the radionuclides listed in Table 2-B, but for which exclusion or contamination levels are not assigned, CNCAN shall assign the adequate levels, as the case may be.

TABLE 2-A**1. Materials and objects**

Solid substances	-	-	Ambient dose rate at 10 cm from surface, after the background (0,1 $\mu\text{Sv/h}$) is released
Solid substances	-	-	Contamination level from the table 2-A, col.3.
Liquids	Clereance level from the table 2-B, col. 2	Clereance level from the table 2-B, col. 2	-
Water	In accordance with the regulations of the Ministry of Health	-	-
Food products	In accordance with the regulations of the Ministry of Health	-	-
Consumer goods destined to population	In accordance with the regulations of the Ministry of Health	-	-
Minerals, minerals and stones collections	1000 times the clearance level from the table 2-B, col. 2	10 g natural thorium or 100g natural uranium	-

2. Waste and wastewaters

Waste, wastewaters	Specific activity	Activity	Contamination, dose rate
Solid waste	The clearance level from the table 2-B, col. 2	100 times clearance level from the table 2-B, col. 2., per month, at release into environment	-
Solid waste	-	-	Ambient dose rate at 10 cm from surface, after the background (0,1 $\mu\text{Sv/h}$) is released
Solid waste	-	-	Contamination level from table 2-A, col.3.
Liquid waste	The clearance level from table 2-B, col. 2	100 times clearance level from table 2-B, col. 2., per month, at release into environment	-
Used water	1% from clearance level from table 2-B, col. 2., (as weekly average in wastewaters of work area)	100 times clearance level from table 2-B, col. 2., per month	-
Waste under gaseous form (bottled)	-	The exempting level from table 2-B, col.5.	-

TABLE 2-B

Nuclide	Clearance level (Bq/kg or Bq)	Contamination level (Bq/cm ²)	Exempting level (Bq/g)	Exempting level (Bq)
1	2	3	4	5
H-3	2 E+05	1000	1 E+06	1 E+09
Be-7	4 E+05	1000	1 E+03	1 E+07
C-14	2 E+04	30	1 E+04	1 E+07
O-15	-	3	1 E+02	1 E+09
F-18	1 E+04	3	1 E+01	1 E+06
Na-22	3 E+03	3	1 E+01	1 E+06
Na-24	1 E+04	3	1 E+01	1 E+05
Si-31	6 E+04	3	1 E+03	1 E+06
P-32	4 E+03	3	1 E+03	1 E+05
P-33	4 E+04	10	1 E+05	1 E+08
S-35	4 E+04	30	1 E+05	1 E+08
Cl-36	1 E+04	3	1 E+04	1 E+06
Cl-38	1 E+04	3	1 E+01	1 E+05
Ar-37	-	1000	1 E+06	1 E+08
Ar-41	-	3	1 E+02	1 E+09
K-40	2 E+03	3	1 E+02	1 E+06
K-42	2 E+04	3	1 E+02	1 E+06
K-43	1 E+04	3	1 E+01	1 E+06
Ca-45	1 E+04	10	1 E+04	1 E+07
Ca-47	6 E+03	3	1 E+01	1 E+06
Sc-46	7 E+03	3	1 E+01	1 E+06
Sc-47	2 E+04	3	1 E+02	1 E+06
Sc-48	5 E+03	3	1 E+01	1 E+05
V-48	5 E+03	3	1 E+01	1 E+05
Cr-51	3 E+05	100	1 E+03	1 E+07
Mn-51	1 E+04	3	1 E+01	1 E+05
Mn-52	6 E+03	10	1 E+01	1 E+05
Mn-52m	1 E+04	3	1 E+01	1 E+05
Mn-53	3 E+05	1000	1 E+04	1 E+09
Mn-54	1 E+04	100	1 E+01	1 E+06
Mn-56	1 E+04	3	1 E+01	1 E+05
Fe-52	7 E+03	3	1 E+01	1 E+06
Fe-55	3 E+04	300	1 E+04	1 E+06
Fe-59	6 E+03	3	1 E+01	1 E+06
Co-55	9 E+03	3	1 E+01	1 E+06
Co-56	4 E+03	10	1 E+01	1 E+05
Co-57	5 E+04	100	1 E+02	1 E+06
Co-58	1 E+04	30	1 E+01	1 E+06
Co-58m	3 E+05	1000	1 E+04	1 E+07
Co-60	1 E+03	3	1 E+01	1 E+05
Co-60m	1 E+06	300	1 E+03	1 E+06
Co-61	1 E+05	3	1 E+02	1 E+06
Co-62m	1 E+04	3	1 E+01	1 E+05
Ni-59	2 E+05	1000	1 E+04	1 E+08
Ni-63	7 E+04	1000	1 E+05	1 E+08
Ni-65	1 E+04	3	1 E+01	1 E+06
Cu-64	8 E+04	10	1 E+02	1 E+06
Zn-65	3 E+03	30	1 E+01	1 E+06
Zn-69	3 E+05	3	1 E+04	1 E+06
Zn-69m	3 E+04	3	1 E+02	1 E+06

Ga-72	9 E+03	3	1 E+01	1 E+05
Ge-71	8 E+05	1000	1 E+04	1 E+08
As-73	4 E+04	300	1 E+03	1 E+07
As-74	8 E+03	3	1 E+01	1 E+06
As-76	6 E+03	3	1 E+02	1 E+05
As-77	3 E+04	3	1 E+03	1 E+06
Se-75	4 E+03	30	1 E+02	1 E+06
Br-82	1 E+04	3	1 E+01	1 E+06
Kr-74	-	-	1 E+02	1 E+09
Kr-76	-	-	1 E+02	1 E+09
Kr-77	-	-	1 E+02	1 E+09
Kr-79	-	30	1 E+03	1 E+05
Kr-81	-	1000	1 E+04	1 E+07
Kr-83m	-	1000	1 E+05	1 E+12
Kr-85	-	3	1 E+05	1 E+04
Kr-85m	-	3	1 E+03	1 E+10
Kr-87	-	3	1 E+02	1 E+09
Kr-88	-	3	1 E+02	1 E+09
Rb-86	4 E+03	3	1 E+02	1 E+05
Sr-85	2 E+04	100	1 E+02	1 E+06
Sr-85m	1 E+05	100	1 E+02	1 E+07
Sr-87m	1 E+05	30	1 E+02	1 E+06
Sr-89	4 E+03	3	1 E+03	1 E+06
Sr-90*	4 E+02	3	1 E+02	1 E+04
Sr-91	1 E+04	3	1 E+01	1 E+05
Sr-92	1 E+04	3	1 E+01	1 E+06
Y-90	4 E+03	3	1 E+03	1 E+05
Y-91	4 E+03	3	1 E+03	1 E+06
Y-91m	1 E+05	30	1 E+02	1 E+06
Y-92	2 E+04	3	1 E+02	1 E+05
Y-93	8 E+03	3	1 E+02	1 E+05
Zr-93*	4 E+04	100	1 E+03	1 E+07
Zr-95	1 E+04	3	1 E+01	1 E+06
Zr-97*	5 E+03	3	1 E+01	1 E+05
Nb-93m	8 E+04	1000	1 E+04	1 E+07
Nb-94	6 E+03	3	1 E+01	1 E+06
Nb-95	1 E+04	30	1 E+01	1 E+06
Nb-97	1 E+04	3	1 E+01	1 E+06
Nb-98	1 E+04	3	1 E+01	1 E+05
Mo-90	1 E+04	3	1 E+01	1 E+06
Mo-93	4 E+04	300	1 E+03	1 E+08
Mo-99	8 E+03	3	1 E+02	1 E+06
Mo-101	1 E+04	3	1 E+01	1 E+06
Tc-96	9 E+03	30	1 E+01	1 E+06
Tc-96m	8 E+05	1000	1 E+03	1 E+07
Tc-97	1 E+05	1000	1 E+03	1 E+08
Tc-97m	2 E+04	10	1 E+03	1 E+07
Tc-99	1 E+04	3	1 E+04	1 E+07
Tc-99m	1 E+05	30	1 E+02	1 E+07
Ru-97	7 E+04	100	1 E+02	1 E+07
Ru-103	1 E+04	10	1 E+02	1 E+06
Ru-105	1 E+04	3	1 E+01	1 E+06
Ru-106*	1 E+03	3	1 E+02	1 E+05
Rh-103m	3 E+06	1000	1 E+04	1 E+08
Rh-105	3 E+04	3	1 E+02	1 E+07
Pd-103	5 E+04	300	1 E+03	1 E+08

Pd-109	2 E+04	3	1 E+03	1 E+06
Ag-105	2 E+04	100	1 E+02	1 E+06
Ag-110m	4 E+03	10	1 E+01	1 E+06
Ag-111	8 E+03	3	1 E+03	1 E+06
Cd-109	5 E+03	10	1 E+04	1 E+06
Cd-115	7 E+03	3	1 E+02	1 E+06
Cd-115m	3 E+03	3	1 E+03	1 E+06
In-111	3 E+04	10	1 E+02	1 E+06
In-113m	1 E+05	10	1 E+02	1 E+06
In-114m	2 E+03	3	1 E+02	1 E+06
In-115m	1 E+05	10	1 E+02	1 E+06
Sn-113	1 E+04	100	1 E+03	1 E+07
Sn-125	3 E+03	3	1 E+02	1 E+05
Sb-122	6 E+03	3	1 E+02	1 E+04
Sb-124	4 E+03	3	1 E+01	1 E+06
Sb-125	9 E+03	10	1 E+02	1 E+06
Te-123m	7 E+03	10	1 E+02	1 E+07
Te-125m	1 E+04	3	1 E+03	1 E+07
Te-127	6 E+04	3	1 E+03	1 E+06
Te-127m	4 E+03	10	1 E+03	1 E+07
Te-129	1 E+05	3	1 E+02	1 E+06
Te-129m	3 E+03	3	1 E+03	1 E+06
Te-131	1 E+05	3	1 E+02	1 E+05
Te-131m	5 E+03	3	1 E+01	1 E+06
Te-132	3 E+03	10	1 E+02	1 E+07
Te-133	1 E+04	3	1 E+01	1 E+05
Te-133m	1 E+04	3	1 E+01	1 E+05
Te-134	1 E+04	3	1 E+01	1 E+06
I-123	5 E+04	10	1 E+02	1 E+07
I-125	7 E+02	10	1 E+03	1 E+06
I-126	3 E+02	3	1 E+02	1 E+06
I-129	9 E+01	1	1 E+02	1 E+05
I-130	5 E+03	3	1 E+01	1 E+06
I-131	5 E+02	3	1 E+02	1 E+06
I-132	1 E+04	3	1 E+01	1 E+05
I-133	2 E+03	3	1 E+01	1 E+06
I-134	1 E+04	3	1 E+01	1 E+05
I-135	1 E+04	3	1 E+01	1 E+06
Xe131m	-	3	1 E+04	1 E+04
Xe-133	-	10	1 E+03	1 E+04
Xe-135	-	3	1 E+03	1 E+10
Cs-129	1 E+05	100	1 E+02	1 E+05
Cs-131	2 E+05	1000	1 E+03	1 E+06
Cs-132	1 E+04	100	1 E+01	1 E+05
Cs-134m	1 E+05	3	1 E+03	1 E+05
Cs-134	5 E+02	3	1 E+01	1 E+04
Cs-135	5 E+03	10	1 E+04	1 E+07
Cs-136	3 E+03	3	1 E+01	1 E+05
Cs-137*	8 E+02	3	1 E+01	1 E+04
Cs-138	1 E+04	3	1 E+01	1 E+04
Ba-131	2 E+04	10	1 E+02	1 E+06
Ba-140*	4 E+03	3	1 E+01	1 E+05
La-140	4 E+03	3	1 E+01	1 E+05
Ce-139	4 E+04	10	1 E+02	1 E+06
Ce-141	1 E+04	3	1 E+02	1 E+07
Ce-143	9 E+03	3	1 E+02	1 E+06

Ce-144*	2 E+03	10	1 E+02	1 E+05
Pr-142	8 E+03	3	1 E+02	1 E+05
Pr-143	8 E+03	3	1 E+04	1 E+06
Nd-147	9 E+03	3	1 E+02	1 E+06
Nd-149	8 E+04	3	1 E+02	1 E+06
Pm-147	4 E+04	10	1 E+04	1 E+07
Pm-149	1 E+04	3	1 E+03	1 E+06
Sm-151	1 E+05	100	1 E+04	1 E+08
Sm-153	1 E+04	3	1 E+02	1 E+06
Eu-152	7 E+03	10	1 E+01	1 E+06
Eu-152m	2 E+04	3	1 E+02	1 E+06
Eu-154	5 E+03	3	1 E+01	1 E+06
Eu-155	3 E+04	30	1 E+02	1 E+07
Gd-153	4 E+04	30	1 E+02	1 E+07
Gd-159	2 E+04	3	1 E+03	1 E+06
Tb-160	6 E+03	3	1 E+01	1 E+06
Dy-165	9 E+04	3	1 E+03	1 E+06
Dy-166	6 E+03	3	1 E+03	1 E+06
Ho-166	7 E+03	3	1 E+03	1 E+05
Er-169	3 E+04	10	1 E+04	1 E+07
Er-171	3 E+04	3	1 E+02	1 E+06
Tm-170	8 E+03	3	1 E+03	1 E+06
Tm-171	9 E+04	1000	1 E+04	1 E+08
Yb-175	2 E+04	3	1 E+03	1 E+07
Lu-177	2 E+04	3	1 E+03	1 E+07
Hf-181	9 E+03	3	1 E+01	1 E+06
Ta-182	7 E+03	3	1 E+01	1 E+04
W-181	1 E+05	1000	1 E+03	1 E+07
W-185	2 E+04	3	1 E+04	1 E+07
W-187	1 E+04	3	1 E+02	1 E+06
Re-186	7 E+03	3	1 E+03	1 E+06
Re-188	7 E+03	3	1 E+02	1 E+05
Os-185	1 E+04	100	1 E+01	1 E+06
Os-191	2 E+04	10	1 E+02	1 E+07
Os-191m	1 E+05	100	1 E+03	1 E+07
Os-193	1 E+04	3	1 E+02	1 E+06
Ir-190	8 E+03	3	1 E+01	1 E+06
Ir-192	7 E+03	3	1 E+01	1 E+04
Ir-194	8 E+03	3	1 E+02	1 E+05
Pt-191	3 E+04	30	1 E+02	1 E+06
Pt-193m	2 E+04	3	1 E+03	1 E+07
Pt-197	3 E+04	3	1 E+03	1 E+06
Pt-197m	1 E+05	3	1 E+02	1 E+06
Au-198	1 E+04	3	1 E+02	1 E+06
Au-199	2 E+04	3	1 E+02	1 E+06
Hg-197	4 E+04	100	1 E+02	1 E+07
Hg197m	2 E+04	3	1 E+02	1 E+06
Hg-203	5 E+03	10	1 E+02	1 E+05
Tl-200	1 E+04	30	1 E+01	1 E+06
Tl-201	1 E+05	30	1 E+02	1 E+06
Tl-202	2 E+04	100	1 E+02	1 E+06
Tl-204	8 E+03	3	1 E+04	1 E+04
Pb-203	4 E+04	10	1 E+02	1 E+06
Pb-210*	1 E+01	0,3	1 E+01	1 E+04
Pb-212*	2 E+03	3	1 E+01	1 E+05
Bi-206	5 E+03	10	1 E+01	1 E+05

Bi-207	8 E+03	30	1 E+01	1 E+06
Bi-210	8 E+03	3	1 E+03	1 E+06
Bi-212*	1 E+04	3	1 E+01	1 E+05
Po-203	1 E+04	10	1 E+01	1 E+06
Po-205	1 E+04	30	1 E+01	1 E+06
Po-207	1 E+04	30	1 E+01	1 E+06
Po-210	4 E+01	1	1 E+01	1 E+04
At-211	9 E+02	10	1 E+03	1 E+07
Rn-220*	-	-	1 E+04	1 E+07
Rn-222*	-	-	1 E+01	1 E+08
Ra-223*	1 E+02	1	1 E+02	1 E+05
Ra-224*	2 E+02	3	1 E+01	1 E+05
Ra-225	1 E+02	3	1 E+02	1 E+05
Ra-226*	4 E+01	1	1 E+01	1 E+04
Ra-227	1 E+05	3	1 E+02	1 E+06
Ra-228*	1 E+01	0,3	1 E+01	1 E+05
Ac-228	1 E+04	3	1 E+01	1 E+06
Th-226*	3 E+04	30	1 E+03	1 E+07
Th-227	1 E+03	10	1 E+01	1 E+04
Th-228*	1 E+02	0,1	1 E+00	1 E+04
Th-229*	2 E+01	0,1	1 E+00	1 E+03
Th-230	5 E+01	0,1	1 E+00	1 E+04
Th-231	3 E+04	10	1 E+03	1 E+07
Th-nat (incl.Th- 232)	1 E+00	0,1	1 E+00	1 E+03
Th-234*	3 E+05	3	1 E+03	1 E+05
Pa-230	1 E+04	30	1 E+01	1 E+06
Pa-231	1 E+01	0,1	1 E+00	1 E+03
Pa-233	1 E+04	3	1 E+02	1 E+07
U-230*	2 E+02	1	1 E+01	1 E+05
U-231	4 E+04	100	1 E+02	1 E+07
U-232*	3 E+01	0,3	1 E+00	1 E+03
U-233	2 E+02	1	1 E+01	1 E+04
U-234	2 E+02	1	1 E+01	1 E+04
U-235*	2 E+02	1	1 E+01	1 E+04
U-236	2 E+02	1	1 E+01	1 E+04
U-237	1 E+04	3	1 E+02	1 E+06
U-238*	2 E+02	1	1 E+01	1 E+04
U-nat	4 E+02	1	1 E+00	1 E+03
U-239	1 E+05	3	1 E+02	1 E+06
U-240	9 E+03	-	1 E+03	1 E+07
U-240*	-	-	1 E+01	1 E+06
Np-237*	9 E+01	0,3	1 E+00	1 E+03
Np-239	1 E+04	3	1 E+02	1 E+07
Np-240	1 E+04	1	1 E+01	1 E+06
Pu-234	6 E+04	300	1 E+02	1 E+07
Pu-235	1 E+05	300	1 E+02	1 E+07
Pu-236	1 E+02	1	1 E+01	1 E+04
Pu-237	1 E+05	300	1 E+03	1 E+07
Pu-238	4 E+01	0,3	1 E+00	1 E+04
Pu-239	4 E+01	0,3	1 E+00	1 E+04
Pu-240	4 E+01	0,3	1 E+00	1 E+03
Pu-241	2 E+03	10	1 E+02	1 E+05
Pu-242	4 E+01	0,3	1 E+00	1 E+04
Pu-243	1 E+05	3	1 E+03	1 E+07

Pu-244	4 E+01	0,3	1 E+00	1 E+04
Am-241	5 E+01	0,3	1 E+00	1 E+04
Am-242	3 E+04	3	1 E+03	1 E+06
Am-242m*	5 E+01	0,3	1 E+00	1 E+04
Am243*	5 E+01	0,3	1 E+00	1 E+03
Cm-242	8 E+02	10	1 E+02	1 E+05
Cm-243	7 E+01	0,3	1 E+00	1 E+04
Cm-244	8 E+01	0,3	1 E+01	1 E+04
Cm-245	5 E+01	0,3	1 E+00	1 E+03
Cm-246	5 E+01	0,3	1 E+00	1 E+03
Cm-247	5 E+01	0,3	1 E+00	1 E+04
Cm-248	1 E+01	0,1	1 E+00	1 E+03
Bk-249	1 E+04	100	1 E+03	1 E+06
Cf-246	3 E+03	30	1 E+03	1 E+06
Cf-248	4 E+02	3	1 E+01	1 E+04
Cf-249	3 E+01	0,3	1 E+00	1 E+03
Cf-250	6 E+01	0,3	1 E+01	1 E+04
Cf-251	3 E+01	0,3	1 E+00	1 E+03
Cf-252	1 E+02	1	1 E+01	1 E+04
Cf-253	7 E+03	10	1 E+02	1 E+05
Cf-254	3 E+01	0,3	1 E+00	1 E+03
Es-253	2 E+03	10	1 E+02	1 E+05
Es-254	4 E+02	3	1 E+01	1 E+04
Es-254m	2 E+03	3	1 E+02	1 E+06
Fm-254	2 E+04	300	1 E+04	1 E+07
Fm-255	4 E+03	30	1 E+03	1 E+06

TABLE 2-C

LIST OF NUCLIDES IN EQUILIBRIUM

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Cs-137	Ba-137m
Ba-140	La-140
Ce-134	La-134
Ce-144	Pr-144
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Rn-220	Po-216
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208(0.36), Po-212(0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-226	Ra-222, Rn-218, Po-214
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th-nat	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U-nat	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
U-240	Np-240m
Np-237	Pa-233
Am-242m	Am-242
Am-243	Np-239

RADIATION AND TISSUES WEIGHTING FACTORS

1. Definition of terms used in this annex

Expanded field: a field derived from the actual field, where the fluence and the directional and energy distribution have the same values throughout the volume of interest as in the actual field at the point of reference.

Expanded and ligned field: a radiation field in which the fluence and the directional and energy distribution are the same as in the expanded field, but the fluency is unidirectional.

Tissue or organ absorbed dose (D_T): the quotient of the total energy imparted in a tissue or organ and the mass of that tissue or organ. The special name for the measurement unit is gray (Gy).

Directional dose equivalent $H'(d, \Omega)$: the dose equivalent at a point in a radiation field that would be produced by the corresponding expanded field, in the ICRU sphere at a depth, d , on a radius in a specified direction, Ω . The special name for the measurement unit is sievert (Sv).

Ambient dose equivalent $H^*(d)$: the dose equivalent at a point in a radiation field that would be produced by the corresponding expanded and aligned field in the ICRU sphere at a depth, d , on the radius opposing the direction of the aligned field. The special name for the measurement unit is sievert (Sv).

Individual dose equivalent $H_p(d)$: the dose equivalent in the soft tissues, at a corresponding depth, d , under a specified point on the body. The special name for the measurement unit is sievert (Sv).

Quality factor (Q): a function of unrestricted linear energy transfer (L) used for weighting absorbed doses at a point in such a way as to take into account the quality of radiation.

Mean quality factor, \bar{Q} : average value of the quality factor at a point in tissue where the absorbed dose is delivered by particles with different L values. Its value is calculated according to the expression:

$$\bar{Q} = \frac{1}{D} \int_0^{\infty} Q(L)D(L)dL$$

where D is the absorbed dose at the point of interest and $D(L)dL$ is absorbed dose due to charged particles having the unrestricted linear energy transfer included between L and $L+dL$. The $Q(L)$ is the corresponding quality factor at point of interest. The $Q-L$ relationships are given in par. 3.

Radiation weithing factor for radiation (w_R): a dimensionless factor used to weight the tissue or organ absorbed dose. The appropriate (w_R) values are given in para. 2.

Tissue weighting factor (w_T): a dimensionless factor used to weight the equivalent dose in a tissue or organ (T). The appropriate (w_T) are given in para. 4.

Fluence, Φ : the quotient of dN by da , where dN is the number of particles which enter a sphere of cross-sectional area da :

$$\Phi = \frac{dN}{da}$$

ICRU sphere: a standardised body introduced by the International Commission on Radiation Units (ICRU) to approximate the human body as regards the energy absorbed from ionising radiation; it consists of a 30 cm, diameter tissue equivalent sphere with a density of 1 g.cm^{-3} and a mass composition of 76,2% oxygen, 11,1% carbon, 10,1% hydrogen and 2,6% nitrogen.

Unrestricted linear energy transfer (L_∞): a quantity defined as:

$$L_\infty = \frac{dE}{dl}$$

where dE is the mean energy lost by a charged particle of energy E , by collision with electrons, in traversing a distance dl in water. In these norms, L_∞ is noted by L .

3. Values of radiation weighting factor, w_R

The values of radiation weighting factor w_R , depend on the type and quality of the external radiation field or on the type and quality of the radiation emitted by an internally deposited radionuclide.

When the radiation field is composed of types and energies with different values of w_R , the absorbed dose must be subdivided into blocks, each with its own value of w_R , values which are added to give the total equivalent dose. Alternatively, it may be expressed as a continuous distribution in energy where each element of absorbed dose from the energy interval between E and $E + dE$ is multiplied by the appropriate value of w_R from the Table below.

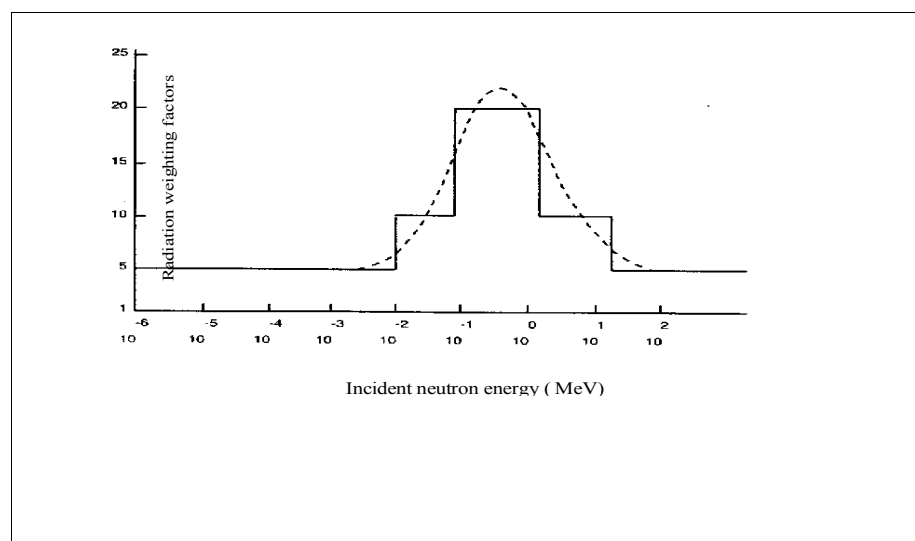
Type and energy range	Radiation weighting factor, w_R
Photons, all energies	1
Electrons and muons, all energies	1
Neutrons, energy < 10 keV	5
10 keV to 100 keV	10
>100 keV to 2 MeV	20
>2 MeV to 20 MeV	10
>20 MeV	5
Protons, other than recoil protons, energy > 2 MeV	5
Alpha particles, fission fragments, heavy nuclei	20

In calculations involving neutrons, difficulties may arise if step function values are applied. In these cases, it may be preferable to use a continuous function described by the following mathematical relationships

$$w_R = 5 + 17e^{-(\ln(2E))^2 / 6}$$

where E is the neutron energy in MeV.

A direct comparison of the two approaches is given, in Figure 1. The smooth curve is to be treated as an



approximation.

For radiation types and energy which are not included in the table, an approximation of w_R may be obtained by calculating the mean quality factor \bar{Q} at a depth of 10 mm in a ICRU sphere.

3. Relation between the quality factor, Q(L), and unrestricted linear energy transfer, L

Unrestricted linear energy transfer, L in water (keV μm^{-1})	Q(L)
< 10	1
10 – 100	0,32 L – 2,2
> 100	300/ \sqrt{L}

4. Values of tissue weighting factor, w_T

Values of tissue weighting factor, w_T , are shown below:

Tissue or organ	Tissue weighting factors, $w_T^{(1)}$
Gonads	0,20
Bone marrow (red)	0,12
Colon	0,12
Lung	0,12
Stomach	0,12
Bladder	0,05
Breast	0,05
Liver	0,05
Oesophagus	0,05
Thyroidă	0,05
Skin	0,01
Bone surface	0,01
Remainder	0,05 ^(2,3)

(1) The values have been developed from a reference population of equal numbers of both sexes and a wide range of ages. In the definition of the effective dose, these values apply to workers, to the whole population and whatever sex.

(2) For the purposes of calculation, the remainder is composed of the following tissues and organs: adrenals, brain, upper large intestine, kidney, muscle, pancreas, spleen, thymus and ureter. The list includes organs which are likely to be selectively irradiated. Some organs in the list are susceptible to cancer induction. If other tissues and organs shall be subsequently identified, then they will be included in the list either with a specific w_T or in the remainder. The remainder can also include other organs and tissues selectively irradiated.

(3) In those exceptional situations in which a single one of the remainder receives an equivalent dose in excess in comparison with the highest dose in any of the 12 organs for which a weighting factor is specified, a weighting factor of 0,025 should be applied to that tissue or organ, and a weighting factor of 0,025 for the average dose in the rest of the remainder as defined above.

5. Operational quantities for external radiation

1. Individual monitoring:

-individual equivalent dose $H_P(d)$,

where d represents the depth in mm in the body.

2. Area monitoring:

-ambient dose equivalent $H^*(d)$,

-directional dose equivalent $H'(d, \Omega)$, where

d represents the depth in mm under the surface of the sphere given in par. III-1, and

Ω represents the specified direction (in accordance with the publication ICRU Report 51/1993).

3. For strongly penetrating radiation a depth of 10 mm, for weakly penetrating radiation a depth of 0,07 mm for the skin and 3 mm for the eye is recommended.

VERIFICATION IN ACCORDANCE WITH DOSE LIMITS

1. Throughout the Directive, unless otherwise specified, requirements on doses apply to the sum of the relevant doses from external exposure in a specified period and the relevant 50-year committed doses (up to age 70 for children) from intakes in the same period.

In general the effective dose E incurred by an individual in the group of age g will be determined according to the following formula:

$$E = E_{\text{external}} + \sum_j h(g)_{j,\text{ing}} J_{j,\text{ing}} + \sum_j h(g)_{j,\text{inh}} J_{j,\text{inh}}$$

Where E_{external} is the relevant effective dose from external exposure; $h(g)_{j,\text{inh}}$ and $h(g)_{j,\text{ing}}$ are the committed effective dose per unit-intake for ingested or inhaled radionuclide j (Sv/Bq) by an individual in the group of age g ; $J_{j,\text{ing}}$ and $J_{j,\text{inh}}$ respectively are the relevant intake via ingestion or inhalation of the radionuclide j , (Bq).

2. Except for radon progeny and thoron progeny, values of the committed effective dose for unit intake for ingestion and inhalation are given for members of the public and for apprentices and students aged between 16 and 18 years in Tables 4-A and 4-B to this Annex. Except for radon progeny and thoron progeny, values of the committed effective dose for unit intake for ingestion and inhalation are given for exposed workers and for apprentices and students aged 18 years or more in Table 4-C1 to this Annex.

For exposure of members of the public, Table 4-A for ingestion includes values corresponding to different gut transfer factors f_1 for infants and for older persons. Also for exposure of members of the public, Table 4-B for inhalation include values for different lung retention types with appropriate f_1 values for the component of the intake cleared to the gastrointestinal tract. If information is available on these parameters, the appropriate value shall be used; if not, the most restrictive value shall be used.

For occupational exposure, Table 4-C1 includes values for ingestion corresponding to different gut transfer factors f_1 and values for inhalation for different lung retention types with appropriate f_1 values for the component of the intake cleared to the gastrointestinal tract.

Table 4-D presents gut transfer factors f_1 by element and compounds for workers and where appropriate members of the public for intake by ingestion. Table 4-E presents lung absorption types and gut transfer factors f_1 , also by element and compounds and also for exposed workers and for apprentices and students aged 18 years or more, for intake by inhalation.

For members of the public the lung absorption types and gut transfer factors f_1 shall take into account the chemical form of the element on the basis of available international guidance. In general, if no information is available on these parameters, the most conservative value should be used.

3. For radon progeny and thoron progeny the following conventional conversion factors apply, effective dose per unit potential alpha-energy exposure (Sv/Jhm⁻³):

Radon at home: 1,1

Radon at work: 1,4

Thoron at work: 0,5

Potential alpha energy (of radon progeny and thoron progeny): The total alpha energy ultimately emitted during the decay of radon progeny and thoron progeny through the decay chain, up to but not including ²¹⁰Pb for progeny of ²²²Rn and up to stable ²⁰⁸Pb for progeny of ²²⁰Rn. The unit is J (Joule). For the exposure to a given concentration for a given time the unit is Jhm⁻³.

The following tolerated units are used:

Work level (WL): An unit of measurement for concentration of potential alpha energy resulted of presence of radon progeny or thoron progeny which represents emission of 1,3 x 10⁵ MeV alpha energy per litre of air. In SI an WL corresponds to 2,1 x 10⁻⁵ Jm⁻³.

Long work level (WLM): 1 WLM = 170 WLh which corresponds to SI for 3,54 mJhm⁻³.

3.

4. Tables:

(4-A) Committed effective dose on unit of incorporation through ingestion (Sv Bq⁻¹) for members of public.

- (4-B) Committed effective dose on unit of incorporation through inhalation (Sv Bq^{-1}) for members of public.
- (4-C1) Effective dose coefficient (Sv Bq^{-1}).
- (4-C2) Effective dose coefficients for soluble or active chemical gas.
- (4-D) Compounds and values for factors f_1 which have been used in calculation of dose coefficients for ingestion.
- (4-E) Compounds, types of lung absorption and the values for factors f_1 which have been used in calculation of dose coefficients for inhalation.

TABLE 4-A

Doza efectivă angajată pe unitatea de încorporare prin ingestie (Sv Bq⁻¹) pentru persoane din populație

Nucleu	Timp de înjumătățire	Vârsta g ≤ 1 a		f _i pentru g > 1 a	Vârsta 1-2 a	Vârsta 2-7 a	Vârsta 7-12 a	Vârsta 12-17a	Vârsta >17 a
		f _i	h(g)		h(g)	h(g)	h(g)	h(g)	h(g)
Hidrogen									
Apă tritiată	12.3 a	1.000	6.4 E-11	1.000	4.8 E-11	3.1 E-11	2.3 E-11	1.8 E-11	1.8 E-11
Tritiu legat organic	12.3 a	1.000	1.2 E-10	1.000	1.2 E-10	7.3 E-11	5.7 E-11	4.2 E-11	4.2 E-11
Beriliu									
Be-7	53.3 d	0.020	1.8 E-10	0.005	1.3 E-10	7.7 E-11	5.3 E-11	3.5 E-11	2.8 E-11
Be-10	1.60 E+06 a	0.020	1.4 E-08	0.005	8.0 E-09	4.1 E-09	2.4 E-09	1.4 E-09	1.1 E-09
Carbon									
C-11	0.340 h	1.000	2.6 E-10	1.000	1.5 E-10	7.3 E-11	4.3 E-11	3.0 E-11	2.4 E-11
C-14	5.73 E+03 a	1.000	1.4 E-09	1.000	1.6 E-09	9.9 E-10	8.0 E-10	5.7 E-10	5.8 E-10
Fluor									
F-18	1.83 h	1.000	5.2 E-10	1.000	3.0 E-10	1.5 E-10	9.1 E-11	6.2 E-11	4.9 E-11
Sodiu									
Na-22	2.60 a	1.000	2.1 E-08	1.000	1.5 E-08	8.4 E-09	5.5 E-09	3.7 E-09	3.2 E-09
Na-24	15.0 h	1.000	3.5 E-09	1.000	2.3 E-09	1.2 E-09	7.7 E-10	5.2 E-10	4.3 E-10
Magneziu									
Mg-28	20.9 h	1.000	1.2 E-08	0.500	1.4 E-08	7.4 E-09	4.5 E-09	2.7 E-09	2.2 E-09
Aluminiu									
Al-26	7.16 E+05 a	0.020	3.4 E-08	0.010	2.1 E-08	1.1 E-08	7.1 E-09	4.3 E-09	3.5 E-09
Siliciu									
Si-31	2.62 h	0.020	1.9 E-09	0.010	1.0 E-09	5.1 E-10	3.0 E-10	1.8 E-10	1.6 E-10
Si-32	4.50 E+02 a	0.020	7.3 E-09	0.010	4.1 E-09	2.0 E-09	1.2 E-09	7.0 E-10	5.6 E-10
Fosfor									
P-32	14.3 d	1.000	3.1 E-08	0.800	1.9 E-08	9.4 E-09	5.3 E-09	3.1 E-09	2.4 E-09
P-33	25.4 d	1.000	2.7 E-09	0.800	1.8 E-09	9.1 E-10	5.3 E-10	3.1 E-10	2.4 E-10
Sulf									
S-35 (anorganic)	87.4 d	1.000	1.3 E-09	1.000	8.7 E-10	4.4 E-10	2.7 E-10	1.6 E-10	1.3 E-10
S-35 (organic)	87.4 d	1.000	7.7 E-09	1.000	5.4 E-09	2.7 E-09	1.6 E-09	9.5 E-10	7.7 E-10
Clor									
Cl-36	3.01 E+05 a	1.000	9.8 E-09	1.000	6.3 E-09	3.2 E-09	1.9 E-09	1.2 E-09	9.3 E-10
Cl-38	0.620 h	1.000	1.4 E-09	1.000	7.7 E-10	3.8 E-10	2.2 E-10	1.5 E-10	1.2 E-10
Cl-39	0.927 h	1.000	9.7 E-10	1.000	5.5 E-10	2.7 E-10	1.6 E-10	1.1 E-10	8.5 E-11
Potasiu									
K-40	1.28 E+09 a	1.000	6.2 E-08	1.000	4.2 E-08	2.1 E-08	1.3 E-08	7.6 E-09	6.2 E-09
K-42	12.4 h	1.000	5.1 E-09	1.000	3.0 E-09	1.5 E-09	8.6 E-10	5.4 E-10	4.3 E-10
K-43	22.6 h	1.000	2.3 E-09	1.000	1.4 E-09	7.6 E-10	4.7 E-10	3.0 E-10	2.5 E-10
K-44	0.369 h	1.000	1.0 E-09	1.000	5.5 E-10	2.7 E-10	1.6 E-10	1.1 E-10	8.4 E-11

K-45	0.333 h	1.000	6.2 E-10	1.000	3.5 E-10	1.7 E-10	9.9 E-11	6.8 E-11	5.4 E-11
Calciu (*)									
Ca-41	1.40 E+05 a	0.600	1.2 E-09	0.300	5.2 E-10	3.9 E-10	4.8 E-10	5.0 E-10	1.9 E-10
Ca-45	163 d	0.600	1.1 E-08	0.300	4.9 E-09	2.6 E-09	1.8 E-09	1.3 E-09	7.1 E-10
Ca-47	4.53 d	0.600	1.3 E-08	0.300	9.3 E-09	4.9 E-09	3.0 E-09	1.8 E-09	1.6 E-09
Scandiu									
Sc-43	3.89 h	0.001	1.8 E-09	1.0 E-04	1.2 E-09	6.1 E-10	3.7 E-10	2.3 E-10	1.9 E-10
Sc-44	3.93 h	0.001	3.5 E-09	1.0 E-04	2.2 E-09	1.2 E-09	7.1 E-10	4.4 E-10	3.5 E-10
Sc-44m	2.44 d	0.001	2.4 E-08	1.0 E-04	1.6 E-08	8.3 E-09	5.1 E-09	3.1 E-09	2.4 E-09
Sc-46	83.8 d	0.001	1.1 E-08	1.0 E-04	7.9 E-09	4.4 E-09	2.9 E-09	1.8 E-09	1.5 E-09
Sc-47	3.35 d	0.001	6.1 E-09	1.0 E-04	3.9 E-09	2.0 E-09	1.2 E-09	6.8 E-10	5.4 E-10
Sc-48	1.82 d	0.001	1.3 E-08	1.0 E-04	9.3 E-09	5.1 E-09	3.3 E-09	2.1 E-09	1.7 E-09
Sc-49	0.956 h	0.001	1.0 E-09	1.0 E-04	5.7 E-10	2.8 E-10	1.6 E-10	1.0 E-10	8.2 E-11
Titan									
Ti-44	47.3 a	0.020	5.5 E-08	0.010	3.1 E-08	1.7 E-08	1.1 E-08	6.9 E-09	5.8 E-09
Ti-45	3.08 h	0.020	1.6 E-09	0.010	9.8 E-10	5.0 E-10	3.1 E-10	1.9 E-10	1.5 E-10
Vanadiu									
V-47	0.543 h	0.020	7.3 E-10	0.010	4.1 E-10	2.0 E-10	1.2 E-10	8.0 E-11	6.3 E-11
V-48	16.2 d	0.020	1.5 E-08	0.010	1.1 E-08	5.9 E-09	3.9 E-09	2.5 E-09	2.0 E-09
V-49	330 d	0.020	2.2 E-10	0.010	1.4 E-10	6.9 E-11	4.0 E-11	2.3 E-11	1.8 E-11
Crom									
Cr-48	23.0 h	0.200	1.4 E-09	0.100	9.9 E-10	5.7 E-10	3.8 E-10	2.5 E-10	2.0 E-10
		0.020	1.4 E-09	0.010	9.9 E-10	5.7 E-10	3.8 E-10	2.5 E-10	2.0 E-10
Cr-49	0.702 h	0.200	6.8 E-10	0.100	3.9 E-10	2.0 E-10	1.1 E-10	7.7 E-11	6.1 E-11
		0.020	6.8 E-10	0.010	3.9 E-10	2.0 E-10	1.1 E-10	7.7 E-11	6.1 E-11
Cr-51	27.7 d	0.200	3.5 E-10	0.100	2.3 E-10	1.2 E-10	7.8 E-11	4.8 E-11	3.8 E-11
		0.020	3.3 E-10	0.010	2.2 E-10	1.2 E-10	7.5 E-11	4.6 E-11	3.7 E-11
Mangan									
Mn-51	0.770 h	0.200	1.1 E-09	0.100	6.1 E-10	3.0 E-10	1.8 E-10	1.2 E-10	9.3 E-11
Mn-52	5.59 d	0.200	1.2 E-08	0.100	8.8 E-09	5.1 E-09	3.4 E-09	2.2 E-09	1.8 E-09
Mn-52m	0.352 h	0.200	7.8 E-10	0.100	4.4 E-10	2.2 E-10	1.3 E-10	8.8 E-11	6.9 E-11
Mn-53	3.70 E+06 a	0.200	4.1 E-10	0.100	2.2 E-10	1.1 E-10	6.5 E-11	3.7 E-11	3.0 E-11
Mn-54	312 d	0.200	5.4 E-09	0.100	3.1 E-09	1.9 E-09	1.3 E-09	8.7 E-10	7.1 E-10
Mn-56	2.58 h	0.200	2.7 E-09	0.100	1.7 E-09	8.5 E-10	5.1 E-10	3.2 E-10	2.5 E-10
Fier (*)									
Fe-52	8.28 h	0.600	1.3 E-08	0.100	9.1 E-09	4.6 E-09	2.8 E-09	1.7 E-09	1.4 E-09
Fe-55	2.70 a	0.600	7.6 E-09	0.100	2.4 E-09	1.7 E-09	1.1 E-09	7.7 E-10	3.3 E-10
Fe-59	44.5 d	0.600	3.9 E-08	0.100	1.3 E-08	7.5 E-09	4.7 E-09	3.1 E-09	1.8 E-09
Fe-60	1.00 E+05 a	0.600	7.9 E-07	0.100	2.7 E-07	2.7 E-07	2.5 E-07	2.3 E-07	1.1 E-07
Cobalt (*)									
Co-55	17.5 h	0.600	6.0 E-09	0.100	5.5 E-09	2.9 E-09	1.8 E-09	1.1 E-09	1.0 E-09
Co-56	78.7 d	0.600	2.5 E-08	0.100	1.5 E-08	8.8 E-09	5.8 E-09	3.8 E-09	2.5 E-09
Co-57	271 d	0.600	2.9 E-09	0.100	1.6 E-09	8.9 E-10	5.8 E-10	3.7 E-10	2.1 E-10
Co-58	70.8 d	0.600	7.3 E-09	0.100	4.4 E-09	2.6 E-09	1.7 E-09	1.1 E-09	7.4 E-10
Co-58m	9.15 h	0.600	2.0 E-10	0.100	1.5 E-10	7.8 E-11	4.7 E-11	2.8 E-11	2.4 E-11
Co-60	5.27 a	0.600	5.4 E-08	0.100	2.7 E-08	1.7 E-08	1.1 E-08	7.9 E-09	3.4 E-09
Co-60m	0.174 h	0.600	2.2 E-11	0.100	1.2 E-11	5.7 E-12	3.2 E-12	2.2 E-12	1.7 E-12
Co-61	1.65 h	0.600	8.2 E-10	0.100	5.1 E-10	2.5 E-10	1.4 E-10	9.2 E-11	7.4 E-11
Co-62m	0.232 h	0.600	5.3 E-10	0.100	3.0 E-10	1.5 E-10	8.7 E-11	6.0 E-11	4.7 E-11

Nichel									
Ni-56	6.10 d	0.100	5.3 E-09	0.050	4.0 E-09	2.3 E-09	1.6 E-09	1.1 E-09	8.6 E-10
Ni-57	1.50 d	0.100	6.8 E-09	0.050	4.9 E-09	2.7 E-09	1.7 E-09	1.1 E-09	8.7 E-10
Ni-59	7.50 E+04 a	0.100	6.4 E-10	0.050	3.4 E-10	1.9 E-10	1.1 E-10	7.3 E-11	6.3 E-11
Ni-63	96.0 a	0.100	1.6 E-09	0.050	8.4 E-10	4.6 E-10	2.8 E-10	1.8 E-10	1.5 E-10
Ni-65	2.52 h	0.100	2.1 E-09	0.050	1.3 E-09	6.3 E-10	3.8 E-10	2.3 E-10	1.8 E-10
Ni-66	2.27 d	0.100	3.3 E-08	0.050	2.2 E-08	1.1 E-08	6.6 E-09	3.7 E-09	3.0 E-09
Cupru									
Cu-60	0.387 h	1.000	7.0 E-10	0.500	4.2 E-10	2.2 E-10	1.3 E-10	8.9 E-11	7.0 E-11
Cu-61	3.41 h	1.000	7.1 E-10	0.500	7.5 E-10	3.9 E-10	2.3 E-10	1.5 E-10	1.2 E-10
Cu-64	12.7 h	1.000	5.2 E-10	0.500	8.3 E-10	4.2 E-10	2.5 E-10	1.5 E-10	1.2 E-10
Cu-67	2.58 d	1.000	2.1 E-09	0.500	2.4 E-09	1.2 E-09	7.2 E-10	4.2 E-10	3.4 E-10
Zinc									
Zn-62	9.26 h	1.000	4.2 E-09	0.500	6.5 E-09	3.3 E-09	2.0 E-09	1.2 E-09	9.4 E-10
Zn-63	0.635 h	1.000	8.7 E-10	0.500	5.2 E-10	2.6 E-10	1.5 E-10	1.0 E-10	7.9 E-11
Zn-65	244 d	1.000	3.6 E-08	0.500	1.6 E-08	9.7 E-09	6.4 E-09	4.5 E-09	3.9 E-09
Zn-69	0.950 h	1.000	3.5 E-10	0.500	2.2 E-10	1.1 E-10	6.0 E-11	3.9 E-11	3.1 E-11
Zn-69m	13.8 h	1.000	1.3 E-09	0.500	2.3 E-09	1.2 E-09	7.0 E-10	4.1 E-10	3.3 E-10
Zn-71m	3.92 h	1.000	1.4 E-09	0.500	1.5 E-09	7.8 E-10	4.8 E-10	3.0 E-10	2.4 E-10
Zn-72	1.94 d	1.000	8.7 E-09	0.500	8.6 E-09	4.5 E-09	2.8 E-09	1.7 E-09	1.4 E-09
Galiu									
Ga-65	0.253 h	0.010	4.3 E-10	0.001	2.4 E-10	1.2 E-10	6.9 E-11	4.7 E-11	3.7 E-11
Ga-66	9.40 h	0.010	1.2 E-08	0.001	7.9 E-09	4.0 E-09	2.5 E-09	1.5 E-09	1.2 E-09
Ga-67	3.26 d	0.010	1.8 E-09	0.001	1.2 E-09	6.4 E-10	4.0 E-10	2.4 E-10	1.9 E-10
Ga-68	1.13 h	0.010	1.2 E-09	0.001	6.7 E-10	3.4 E-10	2.0 E-10	1.3 E-10	1.0 E-10
Ga-70	0.353 h	0.010	3.9 E-10	0.001	2.2 E-10	1.0 E-10	5.9 E-11	4.0 E-11	3.1 E-11
Ga-72	14.1 h	0.010	1.0 E-08	0.001	6.8 E-09	3.6 E-09	2.2 E-09	1.4 E-09	1.1 E-09
Ga-73	4.91 h	0.010	3.0 E-09	0.001	1.9 E-09	9.3 E-10	5.5 E-10	3.3 E-10	2.6 E-10
Germaniu									
Ge-66	2.27 h	1.000	8.3 E-10	1.000	5.3 E-10	2.9 E-10	1.9 E-10	1.3 E-10	1.0 E-10
Ge-67	0.312 h	1.000	7.7 E-10	1.000	4.2 E-10	2.1 E-10	1.2 E-10	8.2 E-11	6.5 E-11
Ge-68	288 d	1.000	1.2 E-08	1.000	8.0 E-09	4.2 E-09	2.6 E-09	1.6 E-09	1.3 E-09
Ge-69	1.63 d	1.000	2.0 E-09	1.000	1.3 E-09	7.1 E-10	4.6 E-10	3.0 E-10	2.4 E-10
Ge-71	11.8 d	1.000	1.2 E-10	1.000	7.8 E-11	4.0 E-11	2.4 E-11	1.5 E-11	1.2 E-11
Ge-75	1.38 h	1.000	5.5 E-10	1.000	3.1 E-10	1.5 E-10	8.7 E-11	5.9 E-11	4.6 E-11
Ge-77	11.3 h	1.000	3.0 E-09	1.000	1.8 E-09	9.9 E-10	6.2 E-10	4.1 E-10	3.3 E-10
Ge-78	1.45 h	1.000	1.2 E-09	1.000	7.0 E-10	3.6 E-10	2.2 E-10	1.5 E-10	1.2 E-10
Arsen									
As-69	0.253 h	1.000	6.6 E-10	0.500	3.7 E-10	1.8 E-10	1.1 E-10	7.2 E-11	5.7 E-11
As-70	0.876 h	1.000	1.2 E-09	0.500	7.8 E-10	4.1 E-10	2.5 E-10	1.7 E-10	1.3 E-10
As-71	2.70 d	1.000	2.8 E-09	0.500	2.8 E-09	1.5 E-09	9.3 E-10	5.7 E-10	4.6 E-10
As-72	1.08 d	1.000	1.1 E-08	0.500	1.2 E-08	6.3 E-09	3.8 E-09	2.3 E-09	1.8 E-09
As-73	80.3 d	1.000	2.6 E-09	0.500	1.9 E-09	9.3 E-10	5.6 E-10	3.2 E-10	2.6 E-10
As-74	17.8 d	1.000	1.0 E-08	0.500	8.2 E-09	4.3 E-09	2.6 E-09	1.6 E-09	1.3 E-09
As-76	1.10 d	1.000	1.0 E-08	0.500	1.1 E-08	5.8 E-09	3.4 E-09	2.0 E-09	1.6 E-09
As-77	1.62 d	1.000	2.7 E-09	0.500	2.9 E-09	1.5 E-09	8.7 E-10	5.0 E-10	4.0 E-10
As-78	1.51 h	1.000	2.0 E-09	0.500	1.4 E-09	7.0 E-10	4.1 E-10	2.7 E-10	2.1 E-10
Seleniu									
Se-70	0.683 h	1.000	1.0 E-09	0.800	7.1 E-10	3.6 E-10	2.2 E-10	1.5 E-10	1.2 E-10
Se-73	7.15 h	1.000	1.6 E-09	0.800	1.4 E-09	7.4 E-10	4.8 E-10	2.5 E-10	2.1 E-10
Se-73m	0.650 h	1.000	2.6 E-10	0.800	1.8 E-10	9.5 E-11	5.9 E-11	3.5 E-11	2.8 E-11
Se-75	120 d	1.000	2.0 E-08	0.800	1.3 E-08	8.3 E-09	6.0 E-09	3.1 E-09	2.6 E-09

Se-79	6.50 E+04 a	1.000	4.1 E-08	0.800	2.8 E-08	1.9 E-08	1.4 E-08	4.1 E-09	2.9 E-09
Se-81	0.308 h	1.000	3.4 E-10	0.800	1.9 E-10	9.0 E-11	5.1 E-11	3.4 E-11	2.7 E-11
Se-81m	0.954 h	1.000	6.0 E-10	0.800	3.7 E-10	1.8 E-10	1.1 E-10	6.7 E-11	5.3 E-11
Se-83	0.375 h	1.000	4.6 E-10	0.800	2.9 E-10	1.5 E-10	8.7 E-11	5.9 E-11	4.7 E-11
Brom									
Br-74	0.422 h	1.000	9.0 E-10	1.000	5.2 E-10	2.6 E-10	1.5 E-10	1.1 E-10	8.4 E-11
Br-74m	0.691 h	1.000	1.5 E-09	1.000	8.5 E-10	4.3 E-10	2.5 E-10	1.7 E-10	1.4 E-10
Br-75	1.63 h	1.000	8.5 E-10	1.000	4.9 E-10	2.5 E-10	1.5 E-10	9.9 E-11	7.9 E-11
Br-76	16.2 h	1.000	4.2 E-09	1.000	2.7 E-09	1.4 E-09	8.7 E-10	5.6 E-10	4.6 E-10
Br-77	2.33 d	1.000	6.3 E-10	1.000	4.4 E-10	2.5 E-10	1.7 E-10	1.1 E-10	9.6 E-11
Br-80	0.290 h	1.000	3.9 E-10	1.000	2.1 E-10	1.0 E-10	5.8 E-11	3.9 E-11	3.1 E-11
Br-80m	4.42 h	1.000	1.4 E-09	1.000	8.0 E-10	3.9 E-10	2.3 E-10	1.4 E-10	1.1 E-10
Br-82	1.47 d	1.000	3.7 E-09	1.000	2.6 E-09	1.5 E-09	9.5 E-10	6.4 E-10	5.4 E-10
Br-83	2.39 h	1.000	5.3 E-10	1.000	3.0 E-10	1.4 E-10	8.3 E-11	5.5 E-11	4.3 E-11
Br-84	0.530 h	1.000	1.0 E-09	1.000	5.8 E-10	2.8 E-10	1.6 E-10	1.1 E-10	8.8 E-11
Rubidiu									
Rb-79	0.382 h	1.000	5.7 E-10	1.000	3.2 E-10	1.6 E-10	9.2 E-11	6.3 E-11	5.0 E-11
Rb-81	4.58 h	1.000	5.4 E-10	1.000	3.2 E-10	1.6 E-10	1.0 E-10	6.7 E-11	5.4 E-11
Rb-81m	0.533 h	1.000	1.1 E-10	1.000	6.2 E-11	3.1 E-11	1.8 E-11	1.2 E-11	9.7 E-12
Rb-82m	6.20 h	1.000	8.7 E-10	1.000	5.9 E-10	3.4 E-10	2.2 E-10	1.5 E-10	1.3 E-10
Rb-83	86.2 d	1.000	1.1 E-08	1.000	8.4 E-09	4.9 E-09	3.2 E-09	2.2 E-09	1.9 E-09
Rb-84	32.8 d	1.000	2.0 E-08	1.000	1.4 E-08	7.9 E-09	5.0 E-09	3.3 E-09	2.8 E-09
Rb-86	18.7 d	1.000	3.1 E-08	1.000	2.0 E-08	9.9 E-09	5.9 E-09	3.5 E-09	2.8 E-09
Rb-87	4.70 E+10 a	1.000	1.5 E-08	1.000	1.0 E-08	5.2 E-09	3.1 E-09	1.8 E-09	1.5 E-09
Rb-88	0.297 h	1.000	1.1 E-09	1.000	6.2 E-10	3.0 E-10	1.7 E-10	1.2 E-10	9.0 E-11
Rb-89	0.253 h	1.000	5.4 E-10	1.000	3.0 E-10	1.5 E-10	8.6 E-11	5.9 E-11	4.7 E-11
Stronțiu (*)									
Sr-80	1.67 h	0.600	3.7 E-09	0.300	2.3 E-09	1.1 E-09	6.5 E-10	4.2 E-10	3.4 E-10
Sr-81	0.425 h	0.600	8.4 E-10	0.300	4.9 E-10	2.4 E-10	1.4 E-10	9.6 E-11	7.7 E-11
Sr-82	25.0 d	0.600	7.2 E-08	0.300	4.1 E-08	2.1 E-08	1.3 E-08	8.7 E-09	6.1 E-09
Sr-83	1.35 d	0.600	3.4 E-09	0.300	2.7 E-09	1.4 E-09	9.1 E-10	5.7 E-10	4.9 E-10
Sr-85	64.8 d	0.600	7.7 E-09	0.300	3.1 E-09	1.7 E-09	1.5 E-09	1.3 E-09	5.6 E-10
Sr-85m	1.16 h	0.600	4.5 E-11	0.300	3.0 E-11	1.7 E-11	1.1 E-11	7.8 E-12	6.1 E-12
Sr-87m	2.80 h	0.600	2.4 E-10	0.300	1.7 E-10	9.0 E-11	5.6 E-11	3.6 E-11	3.0 E-11
Sr-89	50.5 d	0.600	3.6 E-08	0.300	1.8 E-08	8.9 E-09	5.8 E-09	4.0 E-09	2.6 E-09
Sr-90	29.1 a	0.600	2.3 E-07	0.300	7.3 E-08	4.7 E-08	6.0 E-08	8.0 E-08	2.8 E-08
Sr-91	9.50 h	0.600	5.2 E-09	0.300	4.0 E-09	2.1 E-09	1.2 E-09	7.4 E-10	6.5 E-10
Sr-92	2.71 h	0.600	3.4 E-09	0.300	2.7 E-09	1.4 E-09	8.2 E-10	4.8 E-10	4.3 E-10
Ytriu									
Y-86	14.7 h	0.001	7.6 E-09	1.0 E-04	5.2 E-09	2.9 E-09	1.9 E-09	1.2 E-09	9.6 E-10
Y-86m	0.800 h	0.001	4.5 E-10	1.0 E-04	3.1 E-10	1.7 E-10	1.1 E-10	7.1 E-11	5.6 E-11
Y-87	3.35 d	0.001	4.6 E-09	1.0 E-04	3.2 E-09	1.8 E-09	1.1 E-09	7.0 E-10	5.5 E-10
Y-88	107 d	0.001	8.1 E-09	1.0 E-04	6.0 E-09	3.5 E-09	2.4 E-09	1.6 E-09	1.3 E-09
Y-90	2.67 d	0.001	3.1 E-08	1.0 E-04	2.0 E-08	1.0 E-08	5.9 E-09	3.3 E-09	2.7 E-09
Y-90m	3.19 h	0.001	1.8 E-09	1.0 E-04	1.2 E-09	6.1 E-10	3.7 E-10	2.2 E-10	1.7 E-10
Y-91	58.5 d	0.001	2.8 E-08	1.0 E-04	1.8 E-08	8.8 E-09	5.2 E-09	2.9 E-09	2.4 E-09
Y-91m	0.828 h	0.001	9.2 E-11	1.0 E-04	6.0 E-11	3.3 E-11	2.1 E-11	1.4 E-11	1.1 E-11
Y-92	3.54 h	0.001	5.9 E-09	1.0 E-04	3.6 E-09	1.8 E-09	1.0 E-09	6.2 E-10	4.9 E-10
Y-93	10.1 h	0.001	1.4 E-08	1.0 E-04	8.5 E-09	4.3 E-09	2.5 E-09	1.4 E-09	1.2 E-09
Y-94	0.318 h	0.001	9.9 E-10	1.0 E-04	5.5 E-10	2.7 E-10	1.5 E-10	1.0 E-10	8.1 E-11
Y-95	0.178 h	0.001	5.7 E-10	1.0 E-04	3.1 E-10	1.5 E-10	8.7 E-11	5.9 E-11	4.6 E-11
Zirconiu									
Zr-86	16.5 h	0.020	6.9 E-09	0.010	4.8 E-09	2.7 E-09	1.7 E-09	1.1 E-09	8.6 E-10

Zr-88	83.4 d	0.020	2.8 E-09	0.010	2.0 E-09	1.2 E-09	8.0 E-10	5.4 E-10	4.5 E-10
Zr-89	3.27 d	0.020	6.5 E-09	0.010	4.5 E-09	2.5 E-09	1.6 E-09	9.9 E-10	7.9 E-10
Zr-93	1.53 E+06 a	0.020	1.2 E-09	0.010	7.6 E-10	5.1 E-10	5.8 E-10	8.6 E-10	1.1 E-09
Zr-95	64.0 d	0.020	8.5 E-09	0.010	5.6 E-09	3.0 E-09	1.9 E-09	1.2 E-09	9.5 E-10
Zr-97	16.9 h	0.020	2.2 E-08	0.010	1.4 E-08	7.3 E-09	4.4 E-09	2.6 E-09	2.1 E-09
Niobiu									
Nb-88	0.238 h	0.020	6.7 E-10	0.010	3.8 E-10	1.9 E-10	1.1 E-10	7.9 E-11	6.3 E-11
Nb-89	2.03 h	0.020	3.0 E-09	0.010	2.0 E-09	1.0 E-09	6.0 E-10	3.4 E-10	2.7 E-10
Nb-89	1.10 h	0.020	1.5 E-09	0.010	8.7 E-10	4.4 E-10	2.7 E-10	1.8 E-10	1.4 E-10
Nb-90	14.6 h	0.020	1.1 E-08	0.010	7.2 E-09	3.9 E-09	2.5 E-09	1.6 E-09	1.2 E-09
Nb-93m	13.6 a	0.020	1.5 E-09	0.010	9.1 E-10	4.6 E-10	2.7 E-10	1.5 E-10	1.2 E-10
Nb-94	2.03 E+04 a	0.020	1.5 E-08	0.010	9.7 E-09	5.3 E-09	3.4 E-09	2.1 E-09	1.7 E-09
Nb-95	35.1 d	0.020	4.6 E-09	0.010	3.2 E-09	1.8 E-09	1.1 E-09	7.4 E-10	5.8 E-10
Nb-95m	3.61 d	0.020	6.4 E-09	0.010	4.1 E-09	2.1 E-09	1.2 E-09	7.1 E-10	5.6 E-10
Nb-96	23.3 h	0.020	9.2 E-09	0.010	6.3 E-09	3.4 E-09	2.2 E-09	1.4 E-09	1.1 E-09
Nb-97	1.20 h	0.020	7.7 E-10	0.010	4.5 E-10	2.3 E-10	1.3 E-10	8.7 E-11	6.8 E-11
Nb-98	0.858 h	0.020	1.2 E-09	0.010	7.1 E-10	3.6 E-10	2.2 E-10	1.4 E-10	1.1 E-10
Molibden									
Mo-90	5.67 h	1.000	1.7 E-09	1.000	1.2 E-09	6.3 E-10	4.0 E-10	2.7 E-10	2.2 E-10
Mo-93	3.50 E+03 a	1.000	7.9 E-09	1.000	6.9 E-09	5.0 E-09	4.0 E-09	3.4 E-09	3.1 E-09
Mo-93m	6.85 h	1.000	8.0 E-10	1.000	5.4 E-10	3.1 E-10	2.0 E-10	1.4 E-10	1.1 E-10
Mo-99	2.75 d	1.000	5.5 E-09	1.000	3.5 E-09	1.8 E-09	1.1 E-09	7.6 E-10	6.0 E-10
Mo-101	0.244 h	1.000	4.8 E-10	1.000	2.7 E-10	1.3 E-10	7.6 E-11	5.2 E-11	4.1 E-11
Tehnețiu									
Tc-93	2.75 h	1.000	2.7 E-10	0.500	2.5 E-10	1.5 E-10	9.8 E-11	6.8 E-11	5.5 E-11
Tc-93m	0.725 h	1.000	2.0 E-10	0.500	1.3 E-10	7.3 E-11	4.6 E-11	3.2 E-11	2.5 E-11
Tc-94	4.88 h	1.000	1.2 E-09	0.500	1.0 E-09	5.8 E-10	3.7 E-10	2.5 E-10	2.0 E-10
Tc-94m	0.867 h	1.000	1.3 E-09	0.500	6.5 E-10	3.3 E-10	1.9 E-10	1.3 E-10	1.0 E-10
Tc-95	20.0 h	1.000	9.9 E-10	0.500	8.7 E-10	5.0 E-10	3.3 E-10	2.3 E-10	1.8 E-10
Tc-95m	61.0 d	1.000	4.7 E-09	0.500	2.8 E-09	1.6 E-09	1.0 E-09	7.0 E-10	5.6 E-10
Tc-96	4.28 d	1.000	6.7 E-09	0.500	5.1 E-09	3.0 E-09	2.0 E-09	1.4 E-09	1.1 E-09
Tc-96m	0.858 h	1.000	1.0 E-10	0.500	6.5 E-11	3.6 E-11	2.3 E-11	1.6 E-11	1.2 E-11
Tc-97	2.60 E+06 a	1.000	9.9 E-10	0.500	4.9 E-10	2.4 E-10	1.4 E-10	8.8 E-11	6.8 E-11
Tc-97m	87.0 d	1.000	8.7 E-09	0.500	4.1 E-09	2.0 E-09	1.1 E-09	7.0 E-10	5.5 E-10
Tc-98	4.20 E+06 a	1.000	2.3 E-08	0.500	1.2 E-08	6.1 E-09	3.7 E-09	2.5 E-09	2.0 E-09
Tc-99	2.13 E+05 a	1.000	1.0 E-08	0.500	4.8 E-09	2.3 E-09	1.3 E-09	8.2 E-10	6.4 E-10
Tc-99m	6.02 h	1.000	2.0 E-10	0.500	1.3 E-10	7.2 E-11	4.3 E-11	2.8 E-11	2.2 E-11
Tc-101	0.237 h	1.000	2.4 E-10	0.500	1.3 E-10	6.1 E-11	3.5 E-11	2.4 E-11	1.9 E-11
Tc-104	0.303 h	1.000	1.0 E-09	0.500	5.3 E-10	2.6 E-10	1.5 E-10	1.0 E-10	8.0 E-11
Ruteniu									
Ru-94	0.863 h	0.100	9.3 E-10	0.050	5.9 E-10	3.1 E-10	1.9 E-10	1.2 E-10	9.4 E-11
Ru-97	2.90 d	0.100	1.2 E-09	0.050	8.5 E-10	4.7 E-10	3.0 E-10	1.9 E-10	1.5 E-10
Ru-103	39.3 d	0.100	7.1 E-09	0.050	4.6 E-09	2.4 E-09	1.5 E-09	9.2 E-10	7.3 E-10
Ru-105	4.44 h	0.100	2.7 E-09	0.050	1.8 E-09	9.1 E-10	5.5 E-10	3.3 E-10	2.6 E-10
Ru-106	1.01 a	0.100	8.4 E-08	0.050	4.9 E-08	2.5 E-08	1.5 E-08	8.6 E-09	7.0 E-09
Rodiu									
Rh-99	16.0 d	0.100	4.2 E-09	0.050	2.9 E-09	1.6 E-09	1.0 E-09	6.5 E-10	5.1 E-10
Rh-99m	4.70 h	0.100	4.9 E-10	0.050	3.5 E-10	2.0 E-10	1.3 E-10	8.3 E-11	6.6 E-11
Rh-100	20.8 h	0.100	4.9 E-09	0.050	3.6 E-09	2.0 E-09	1.4 E-09	8.8 E-10	7.1 E-10
Rh-101	3.20 a	0.100	4.9 E-09	0.050	2.8 E-09	1.6 E-09	1.0 E-09	6.7 E-10	5.5 E-10
Rh-101m	4.34 d	0.100	1.7 E-09	0.050	1.2 E-09	6.8 E-10	4.4 E-10	2.8 E-10	2.2 E-10
Rh-102	2.90 a	0.100	1.9 E-08	0.050	1.0 E-08	6.4 E-09	4.3 E-09	3.0 E-09	2.6 E-09
Rh-102m	207 d	0.100	1.2 E-08	0.050	7.4 E-09	3.9 E-09	2.4 E-09	1.4 E-09	1.2 E-09

Rh-103m	0.935 h	0.100	4.7 E-11	0.050	2.7 E-11	1.3 E-11	7.4 E-12	4.8 E-12	3.8 E-12
Rh-105	1.47 d	0.100	4.0 E-09	0.050	2.7 E-09	1.3 E-09	8.0 E-10	4.6 E-10	3.7 E-10
Rh-106m	2.20 h	0.100	1.4 E-09	0.050	9.7 E-10	5.3 E-10	3.3 E-10	2.0 E-10	1.6 E-10
Rh-107	0.362 h	0.100	2.9 E-10	0.050	1.6 E-10	7.9 E-11	4.5 E-11	3.1 E-11	2.4 E-11
Paladiu									
Pd-100	3.63 d	0.050	7.4 E-09	0.005	5.2 E-09	2.9 E-09	1.9 E-09	1.2 E-09	9.4 E-10
Pd-101	8.27 h	0.050	8.2 E-10	0.005	5.7 E-10	3.1 E-10	1.9 E-10	1.2 E-10	9.4 E-11
Pd-103	17.0 d	0.050	2.2 E-09	0.005	1.4 E-09	7.2 E-10	4.3 E-10	2.4 E-10	1.9 E-10
Pd-107	6.50 E+06 a	0.050	4.4 E-10	0.005	2.8 E-10	1.4 E-10	8.1 E-11	4.6 E-11	3.7 E-11
Pd-109	13.4 h	0.050	6.3 E-09	0.005	4.1 E-09	2.0 E-09	1.2 E-09	6.8 E-10	5.5 E-10
Argent									
Ag-102	0.215 h	0.100	4.2 E-10	0.050	2.4 E-10	1.2 E-10	7.3 E-11	5.0 E-11	4.0 E-11
Ag-103	1.09 h	0.100	4.5 E-10	0.050	2.7 E-10	1.4 E-10	8.3 E-11	5.5 E-11	4.3 E-11
Ag-104	1.15 h	0.100	4.3 E-10	0.050	2.9 E-10	1.7 E-10	1.1 E-10	7.5 E-11	6.0 E-11
Ag-104m	0.558 h	0.100	5.6 E-10	0.050	3.3 E-10	1.7 E-10	1.0 E-10	6.8 E-11	5.4 E-11
Ag-105	41.0 d	0.100	3.9 E-09	0.050	2.5 E-09	1.4 E-09	9.1 E-10	5.9 E-10	4.7 E-10
Ag-106	0.399 h	0.100	3.7 E-10	0.050	2.1 E-10	1.0 E-10	6.0 E-11	4.1 E-11	3.2 E-11
Ag-106m	8.41 d	0.100	9.7 E-09	0.050	6.9 E-09	4.1 E-09	2.8 E-09	1.8 E-09	1.5 E-09
Ag-108m	1.27 E+02 a	0.100	2.1 E-08	0.050	1.1 E-08	6.5 E-09	4.3 E-09	2.8 E-09	2.3 E-09
Ag-110m	250 d	0.100	2.4 E-08	0.050	1.4 E-08	7.8 E-09	5.2 E-09	3.4 E-09	2.8 E-09
Ag-111	7.45 d	0.100	1.4 E-08	0.050	9.3 E-09	4.6 E-09	2.7 E-09	1.6 E-09	1.3 E-09
Ag-112	3.12 h	0.100	4.9 E-09	0.050	3.0 E-09	1.5 E-09	8.9 E-10	5.4 E-10	4.3 E-10
Ag-115	0.333 h	0.100	7.2 E-10	0.050	4.1 E-10	2.0 E-10	1.2 E-10	7.7 E-11	6.0 E-11
Cadmiu									
Cd-104	0.961 h	0.100	4.2 E-10	0.050	2.9 E-10	1.7 E-10	1.1 E-10	7.2 E-11	5.4 E-11
Cd-107	6.49 h	0.100	7.1 E-10	0.050	4.6 E-10	2.3 E-10	1.3 E-10	7.8 E-11	6.2 E-11
Cd-109	1.27 a	0.100	2.1 E-08	0.050	9.5 E-09	5.5 E-09	3.5 E-09	2.4 E-09	2.0 E-09
Cd-113	9.30 E+15 a	0.100	1.0 E-07	0.050	4.8 E-08	3.7 E-08	3.0 E-08	2.6 E-08	2.5 E-08
Cd-113m	13.6 a	0.100	1.2 E-07	0.050	5.6 E-08	3.9 E-08	2.9 E-08	2.4 E-08	2.3 E-08
Cd-115	2.23 d	0.100	1.4 E-08	0.050	9.7 E-09	4.9 E-09	2.9 E-09	1.7 E-09	1.4 E-09
Cd-115m	44.6 d	0.100	4.1 E-08	0.050	1.9 E-08	9.7 E-09	6.9 E-09	4.1 E-09	3.3 E-09
Cd-117	2.49 h	0.100	2.9 E-09	0.050	1.9 E-09	9.5 E-10	5.7 E-10	3.5 E-10	2.8 E-10
Cd-117m	3.36 h	0.100	2.6 E-09	0.050	1.7 E-09	9.0 E-10	5.6 E-10	3.5 E-10	2.8 E-10
Indiu									
In-109	4.20 h	0.040	5.2 E-10	0.020	3.6 E-10	2.0 E-10	1.3 E-10	8.2 E-11	6.6 E-11
In-110	4.90 h	0.040	1.5 E-09	0.020	1.1 E-09	6.5 E-10	4.4 E-10	3.0 E-10	2.4 E-10
In-110	1.15 h	0.040	1.1 E-09	0.020	6.4 E-10	3.2 E-10	1.9 E-10	1.3 E-10	1.0 E-10
In-111	2.83 d	0.040	2.4 E-09	0.020	1.7 E-09	9.1 E-10	5.9 E-10	3.7 E-10	2.9 E-10
In-112	0.240 h	0.040	1.2 E-10	0.020	6.7 E-11	3.3 E-11	1.9 E-11	1.3 E-11	1.0 E-11
In-113m	1.66 h	0.040	3.0 E-10	0.020	1.8 E-10	9.3 E-11	6.2 E-11	3.6 E-11	2.8 E-11
In-114m	49.5 d	0.040	5.6 E-08	0.020	3.1 E-08	1.5 E-08	9.0 E-09	5.2 E-09	4.1 E-09
In-115	5.10 E+15 a	0.040	1.3 E-07	0.020	6.4 E-08	4.8 E-08	4.3 E-08	3.6 E-08	3.2 E-08
In-115m	4.49 h	0.040	9.6 E-10	0.020	6.0 E-10	3.0 E-10	1.8 E-10	1.1 E-10	8.6 E-11
In-116m	0.902 h	0.040	5.8 E-10	0.020	3.6 E-10	1.9 E-10	1.2 E-10	8.0 E-11	6.4 E-11
In-117	0.730 h	0.040	3.3 E-10	0.020	1.9 E-10	9.7 E-11	5.8 E-11	3.9 E-11	3.1 E-11
In-117m	1.94 h	0.040	1.4 E-09	0.020	8.6 E-10	4.3 E-10	2.5 E-10	1.6 E-10	1.2 E-10
In-119m	0.300 h	0.040	5.9 E-10	0.020	3.2 E-10	1.6 E-10	8.8 E-11	6.0 E-11	4.7 E-11
Staniu									
Sn-110	4.00 h	0.040	3.5 E-09	0.020	2.3 E-09	1.2 E-09	7.4 E-10	4.4 E-10	3.5 E-10
Sn-111	0.588 h	0.040	2.5 E-10	0.020	1.5 E-10	7.4 E-11	4.4 E-11	3.0 E-11	2.3 E-11
Sn-113	115 d	0.040	7.8 E-09	0.020	5.0 E-09	2.6 E-09	1.6 E-09	9.2 E-10	7.3 E-10
Sn-117m	13.6 d	0.040	7.7 E-09	0.020	5.0 E-09	2.5 E-09	1.5 E-09	8.8 E-10	7.1 E-10
Sn-119m	293 d	0.040	4.1 E-09	0.020	2.5 E-09	1.3 E-09	7.5 E-10	4.3 E-10	3.4 E-10

Sn-121	1.13 d	0.040	2.6 E-09	0.020	1.7 E-09	8.4 E-10	5.0 E-10	2.8 E-10	2.3 E-10
Sn-121m	55.0 a	0.040	4.6 E-09	0.020	2.7 E-09	1.4 E-09	8.2 E-10	4.7 E-10	3.8 E-10
Sn-123	129 d	0.040	2.5 E-08	0.020	1.6 E-08	7.8 E-09	4.6 E-09	2.6 E-09	2.1 E-09
Sn-123m	0.668 h	0.040	4.7 E-10	0.020	2.6 E-10	1.3 E-10	7.3 E-11	4.9 E-11	3.8 E-11
Sn-125	9.64 d	0.040	3.5 E-08	0.020	2.2 E-08	1.1 E-08	6.7 E-09	3.8 E-09	3.1 E-09
Sn-126	1.00 E+05 a	0.040	5.0 E-08	0.020	3.0 E-08	1.6 E-08	9.8 E-09	5.9 E-09	4.7 E-09
Sn-127	2.10 h	0.040	2.0 E-09	0.020	1.3 E-09	6.6 E-10	4.0 E-10	2.5 E-10	2.0 E-10
Sn-128	0.985 h	0.040	1.6 E-09	0.020	9.7 E-10	4.9 E-10	3.0 E-10	1.9 E-10	1.5 E-10

Stibiu									
Sb-115	0.530 h	0.200	2.5 E-10	0.100	1.5 E-10	7.5 E-11	4.5 E-11	3.1 E-11	2.4 E-11
Sb-116	0.263 h	0.200	2.7 E-10	0.100	1.6 E-10	8.0 E-11	4.8 E-11	3.3 E-11	2.6 E-11
Sb-116m	1.00 h	0.200	5.0 E-10	0.100	3.3 E-10	1.9 E-10	1.2 E-10	8.3 E-11	6.7 E-11
Sb-117	2.80 h	0.200	1.6 E-10	0.100	1.0 E-10	5.6 E-11	3.5 E-11	2.2 E-11	1.8 E-11
Sb-118m	5.00 h	0.200	1.3 E-09	0.100	1.0 E-09	5.8 E-10	3.9 E-10	2.6 E-10	2.1 E-10
Sb-119	1.59 d	0.200	8.4 E-10	0.100	5.8 E-10	3.0 E-10	1.8 E-10	1.0 E-10	8.0 E-11
Sb-120	5.76 d	0.200	8.1 E-09	0.100	6.0 E-09	3.5 E-09	2.3 E-09	1.6 E-09	1.2 E-09
Sb-120	0.265 h	0.200	1.7 E-10	0.100	9.4 E-11	4.6 E-11	2.7 E-11	1.8 E-11	1.4 E-11
Sb-122	2.70 d	0.200	1.8 E-08	0.100	1.2 E-08	6.1 E-09	3.7 E-09	2.1 E-09	1.7 E-09
Sb-124	60.2 d	0.200	2.5 E-08	0.100	1.6 E-08	8.4 E-09	5.2 E-09	3.2 E-09	2.5 E-09
Sb-124m	0.337 h	0.200	8.5 E-11	0.100	4.9 E-11	2.5 E-11	1.5 E-11	1.0 E-11	8.0 E-12
Sb-125	2.77 a	0.200	1.1 E-08	0.100	6.1 E-09	3.4 E-09	2.1 E-09	1.4 E-09	1.1 E-09
Sb-126	12.4 d	0.200	2.0 E-08	0.100	1.4 E-08	7.6 E-09	4.9 E-09	3.1 E-09	2.4 E-09
Sb-126m	0.317 h	0.200	3.9 E-10	0.100	2.2 E-10	1.1 E-10	6.6 E-11	4.5 E-11	3.6 E-11
Sb-127	3.85 d	0.200	1.7 E-08	0.100	1.2 E-08	5.9 E-09	3.6 E-09	2.1 E-09	1.7 E-09
Sb-128	9.01 h	0.200	6.3 E-09	0.100	4.5 E-09	2.4 E-09	1.5 E-09	9.5 E-10	7.6 E-10
Sb-128	0.173 h	0.200	3.7 E-10	0.100	2.1 E-10	1.0 E-10	6.0 E-11	4.1 E-11	3.3 E-11
Sb-129	4.32 h	0.200	4.3 E-09	0.100	2.8 E-09	1.5 E-09	8.8 E-10	5.3 E-10	4.2 E-10
Sb-130	0.667 h	0.200	9.1 E-10	0.100	5.4 E-10	2.8 E-10	1.7 E-10	1.2 E-10	9.1 E-11
Sb-131	0.383 h	0.200	1.1 E-09	0.100	7.3 E-10	3.9 E-10	2.1 E-10	1.4 E-10	1.0 E-10

Telur									
Te-116	2.49 h	0.600	1.4 E-09	0.300	1.0 E-09	5.5 E-10	3.4 E-10	2.1 E-10	1.7 E-10
Te-121	17.0 d	0.600	3.1 E-09	0.300	2.0 E-09	1.2 E-09	8.0 E-10	5.4 E-10	4.3 E-10
Te-121m	154 d	0.600	2.7 E-08	0.300	1.2 E-08	6.9 E-09	4.2 E-09	2.8 E-09	2.3 E-09
Te-123	1.00 E+13 a	0.600	2.0 E-08	0.300	9.3 E-09	6.9 E-09	5.4 E-09	4.7 E-09	4.4 E-09
Te-123m	120 d	0.600	1.9 E-08	0.300	8.8 E-09	4.9 E-09	2.8 E-09	1.7 E-09	1.4 E-09
Te-125m	58.0 d	0.600	1.3 E-08	0.300	6.3 E-09	3.3 E-09	1.9 E-09	1.1 E-09	8.7 E-10
Te-127	9.35 h	0.600	1.5 E-09	0.300	1.2 E-09	6.2 E-10	3.6 E-10	2.1 E-10	1.7 E-10
Te-127m	109 d	0.600	4.1 E-08	0.300	1.8 E-08	9.5 E-09	5.2 E-09	3.0 E-09	2.3 E-09
Te-129	1.16 h	0.600	7.5 E-10	0.300	4.4 E-10	2.1 E-10	1.2 E-10	8.0 E-11	6.3 E-11
Te-129m	33.6 d	0.600	4.4 E-08	0.300	2.4 E-08	1.2 E-08	6.6 E-09	3.9 E-09	3.0 E-09
Te-131	0.417 h	0.600	9.0 E-10	0.300	6.6 E-10	3.5 E-10	1.9 E-10	1.2 E-10	8.7 E-11
Te-131m	1.25 d	0.600	2.0 E-08	0.300	1.4 E-08	7.8 E-09	4.3 E-09	2.7 E-09	1.9 E-09
Te-132	3.26 d	0.600	4.8 E-08	0.300	3.0 E-08	1.6 E-08	8.3 E-09	5.3 E-09	3.8 E-09
Te-133	0.207 h	0.600	8.4 E-10	0.300	6.3 E-10	3.3 E-10	1.6 E-10	1.1 E-10	7.2 E-11
Te-133m	0.923 h	0.600	3.1 E-09	0.300	2.4 E-09	1.3 E-09	6.3 E-10	4.1 E-10	2.8 E-10
Te-134	0.696 h	0.600	1.1 E-09	0.300	7.5 E-10	3.9 E-10	2.2 E-10	1.4 E-10	1.1 E-10

Iod									
I-120	1.35 h	1.000	3.9 E-09	1.000	2.8 E-09	1.4 E-09	7.2 E-10	4.8 E-10	3.4 E-10
I-120m	0.883 h	1.000	2.3 E-09	1.000	1.5 E-09	7.8 E-10	4.2 E-10	2.9 E-10	2.1 E-10
I-121	2.12 h	1.000	6.2 E-10	1.000	5.3 E-10	3.1 E-10	1.7 E-10	1.2 E-10	8.2 E-11
I-123	13.2 h	1.000	2.2 E-09	1.000	1.9 E-09	1.1 E-09	4.9 E-10	3.3 E-10	2.1 E-10
I-124	4.18 d	1.000	1.2 E-07	1.000	1.1 E-07	6.3 E-08	3.1 E-08	2.0 E-08	1.3 E-08
I-125	60.1 d	1.000	5.2 E-08	1.000	5.7 E-08	4.1 E-08	3.1 E-08	2.2 E-08	1.5 E-08
I-126	13.0 d	1.000	2.1 E-07	1.000	2.1 E-07	1.3 E-07	6.8 E-08	4.5 E-08	2.9 E-08
I-128	0.416 h	1.000	5.7 E-10	1.000	3.3 E-10	1.6 E-10	8.9 E-11	6.0 E-11	4.6 E-11

I-129	1.57 E+07 a	1.000	1.8 E-07	1.000	2.2 E-07	1.7 E-07	1.9 E-07	1.4 E-07	1.1 E-07
I-130	12.4 h	1.000	2.1 E-08	1.000	1.8 E-08	9.8 E-09	4.6 E-09	3.0 E-09	2.0 E-09
I-131	8.04 d	1.000	1.8 E-07	1.000	1.8 E-07	1.0 E-07	5.2 E-08	3.4 E-08	2.2 E-08
I-132	2.30 h	1.000	3.0 E-09	1.000	2.4 E-09	1.3 E-09	6.2 E-10	4.1 E-10	2.9 E-10
I-132m	1.39 h	1.000	2.4 E-09	1.000	2.0 E-09	1.1 E-09	5.0 E-10	3.3 E-10	2.2 E-10
I-133	20.8 h	1.000	4.9 E-08	1.000	4.4 E-08	2.3 E-08	1.0 E-08	6.8 E-09	4.3 E-09
I-134	0.876 h	1.000	1.1 E-09	1.000	7.5 E-10	3.9 E-10	2.1 E-10	1.4 E-10	1.1 E-10
I-135	6.61 h	1.000	1.0 E-08	1.000	8.9 E-09	4.7 E-09	2.2 E-09	1.4 E-09	9.3 E-10
Cesiu									
Cs-125	0.750 h	1.000	3.9 E-10	1.000	2.2 E-10	1.1 E-10	6.5 E-11	4.4 E-11	3.5 E-11
Cs-127	6.25 h	1.000	1.8 E-10	1.000	1.2 E-10	6.6 E-11	4.2 E-11	2.9 E-11	2.4 E-11
Cs-129	1.34 d	1.000	4.4 E-10	1.000	3.0 E-10	1.7 E-10	1.1 E-10	7.2 E-11	6.0 E-11
Cs-130	0.498 h	1.000	3.3 E-10	1.000	1.8 E-10	9.0 E-11	5.2 E-11	3.6 E-11	2.8 E-11
Cs-131	9.69 d	1.000	4.6 E-10	1.000	2.9 E-10	1.6 E-10	1.0 E-10	6.9 E-11	5.8 E-11
Cs-132	6.48 d	1.000	2.7 E-09	1.000	1.8 E-09	1.1 E-09	7.7 E-10	5.7 E-10	5.0 E-10
Cs-134	2.06 a	1.000	2.6 E-08	1.000	1.6 E-08	1.3 E-08	1.4 E-08	1.9 E-08	1.9 E-08
Cs-134m	2.90 h	1.000	2.1 E-10	1.000	1.2 E-10	5.9 E-11	3.5 E-11	2.5 E-11	2.0 E-11
Cs-135	2.30 E+06 a	1.000	4.1 E-09	1.000	2.3 E-09	1.7 E-09	1.7 E-09	2.0 E-09	2.0 E-09
Cs-135m	0.883 h	1.000	1.3 E-10	1.000	8.6 E-11	4.9 E-11	3.2 E-11	2.3 E-11	1.9 E-11
Cs-136	13.1 d	1.000	1.5 E-08	1.000	9.5 E-09	6.1 E-09	4.4 E-09	3.4 E-09	3.0 E-09
Cs-137	30.0 a	1.000	2.1 E-08	1.000	1.2 E-08	9.6 E-09	1.0 E-08	1.3 E-08	1.3 E-08
Cs-138	0.536 h	1.000	1.1 E-09	1.000	5.9 E-10	2.9 E-10	1.7 E-10	1.2 E-10	9.2 E-11
Bariu (*)									
Ba-126	1.61 h	0.600	2.7 E-09	0.200	1.7 E-09	8.5 E-10	5.0 E-10	3.1 E-10	2.6 E-10
Ba-128	2.43 d	0.600	2.0 E-08	0.200	1.7 E-08	9.0 E-09	5.2 E-09	3.0 E-09	2.7 E-09
Ba-131	11.8 d	0.600	4.2 E-09	0.200	2.6 E-09	1.4 E-09	9.4 E-10	6.2 E-10	4.5 E-10
Ba-131m	0.243 h	0.600	5.8 E-11	0.200	3.2 E-11	1.6 E-11	9.3 E-12	6.3 E-12	4.9 E-12
Ba-133	10.7 a	0.600	2.2 E-08	0.200	6.2 E-09	3.9 E-09	4.6 E-09	7.3 E-09	1.5 E-09
Ba-133m	1.62 d	0.600	4.2 E-09	0.200	3.6 E-09	1.8 E-09	1.1 E-09	5.9 E-10	5.4 E-10
Ba-135m	1.20 d	0.600	3.3 E-09	0.200	2.9 E-09	1.5 E-09	8.5 E-10	4.7 E-10	4.3 E-10
Ba-139	1.38 h	0.600	1.4 E-09	0.200	8.4 E-10	4.1 E-10	2.4 E-10	1.5 E-10	1.2 E-10
Ba-140	12.7 d	0.600	3.2 E-08	0.200	1.8 E-08	9.2 E-09	5.8 E-09	3.7 E-09	2.6 E-09
Ba-141	0.305 h	0.600	7.6 E-10	0.200	4.7 E-10	2.3 E-10	1.3 E-10	8.6 E-11	7.0 E-11
Ba-142	0.177 h	0.600	3.6 E-10	0.200	2.2 E-10	1.1 E-10	6.6 E-11	4.3 E-11	3.5 E-11
Lantan									
La-131	0.983 h	0.005	3.5 E-10	5.0 E-04	2.1 E-10	1.1 E-10	6.6 E-11	4.4 E-11	3.5 E-11
La-132	4.80 h	0.005	3.8 E-09	5.0 E-04	2.4 E-09	1.3 E-09	7.8 E-10	4.8 E-10	3.9 E-10
La-135	19.5 h	0.005	2.8 E-10	5.0 E-04	1.9 E-10	1.0 E-10	6.4 E-11	3.9 E-11	3.0 E-11
La-137	6.00 E+04 a	0.005	1.1 E-09	5.0 E-04	4.5 E-10	2.5 E-10	1.6 E-10	1.0 E-10	8.1 E-11
La-138	1.35 E+11 a	0.005	1.3 E-08	5.0 E-04	4.6 E-09	2.7 E-09	1.9 E-09	1.3 E-09	1.1 E-09
La-140	1.68 d	0.005	2.0 E-08	5.0 E-04	1.3 E-08	6.8 E-09	4.2 E-09	2.5 E-09	2.0 E-09
La-141	3.93 h	0.005	4.3 E-09	5.0 E-04	2.6 E-09	1.3 E-09	7.6 E-10	4.5 E-10	3.6 E-10
La-142	1.54 h	0.005	1.9 E-09	5.0 E-04	1.1 E-09	5.8 E-10	3.5 E-10	2.3 E-10	1.8 E-10
La-143	0.237 h	0.005	6.9 E-10	5.0 E-04	3.9 E-10	1.9 E-10	1.1 E-10	7.1 E-11	5.6 E-11
Ceriu									
Ce-134	3.00 d	0.005	2.8 E-08	5.0 E-04	1.8 E-08	9.1 E-09	5.5 E-09	3.2 E-09	2.5 E-09
Ce-135	17.6 h	0.005	7.0 E-09	5.0 E-04	4.7 E-09	2.6 E-09	1.6 E-09	1.0 E-09	7.9 E-10
Ce-137	9.00 h	0.005	2.6 E-10	5.0 E-04	1.7 E-10	8.8 E-11	5.4 E-11	3.2 E-11	2.5 E-11
Ce-137m	1.43 d	0.005	6.1 E-09	5.0 E-04	3.9 E-09	2.0 E-09	1.2 E-09	6.8 E-10	5.4 E-10
Ce-139	138 d	0.005	2.6 E-09	5.0 E-04	1.6 E-09	8.6 E-10	5.4 E-10	3.3 E-10	2.6 E-10
Ce-141	32.5 d	0.005	8.1 E-09	5.0 E-04	5.1 E-09	2.6 E-09	1.5 E-09	8.8 E-10	7.1 E-10
Ce-143	1.38 d	0.005	1.2 E-08	5.0 E-04	8.0 E-09	4.1 E-09	2.4 E-09	1.4 E-09	1.1 E-09
Ce-144	284 d	0.005	6.6 E-08	5.0 E-04	3.9 E-08	1.9 E-08	1.1 E-08	6.5 E-09	5.2 E-09

Praseodim									
Pr-136	0.218 h	0.005	3.7 E-10	5.0 E-04	2.1 E-10	1.0 E-10	6.1 E-11	4.2 E-11	3.3 E-11
Pr-137	1.28 h	0.005	4.1 E-10	5.0 E-04	2.5 E-10	1.3 E-10	7.7 E-11	5.0 E-11	4.0 E-11
Pr-138m	2.10 h	0.005	1.0 E-09	5.0 E-04	7.4 E-10	4.1 E-10	2.6 E-10	1.6 E-10	1.3 E-10
Pr-139	4.51 h	0.005	3.2 E-10	5.0 E-04	2.0 E-10	1.1 E-10	6.5 E-11	4.0 E-11	3.1 E-11
Pr-142	19.1 h	0.005	1.5 E-08	5.0 E-04	9.8 E-09	4.9 E-09	2.9 E-09	1.6 E-09	1.3 E-09
Pr-142m	0.243 h	0.005	2.0 E-10	5.0 E-04	1.2 E-10	6.2 E-11	3.7 E-11	2.1 E-11	1.7 E-11
Pr-143	13.6 d	0.005	1.4 E-08	5.0 E-04	8.7 E-09	4.3 E-09	2.6 E-09	1.5 E-09	1.2 E-09
Pr-144	0.288 h	0.005	6.4 E-10	5.0 E-04	3.5 E-10	1.7 E-10	9.5 E-11	6.5 E-11	5.0 E-11
Pr-145	5.98 h	0.005	4.7 E-09	5.0 E-04	2.9 E-09	1.4 E-09	8.5 E-10	4.9 E-10	3.9 E-10
Pr-147	0.227 h	0.005	3.9 E-10	5.0 E-04	2.2 E-10	1.1 E-10	6.1 E-11	4.2 E-11	3.3 E-11
Neodim									
Nd-136	0.844 h	0.005	1.0 E-09	5.0 E-04	6.1 E-10	3.1 E-10	1.9 E-10	1.2 E-10	9.9 E-11
Nd-138	5.04 h	0.005	7.2 E-09	5.0 E-04	4.5 E-09	2.3 E-09	1.3 E-09	8.0 E-10	6.4 E-10
Nd-139	0.495 h	0.005	2.1 E-10	5.0 E-04	1.2 E-10	6.3 E-11	3.7 E-11	2.5 E-11	2.0 E-11
Nd-139m	5.50 h	0.005	2.1 E-09	5.0 E-04	1.4 E-09	7.8 E-10	5.0 E-10	3.1 E-10	2.5 E-10
Nd-141	2.49 h	0.005	7.8 E-11	5.0 E-04	5.0 E-11	2.7 E-11	1.6 E-11	1.0 E-11	8.3 E-12
Nd-147	11.0 d	0.005	1.2 E-08	5.0 E-04	7.8 E-09	3.9 E-09	2.3 E-09	1.3 E-09	1.1 E-09
Nd-149	1.73 h	0.005	1.4 E-09	5.0 E-04	8.7 E-10	4.3 E-10	2.6 E-10	1.6 E-10	1.2 E-10
Nd-151	0.207 h	0.005	3.4 E-10	5.0 E-04	2.0 E-10	9.7 E-11	5.7 E-11	3.8 E-11	3.0 E-11
Prometiū									
Pm-141	0.348 h	0.005	4.2 E-10	5.0 E-04	2.4 E-10	1.2 E-10	6.8 E-11	4.6 E-11	3.6 E-11
Pm-143	265 d	0.005	1.9 E-09	5.0 E-04	1.2 E-09	6.7 E-10	4.4 E-10	2.9 E-10	2.3 E-10
Pm-144	363 d	0.005	7.6 E-09	5.0 E-04	4.7 E-09	2.7 E-09	1.8 E-09	1.2 E-09	9.7 E-10
Pm-145	17.7 a	0.005	1.5 E-09	5.0 E-04	6.8 E-10	3.7 E-10	2.3 E-10	1.4 E-10	1.1 E-10
Pm-146	5.53 a	0.005	1.0 E-08	5.0 E-04	5.1 E-09	2.8 E-09	1.8 E-09	1.1 E-09	9.0 E-10
Pm-147	2.62 a	0.005	3.6 E-09	5.0 E-04	1.9 E-09	9.6 E-10	5.7 E-10	3.2 E-10	2.6 E-10
Pm-148	5.37 d	0.005	3.0 E-08	5.0 E-04	1.9 E-08	9.7 E-09	5.8 E-09	3.3 E-09	2.7 E-09
Pm-148m	41.3 d	0.005	1.5 E-08	5.0 E-04	1.0 E-08	5.5 E-09	3.5 E-09	2.2 E-09	1.7 E-09
Pm-149	2.21 d	0.005	1.2 E-08	5.0 E-04	7.4 E-09	3.7 E-09	2.2 E-09	1.2 E-09	9.9 E-10
Pm-150	2.68 h	0.005	2.8 E-09	5.0 E-04	1.7 E-09	8.7 E-10	5.2 E-10	3.2 E-10	2.6 E-10
Pm-151	1.18 d	0.005	8.0 E-09	5.0 E-04	5.1 E-09	2.6 E-09	1.6 E-09	9.1 E-10	7.3 E-10
Samariu									
Sm-141	0.170 h	0.005	4.5 E-10	5.0 E-04	2.5 E-10	1.3 E-10	7.3 E-11	5.0 E-11	3.9 E-11
Sm-141m	0.377 h	0.005	7.0 E-10	5.0 E-04	4.0 E-10	2.0 E-10	1.2 E-10	8.2 E-11	6.5 E-11
Sm-142	1.21 h	0.005	2.2 E-09	5.0 E-04	1.3 E-09	6.2 E-10	3.6 E-10	2.4 E-10	1.9 E-10
Sm-145	340 d	0.005	2.4 E-09	5.0 E-04	1.4 E-09	7.3 E-10	4.5 E-10	2.7 E-10	2.1 E-10
Sm-146	1.03 E+08 a	0.005	1.5 E-06	5.0 E-04	1.5 E-07	1.0 E-07	7.0 E-08	5.8 E-08	5.4 E-08
Sm-147	1.06 E+11 a	0.005	1.4 E-06	5.0 E-04	1.4 E-07	9.2 E-08	6.4 E-08	5.2 E-08	4.9 E-08
Sm-151	90.0 a	0.005	1.5 E-09	5.0 E-04	6.4 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.8 E-11
Sm-153	1.95 d	0.005	8.4 E-09	5.0 E-04	5.4 E-09	2.7 E-09	1.6 E-09	9.2 E-10	7.4 E-10
Sm-155	0.368 h	0.005	3.6 E-10	5.0 E-04	2.0 E-10	9.7 E-11	5.5 E-11	3.7 E-11	2.9 E-11
Sm-156	9.40 h	0.005	2.8 E-09	5.0 E-04	1.8 E-09	9.0 E-10	5.4 E-10	3.1 E-10	2.5 E-10
Europiu									
Eu-145	5.94 d	0.005	5.1 E-09	5.0 E-04	3.7 E-09	2.1 E-09	1.4 E-09	9.4 E-10	7.5 E-10
Eu-146	4.61 d	0.005	8.5 E-09	5.0 E-04	6.2 E-09	3.6 E-09	2.4 E-09	1.6 E-09	1.3 E-09
Eu-147	24.0 d	0.005	3.7 E-09	5.0 E-04	2.5 E-09	1.4 E-09	8.9 E-10	5.6 E-10	4.4 E-10
Eu-148	54.5 d	0.005	8.5 E-09	5.0 E-04	6.0 E-09	3.5 E-09	2.4 E-09	1.6 E-09	1.3 E-09
Eu-149	93.1 d	0.005	9.7 E-10	5.0 E-04	6.3 E-10	3.4 E-10	2.1 E-10	1.3 E-10	1.0 E-10
Eu-150	34.2 a	0.005	1.3 E-08	5.0 E-04	5.7 E-09	3.4 E-09	2.3 E-09	1.5 E-09	1.3 E-09
Eu-150	12.6 h	0.005	4.4 E-09	5.0 E-04	2.8 E-09	1.4 E-09	8.2 E-10	4.7 E-10	3.8 E-10
Eu-152	13.3 a	0.005	1.6 E-08	5.0 E-04	7.4 E-09	4.1 E-09	2.6 E-09	1.7 E-09	1.4 E-09
Eu-152m	9.32 h	0.005	5.7 E-09	5.0 E-04	3.6 E-09	1.8 E-09	1.1 E-09	6.2 E-10	5.0 E-10
Eu-154	8.80 a	0.005	2.5 E-08	5.0 E-04	1.2 E-08	6.5 E-09	4.1 E-09	2.5 E-09	2.0 E-09

Eu-155	4.96 a	0.005	4.3 E-09	5.0 E-04	2.2 E-09	1.1 E-09	6.8 E-10	4.0 E-10	3.2 E-10
Eu-156	15.2 d	0.005	2.2 E-08	5.0 E-04	1.5 E-08	7.5 E-09	4.6 E-09	2.7 E-09	2.2 E-09
Eu-157	15.1 h	0.005	6.7 E-09	5.0 E-04	4.3 E-09	2.2 E-09	1.3 E-09	7.5 E-10	6.0 E-10
Eu-158	0.765 h	0.005	1.1 E-09	5.0 E-04	6.2 E-10	3.1 E-10	1.8 E-10	1.2 E-10	9.4 E-11
Gadoliniu									
Gd-145	0.382 h	0.005	4.5 E-10	5.0 E-04	2.6 E-10	1.3 E-10	8.1 E-11	5.6 E-11	4.4 E-11
Gd-146	48.3 d	0.005	9.4 E-09	5.0 E-04	6.0 E-09	3.2 E-09	2.0 E-09	1.2 E-09	9.6 E-10
Gd-147	1.59 d	0.005	4.5 E-09	5.0 E-04	3.2 E-09	1.8 E-09	1.2 E-09	7.7 E-10	6.1 E-10
Gd-148	93.0 a	0.005	1.7 E-06	5.0 E-04	1.6 E-07	1.1 E-07	7.3 E-08	5.9 E-08	5.6 E-08
Gd-149	9.40 d	0.005	4.0 E-09	5.0 E-04	2.7 E-09	1.5 E-09	9.3 E-10	5.7 E-10	4.5 E-10
Gd-151	120 d	0.005	2.1 E-09	5.0 E-04	1.3 E-09	6.8 E-10	4.2 E-10	2.4 E-10	2.0 E-10
Gd-152	1.08 E+14 a	0.005	1.2 E-06	5.0 E-04	1.2 E-07	7.7 E-08	5.3 E-08	4.3 E-08	4.1 E-08
Gd-153	242 d	0.005	2.9 E-09	5.0 E-04	1.8 E-09	9.4 E-10	5.8 E-10	3.4 E-10	2.7 E-10
Gd-159	18.6 h	0.005	5.7 E-09	5.0 E-04	3.6 E-09	1.8 E-09	1.1 E-09	6.2 E-10	4.9 E-10
Terbiu									
Tb-147	1.65 h	0.005	1.5 E-09	5.0 E-04	1.0 E-09	5.4 E-10	3.3 E-10	2.0 E-10	1.6 E-10
Tb-149	4.15 h	0.005	2.4 E-09	5.0 E-04	1.5 E-09	8.0 E-10	5.0 E-10	3.1 E-10	2.5 E-10
Tb-150	3.27 h	0.005	2.5 E-09	5.0 E-04	1.6 E-09	8.3 E-10	5.1 E-10	3.2 E-10	2.5 E-10
Tb-151	17.6 h	0.005	2.7 E-09	5.0 E-04	1.9 E-09	1.0 E-09	6.7 E-10	4.2 E-10	3.4 E-10
Tb-153	2.34 d	0.005	2.3 E-09	5.0 E-04	1.5 E-09	8.2 E-10	5.1 E-10	3.1 E-10	2.5 E-10
Tb-154	21.4 h	0.005	4.7 E-09	5.0 E-04	3.4 E-09	1.9 E-09	1.3 E-09	8.1 E-10	6.5 E-10
Tb-155	5.32 d	0.005	1.9 E-09	5.0 E-04	1.3 E-09	6.8 E-10	4.3 E-10	2.6 E-10	2.1 E-10
Tb-156	5.34 d	0.005	9.0 E-09	5.0 E-04	6.3 E-09	3.5 E-09	2.3 E-09	1.5 E-09	1.2 E-09
Tb-156m	1.02 d	0.005	1.5 E-09	5.0 E-04	1.0 E-09	5.6 E-10	3.5 E-10	2.2 E-10	1.7 E-10
Tb-156m	5.00 h	0.005	8.0 E-10	5.0 E-04	5.2 E-10	2.7 E-10	1.7 E-10	1.0 E-10	8.1 E-11
Tb-157	1.50 E+02 a	0.005	4.9 E-10	5.0 E-04	2.2 E-10	1.1 E-10	6.8 E-11	4.1 E-11	3.4 E-11
Tb-158	1.50 E+02 a	0.005	1.3 E-08	5.0 E-04	5.9 E-09	3.3 E-09	2.1 E-09	1.4 E-09	1.1 E-09
Tb-160	72.3 d	0.005	1.6 E-08	5.0 E-04	1.0 E-08	5.4 E-09	3.3 E-09	2.0 E-09	1.6 E-09
Tb-161	6.91 d	0.005	8.3 E-09	5.0 E-04	5.3 E-09	2.7 E-09	1.6 E-09	9.0 E-10	7.2 E-10
Disprosiu									
Dy-155	10.0 h	0.005	9.7 E-10	5.0 E-04	6.8 E-10	3.8 E-10	2.5 E-10	1.6 E-10	1.3 E-10
Dy-157	8.10 h	0.005	4.4 E-10	5.0 E-04	3.1 E-10	1.8 E-10	1.2 E-10	7.7 E-11	6.1 E-11
Dy-159	144 d	0.005	1.0 E-09	5.0 E-04	6.4 E-10	3.4 E-10	2.1 E-10	1.3 E-10	1.0 E-10
Dy-165	2.33 h	0.005	1.3 E-09	5.0 E-04	7.9 E-10	3.9 E-10	2.3 E-10	1.4 E-10	1.1 E-10
Dy-166	3.40 d	0.005	1.9 E-08	5.0 E-04	1.2 E-08	6.0 E-09	3.6 E-09	2.0 E-09	1.6 E-09
Holmiu									
Ho-155	0.800 h	0.005	3.8 E-10	5.0 E-04	2.3 E-10	1.2 E-10	7.1 E-11	4.7 E-11	3.7 E-11
Ho-157	0.210 h	0.005	5.8 E-11	5.0 E-04	3.6 E-11	1.9 E-11	1.2 E-11	8.1 E-12	6.5 E-12
Ho-159	0.550 h	0.005	7.1 E-11	5.0 E-04	4.3 E-11	2.3 E-11	1.4 E-11	9.9 E-12	7.9 E-12
Ho-161	2.50 h	0.005	1.4 E-10	5.0 E-04	8.1 E-11	4.2 E-11	2.5 E-11	1.6 E-11	1.3 E-11
Ho-162	0.250 h	0.005	3.5 E-11	5.0 E-04	2.0 E-11	1.0 E-11	6.0 E-12	4.2 E-12	3.3 E-12
Ho-162m	1.13 h	0.005	2.4 E-10	5.0 E-04	1.5 E-10	7.9 E-11	4.9 E-11	3.3 E-11	2.6 E-11
Ho-164	0.483 h	0.005	1.2 E-10	5.0 E-04	6.5 E-11	3.2 E-11	1.8 E-11	1.2 E-11	9.5 E-12
Ho-164m	0.625 h	0.005	2.0 E-10	5.0 E-04	1.1 E-10	5.5 E-11	3.2 E-11	2.1 E-11	1.6 E-11
Ho-166	1.12 d	0.005	1.6 E-08	5.0 E-04	1.0 E-08	5.2 E-09	3.1 E-09	1.7 E-09	1.4 E-09
Ho-166m	1.20 E+03 a	0.005	2.6 E-08	5.0 E-04	9.3 E-09	5.3 E-09	3.5 E-09	2.4 E-09	2.0 E-09
Ho-167	3.10 h	0.005	8.8 E-10	5.0 E-04	5.5 E-10	2.8 E-10	1.7 E-10	1.0 E-10	8.3 E-11
Erbiu									
Er-161	3.24 h	0.005	6.5 E-10	5.0 E-04	4.4 E-10	2.4 E-10	1.6 E-10	1.0 E-10	8.0 E-11
Er-165	10.4 h	0.005	1.7 E-10	5.0 E-04	1.1 E-10	6.2 E-11	3.9 E-11	2.4 E-11	1.9 E-11
Er-169	9.30 d	0.005	4.4 E-09	5.0 E-04	2.8 E-09	1.4 E-09	8.2 E-10	4.7 E-10	3.7 E-10
Er-171	7.52 h	0.005	4.0 E-09	5.0 E-04	2.5 E-09	1.3 E-09	7.6 E-10	4.5 E-10	3.6 E-10
Er-172	2.05 d	0.005	1.0 E-08	5.0 E-04	6.8 E-09	3.5 E-09	2.1 E-09	1.3 E-09	1.0 E-09

Tuliu									
Tm-162	0.362 h	0.005	2.9 E-10	5.0 E-04	1.7 E-10	8.7 E-11	5.2 E-11	3.6 E-11	2.9 E-11
Tm-166	7.70 h	0.005	2.1 E-09	5.0 E-04	1.5 E-09	8.3 E-10	5.5 E-10	3.5 E-10	2.8 E-10
Tm-167	9.24 d	0.005	6.0 E-09	5.0 E-04	3.9 E-09	2.0 E-09	1.2 E-09	7.0 E-10	5.6 E-10
Tm-170	129 d	0.005	1.6 E-08	5.0 E-04	9.8 E-09	4.9 E-09	2.9 E-09	1.6 E-09	1.3 E-09
Tm-171	1.92 a	0.005	1.5 E-09	5.0 E-04	7.8 E-10	3.9 E-10	2.3 E-10	1.3 E-10	1.1 E-10
Tm-172	2.65 d	0.005	1.9 E-08	5.0 E-04	1.2 E-08	6.1 E-09	3.7 E-09	2.1 E-09	1.7 E-09
Tm-173	8.24 h	0.005	3.3 E-09	5.0 E-04	2.1 E-09	1.1 E-09	6.5 E-10	3.8 E-10	3.1 E-10
Tm-175	0.253 h	0.005	3.1 E-10	5.0 E-04	1.7 E-10	8.6 E-11	5.0 E-11	3.4 E-11	2.7 E-11
Yterbiu									
Yb-162	0.315 h	0.005	2.2 E-10	5.0 E-04	1.3 E-10	6.9 E-11	4.2 E-11	2.9 E-11	2.3 E-11
Yb-166	2.36 d	0.005	7.7 E-09	5.0 E-04	5.4 E-09	2.9 E-09	1.9 E-09	1.2 E-09	9.5 E-10
Yb-167	0.292 h	0.005	7.0 E-11	5.0 E-04	4.1 E-11	2.1 E-11	1.2 E-11	8.4 E-12	6.7 E-12
Yb-169	32.0 d	0.005	7.1 E-09	5.0 E-04	4.6 E-09	2.4 E-09	1.5 E-09	8.8 E-10	7.1 E-10
Yb-175	4.19 d	0.005	5.0 E-09	5.0 E-04	3.2 E-09	1.6 E-09	9.5 E-10	5.4 E-10	4.4 E-10
Yb-177	1.90 h	0.005	1.0 E-09	5.0 E-04	6.8 E-10	3.4 E-10	2.0 E-10	1.1 E-10	8.8 E-11
Yb-178	1.23 h	0.005	1.4 E-09	5.0 E-04	8.4 E-10	4.2 E-10	2.4 E-10	1.5 E-10	1.2 E-10
Lutețiu									
Lu-169	1.42 d	0.005	3.5 E-09	5.0 E-04	2.4 E-09	1.4 E-09	8.9 E-10	5.7 E-10	4.6 E-10
Lu-170	2.00 d	0.005	7.4 E-09	5.0 E-04	5.2 E-09	2.9 E-09	1.9 E-09	1.2 E-09	9.9 E-10
Lu-171	8.22 d	0.005	5.9 E-09	5.0 E-04	4.0 E-09	2.2 E-09	1.4 E-09	8.5 E-10	6.7 E-10
Lu-172	6.70 d	0.005	1.0 E-08	5.0 E-04	7.0 E-09	3.9 E-09	2.5 E-09	1.6 E-09	1.3 E-09
Lu-173	1.37 a	0.005	2.7 E-09	5.0 E-04	1.6 E-09	8.6 E-10	5.3 E-10	3.2 E-10	2.6 E-10
Lu-174	3.31 a	0.005	3.2 E-09	5.0 E-04	1.7 E-09	9.1 E-10	5.6 E-10	3.3 E-10	2.7 E-10
Lu-174m	142 d	0.005	6.2 E-09	5.0 E-04	3.8 E-09	1.9 E-09	1.1 E-09	6.6 E-10	5.3 E-10
Lu-176	3.60 E+10 a	0.005	2.4 E-08	5.0 E-04	1.1 E-08	5.7 E-09	3.5 E-09	2.2 E-09	1.8 E-09
Lu-176m	3.68 h	0.005	2.0 E-09	5.0 E-04	1.2 E-09	6.0 E-10	3.5 E-10	2.1 E-10	1.7 E-10
Lu-177	6.71 d	0.005	6.1 E-09	5.0 E-04	3.9 E-09	2.0 E-09	1.2 E-09	6.6 E-10	5.3 E-10
Lu-177m	161 d	0.005	1.7 E-08	5.0 E-04	1.1 E-08	5.8 E-09	3.6 E-09	2.1 E-09	1.7 E-09
Lu-178	0.473 h	0.005	5.9 E-10	5.0 E-04	3.3 E-10	1.6 E-10	9.0 E-11	6.1 E-11	4.7 E-11
Lu-178m	0.378 h	0.005	4.3 E-10	5.0 E-04	2.4 E-10	1.2 E-10	7.1 E-11	4.9 E-11	3.8 E-11
Lu-179	4.59 h	0.005	2.4 E-09	5.0 E-04	1.5 E-09	7.5 E-10	4.4 E-10	2.6 E-10	2.1 E-10
Hafniu									
Hf-170	16.0 h	0.020	3.9 E-09	0.002	2.7 E-09	1.5 E-09	9.5 E-10	6.0 E-10	4.8 E-10
Hf-172	1.87 a	0.020	1.9 E-08	0.002	6.1 E-09	3.3 E-09	2.0 E-09	1.3 E-09	1.0 E-09
Hf-173	24.0 h	0.020	1.9 E-09	0.002	1.3 E-09	7.2 E-10	4.6 E-10	2.8 E-10	2.3 E-10
Hf-175	70.0 d	0.020	3.8 E-09	0.002	2.4 E-09	1.3 E-09	8.4 E-10	5.2 E-10	4.1 E-10
Hf-177m	0.856 h	0.020	7.8 E-10	0.002	4.7 E-10	2.5 E-10	1.5 E-10	1.0 E-10	8.1 E-11
Hf-178m	31.0 a	0.020	7.0 E-08	0.002	1.9 E-08	1.1 E-08	7.8 E-09	5.5 E-09	4.7 E-09
Hf-179m	25.1 d	0.020	1.2 E-08	0.002	7.8 E-09	4.1 E-09	2.6 E-09	1.6 E-09	1.2 E-09
Hf-180m	5.50 h	0.020	1.4 E-09	0.002	9.7 E-10	5.3 E-10	3.3 E-10	2.1 E-10	1.7 E-10
Hf-181	42.4 d	0.020	1.2 E-08	0.002	7.4 E-09	3.8 E-09	2.3 E-09	1.4 E-09	1.1 E-09
Hf-182	9.00 E+06 a	0.020	5.6 E-08	0.002	7.9 E-09	5.4 E-09	4.0 E-09	3.3 E-09	3.0 E-09
Hf-182m	1.02 h	0.020	4.1 E-10	0.002	2.5 E-10	1.3 E-10	7.8 E-11	5.2 E-11	4.2 E-11
Hf-183	1.07 h	0.020	8.1 E-10	0.002	4.8 E-10	2.4 E-10	1.4 E-10	9.3 E-11	7.3 E-11
Hf-184	4.12 h	0.020	5.5 E-09	0.002	3.6 E-09	1.8 E-09	1.1 E-09	6.6 E-10	5.2 E-10
Tantal									
Ta-172	0.613 h	0.010	5.5 E-10	0.001	3.2 E-10	1.6 E-10	9.8 E-11	6.6 E-11	5.3 E-11
Ta-173	3.65 h	0.010	2.0 E-09	0.001	1.3 E-09	6.5 E-10	3.9 E-10	2.4 E-10	1.9 E-10
Ta-174	1.20 h	0.010	6.2 E-10	0.001	3.7 E-10	1.9 E-10	1.1 E-10	7.2 E-11	5.7 E-11
Ta-175	10.5 h	0.010	1.6 E-09	0.001	1.1 E-09	6.2 E-10	4.0 E-10	2.6 E-10	2.1 E-10
Ta-176	8.08 h	0.010	2.4 E-09	0.001	1.7 E-09	9.2 E-10	6.1 E-10	3.9 E-10	3.1 E-10
Ta-177	2.36 d	0.010	1.0 E-09	0.001	6.9 E-10	3.6 E-10	2.2 E-10	1.3 E-10	1.1 E-10

Ta-178	2.20 h	0.010	6.3 E-10	0.001	4.5 E-10	2.4 E-10	1.5 E-10	9.1 E-11	7.2 E-11
Ta-179	1.82 a	0.010	6.2 E-10	0.001	4.1 E-10	2.2 E-10	1.3 E-10	8.1 E-11	6.5 E-11
Ta-180	1.00 E+13 a	0.010	8.1 E-09	0.001	5.3 E-09	2.8 E-09	1.7 E-09	1.1 E-09	8.4 E-10
Ta-180m	8.10 h	0.010	5.8 E-10	0.001	3.7 E-10	1.9 E-10	1.1 E-10	6.7 E-11	5.4 E-11
Ta-182	115 d	0.010	1.4 E-08	0.001	9.4 E-09	5.0 E-09	3.1 E-09	1.9 E-09	1.5 E-09
Ta-182m	0.264 h	0.010	1.4 E-10	0.001	7.5 E-11	3.7 E-11	2.1 E-11	1.5 E-11	1.2 E-11
Ta-183	5.10 d	0.010	1.4 E-08	0.001	9.3 E-09	4.7 E-09	2.8 E-09	1.6 E-09	1.3 E-09
Ta-184	8.70 h	0.010	6.7 E-09	0.001	4.4 E-09	2.3 E-09	1.4 E-09	8.5 E-10	6.8 E-10
Ta-185	0.816 h	0.010	8.3 E-10	0.001	4.6 E-10	2.3 E-10	1.3 E-10	8.6 E-11	6.8 E-11
Ta-186	0.175 h	0.010	3.8 E-10	0.001	2.1 E-10	1.1 E-10	6.1 E-11	4.2 E-11	3.3 E-11
Wolfram									
W-176	2.30 h	0.600	6.8 E-10	0.300	5.5 E-10	3.0 E-10	2.0 E-10	1.3 E-10	1.0 E-10
W-177	2.25 h	0.600	4.4 E-10	0.300	3.2 E-10	1.7 E-10	1.1 E-10	7.2 E-11	5.8 E-11
W-178	21.7 d	0.600	1.8 E-09	0.300	1.4 E-09	7.3 E-10	4.5 E-10	2.7 E-10	2.2 E-10
W-179	0.625 h	0.600	3.4 E-11	0.300	2.0 E-11	1.0 E-11	6.2 E-12	4.2 E-12	3.3 E-12
W-181	121 d	0.600	6.3 E-10	0.300	4.7 E-10	2.5 E-10	1.6 E-10	9.5 E-11	7.6 E-11
W-185	75.1 d	0.600	4.4 E-09	0.300	3.3 E-09	1.6 E-09	9.7 E-10	5.5 E-10	4.4 E-10
W-187	23.9 h	0.600	5.5 E-09	0.300	4.3 E-09	2.2 E-09	1.3 E-09	7.8 E-10	6.3 E-10
W-188	69.4 d	0.600	2.1 E-08	0.300	1.5 E-08	7.7 E-09	4.6 E-09	2.6 E-09	2.1 E-09
Reniu									
Re-177	0.233 h	1.000	2.5 E-10	0.800	1.4 E-10	7.2 E-11	4.1 E-11	2.8 E-11	2.2 E-11
Re-178	0.220 h	1.000	2.9 E-10	0.800	1.6 E-10	7.9 E-11	4.6 E-11	3.1 E-11	2.5 E-11
Re-181	20.0 h	1.000	4.2 E-09	0.800	2.8 E-09	1.4 E-09	8.2 E-10	5.4 E-10	4.2 E-10
Re-182	2.67 d	1.000	1.4 E-08	0.800	8.9 E-09	4.7 E-09	2.8 E-09	1.8 E-09	1.4 E-09
Re-182	12.7 h	1.000	2.4 E-09	0.800	1.7 E-09	8.9 E-10	5.2 E-10	3.5 E-10	2.7 E-10
Re-184	38.0 d	1.000	8.9 E-09	0.800	5.6 E-09	3.0 E-09	1.8 E-09	1.3 E-09	1.0 E-09
Re-184m	165 d	1.000	1.7 E-08	0.800	9.8 E-09	4.9 E-09	2.8 E-09	1.9 E-09	1.5 E-09
Re-186	3.78 d	1.000	1.9 E-08	0.800	1.1 E-08	5.5 E-09	3.0 E-09	1.9 E-09	1.5 E-09
Re-186m	2.00 E+05 a	1.000	3.0 E-08	0.800	1.6 E-08	7.6 E-09	4.4 E-09	2.8 E-09	2.2 E-09
Re-187	5.00 E+10 a	1.000	6.8 E-11	0.800	3.8 E-11	1.8 E-11	1.0 E-11	6.6 E-12	5.1 E-12
Re-188	17.0 h	1.000	1.7 E-08	0.800	1.1 E-08	5.4 E-09	2.9 E-09	1.8 E-09	1.4 E-09
Re-188m	0.310 h	1.000	3.8 E-10	0.800	2.3 E-10	1.1 E-10	6.1 E-11	4.0 E-11	3.0 E-11
Re-189	1.01 d	1.000	9.8 E-09	0.800	6.2 E-09	3.0 E-09	1.6 E-09	1.0 E-09	7.8 E-10
Osmiu									
Os-180	0.366 h	0.020	1.6 E-10	0.010	9.8 E-11	5.1 E-11	3.2 E-11	2.2 E-11	1.7 E-11
Os-181	1.75 h	0.020	7.6 E-10	0.010	5.0 E-10	2.7 E-10	1.7 E-10	1.1 E-10	8.9 E-11
Os-182	22.0 h	0.020	4.6 E-09	0.010	3.2 E-09	1.7 E-09	1.1 E-09	7.0 E-10	5.6 E-10
Os-185	94.0 d	0.020	3.8 E-09	0.010	2.6 E-09	1.5 E-09	9.8 E-10	6.5 E-10	5.1 E-10
Os-189m	6.00 h	0.020	2.1 E-10	0.010	1.3 E-10	6.5 E-11	3.8 E-11	2.2 E-11	1.8 E-11
Os-191	15.4 d	0.020	6.3 E-09	0.010	4.1 E-09	2.1 E-09	1.2 E-09	7.0 E-10	5.7 E-10
Os-191m	13.0 h	0.020	1.1 E-09	0.010	7.1 E-10	3.5 E-10	2.1 E-10	1.2 E-10	9.6 E-11
Os-193	1.25 d	0.020	9.3 E-09	0.010	6.0 E-09	3.0 E-09	1.8 E-09	1.0 E-09	8.1 E-10
Os-194	6.00 a	0.020	2.9 E-08	0.010	1.7 E-08	8.8 E-09	5.2 E-09	3.0 E-09	2.4 E-09
Iridiu									
Ir-182	0.250 h	0.020	5.3 E-10	0.010	3.0 E-10	1.5 E-10	8.9 E-11	6.0 E-11	4.8 E-11
Ir-184	3.02 h	0.020	1.5 E-09	0.010	9.7 E-10	5.2 E-10	3.3 E-10	2.1 E-10	1.7 E-10
Ir-185	14.0 h	0.020	2.4 E-09	0.010	1.6 E-09	8.6 E-10	5.3 E-10	3.3 E-10	2.6 E-10
Ir-186	15.8 h	0.020	3.8 E-09	0.010	2.7 E-09	1.5 E-09	9.6 E-10	6.1 E-10	4.9 E-10
Ir-186	1.75 h	0.020	5.8 E-10	0.010	3.6 E-10	2.1 E-10	1.3 E-10	7.7 E-11	6.1 E-11
Ir-187	10.5 h	0.020	1.1 E-09	0.010	7.3 E-10	3.9 E-10	2.5 E-10	1.5 E-10	1.2 E-10
Ir-188	1.73 d	0.020	4.6 E-09	0.010	3.3 E-09	1.8 E-09	1.2 E-09	7.9 E-10	6.3 E-10
Ir-189	13.3 d	0.020	2.5 E-09	0.010	1.7 E-09	8.6 E-10	5.2 E-10	3.0 E-10	2.4 E-10
Ir-190	12.1 d	0.020	1.0 E-08	0.010	7.1 E-09	3.9 E-09	2.5 E-09	1.6 E-09	1.2 E-09
Ir-190m	3.10 h	0.020	9.4 E-10	0.010	6.4 E-10	3.5 E-10	2.3 E-10	1.5 E-10	1.2 E-10

Ir-190m	1.20 h	0.020	7.9 E-11	0.010	5.0 E-11	2.6 E-11	1.6 E-11	1.0 E-11	8.0 E-12
Ir-192	74.0 d	0.020	1.3 E-08	0.010	8.7 E-09	4.6 E-09	2.8 E-09	1.7 E-09	1.4 E-09
Ir-192m	2.41 E+02 a	0.020	2.8 E-09	0.010	1.4 E-09	8.3 E-10	5.5 E-10	3.7 E-10	3.1 E-10
Ir-193m	11.9 d	0.020	3.2 E-09	0.010	2.0 E-09	1.0 E-09	6.0 E-10	3.4 E-10	2.7 E-10
Ir-194	19.1 h	0.020	1.5 E-08	0.010	9.8 E-09	4.9 E-09	2.9 E-09	1.7 E-09	1.3 E-09
Ir-194m	171 d	0.020	1.7 E-08	0.010	1.1 E-08	6.4 E-09	4.1 E-09	2.6 E-09	2.1 E-09
Ir-195	2.50 h	0.020	1.2 E-09	0.010	7.3 E-10	3.6 E-10	2.1 E-10	1.3 E-10	1.0 E-10
Ir-195m	3.80 h	0.020	2.3 E-09	0.010	1.5 E-09	7.3 E-10	4.3 E-10	2.6 E-10	2.1 E-10
Platină									
Pt-186	2.00 h	0.020	7.8 E-10	0.010	5.3 E-10	2.9 E-10	1.8 E-10	1.2 E-10	9.3 E-11
Pt-188	10.2 d	0.020	6.7 E-09	0.010	4.5 E-09	2.4 E-09	1.5 E-09	9.5 E-10	7.6 E-10
Pt-189	10.9 h	0.020	1.1 E-09	0.010	7.4 E-10	3.9 E-10	2.5 E-10	1.5 E-10	1.2 E-10
Pt-191	2.80 d	0.020	3.1 E-09	0.010	2.1 E-09	1.1 E-09	6.9 E-10	4.2 E-10	3.4 E-10
Pt-193	50.0 a	0.020	3.7 E-10	0.010	2.4 E-10	1.2 E-10	6.9 E-11	3.9 E-11	3.1 E-11
Pt-193m	4.33 d	0.020	5.2 E-09	0.010	3.4 E-09	1.7 E-09	9.9 E-10	5.6 E-10	4.5 E-10
Pt-195m	4.02 d	0.020	7.1 E-09	0.010	4.6 E-09	2.3 E-09	1.4 E-09	7.9 E-10	6.3 E-10
Pt-197	18.3 h	0.020	4.7 E-09	0.010	3.0 E-09	1.5 E-09	8.8 E-10	5.1 E-10	4.0 E-10
Pt-197m	1.57 h	0.020	1.0 E-09	0.010	6.1 E-10	3.0 E-10	1.8 E-10	1.1 E-10	8.4 E-11
Pt-199	0.513 h	0.020	4.7 E-10	0.010	2.7 E-10	1.3 E-10	7.5 E-11	5.0 E-11	3.9 E-11
Pt-200	12.5 h	0.020	1.4 E-08	0.010	8.8 E-09	4.4 E-09	2.6 E-09	1.5 E-09	1.2 E-09
Aur									
Au-193	17.6 h	0.200	1.2 E-09	0.100	8.8 E-10	4.6 E-10	2.8 E-10	1.7 E-10	1.3 E-10
Au-194	1.65 d	0.200	2.9 E-09	0.100	2.2 E-09	1.2 E-09	8.1 E-10	5.3 E-10	4.2 E-10
Au-195	183 d	0.200	2.4 E-09	0.100	1.7 E-09	8.9 E-10	5.4 E-10	3.2 E-10	2.5 E-10
Au-198	2.69 d	0.200	1.0 E-08	0.100	7.2 E-09	3.7 E-09	2.2 E-09	1.3 E-09	1.0 E-09
Au-198m	2.30 d	0.200	1.2 E-08	0.100	8.5 E-09	4.4 E-09	2.7 E-09	1.6 E-09	1.3 E-09
Au-199	3.14 d	0.200	4.5 E-09	0.100	3.1 E-09	1.6 E-09	9.5 E-10	5.5 E-10	4.4 E-10
Au-200	0.807 h	0.200	8.3 E-10	0.100	4.7 E-10	2.3 E-10	1.3 E-10	8.7 E-11	6.8 E-11
Au-200m	18.7 h	0.200	9.2 E-09	0.100	6.6 E-09	3.5 E-09	2.2 E-09	1.3 E-09	1.1 E-09
Au-201	0.440 h	0.200	3.1 E-10	0.100	1.7 E-10	8.2 E-11	4.6 E-11	3.1 E-11	2.4 E-11
Mercur									
Hg-193 (organic)	3.50 h	1.000	3.3 E-10	1.000	1.9 E-10	9.8 E-11	5.8 E-11	3.9 E-11	3.1 E-11
		0.800	4.7 E-10	0.400	4.4 E-10	2.2 E-10	1.4 E-10	8.3 E-11	6.6 E-11
Hg-193 (anorganic)	3.50 h	0.040	8.5 E-10	0.020	5.5 E-10	2.8 E-10	1.7 E-10	1.0 E-10	8.2 E-11
Hg-193m (organic)	11.1 h	1.000	1.1 E-09	1.000	6.8 E-10	3.7 E-10	2.3 E-10	1.5 E-10	1.3 E-10
		0.800	1.6 E-09	0.400	1.8 E-09	9.5 E-10	6.0 E-10	3.7 E-10	3.0 E-10
Hg-193m (anorganic)	11.1 h	0.040	3.6 E-09	0.020	2.4 E-09	1.3 E-09	8.1 E-10	5.0 E-10	4.0 E-10
Hg-194 (organic)	2.60 E+02 a	1.000	1.3 E-07	1.000	1.2 E-07	8.4 E-08	6.6 E-08	5.5 E-08	5.1 E-08
		0.800	1.1 E-07	0.400	4.8 E-08	3.5 E-08	2.7 E-08	2.3 E-08	2.1 E-08
Hg-194 (anorganic)	2.60 E+02 a	0.040	7.2 E-09	0.020	3.6 E-09	2.6 E-09	1.9 E-09	1.5 E-09	1.4 E-09
Hg-195 (organic)	9.90 h	1.000	3.0 E-10	1.000	2.0 E-10	1.0 E-10	6.4 E-11	4.2 E-11	3.4 E-11
		0.800	4.6 E-10	0.400	4.8 E-10	2.5 E-10	1.5 E-10	9.3 E-11	7.5 E-11
Hg-195 (anorganic)	9.90 h	0.040	9.5 E-10	0.020	6.3 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.7 E-11
Hg-195m (organic)	1.73 d	1.000	2.1 E-09	1.000	1.3 E-09	6.8 E-10	4.2 E-10	2.7 E-10	2.2 E-10
		0.800	2.6 E-09	0.400	2.8 E-09	1.4 E-09	8.7 E-10	5.1 E-10	4.1 E-10
Hg-195m (anorganic)	1.73 d	0.040	5.8 E-09	0.020	3.8 E-09	2.0 E-09	1.2 E-09	7.0 E-10	5.6 E-10
Hg-197 (organic)	2.67 d	1.000	9.7 E-10	1.000	6.2 E-10	3.1 E-10	1.9 E-10	1.2 E-10	9.9 E-11
		0.800	1.3 E-09	0.400	1.2 E-09	6.1 E-10	3.7 E-10	2.2 E-10	1.7 E-10

Hg-197 (anorganic)	2.67 d	0.040	2.5 E-09	0.020	1.6 E-09	8.3 E-10	5.0 E-10	2.9 E-10	2.3 E-10
Hg-197m (organic)	23.8 h	1.000	1.5 E-09	1.000	9.5 E-10	4.8 E-10	2.9 E-10	1.8 E-10	1.5 E-10
Hg-197m (anorganic)	23.8 h	0.800	2.2 E-09	0.400	2.5 E-09	1.2 E-09	7.3 E-10	4.2 E-10	3.4 E-10
Hg-199m (organic)	0.710 h	1.000	3.4 E-10	1.000	1.9 E-10	9.3 E-11	5.3 E-11	3.6 E-11	2.8 E-11
Hg-199m (anorganic)	0.710 h	0.800	3.6 E-10	0.400	2.1 E-10	1.0 E-10	5.8 E-11	3.9 E-11	3.1 E-11
Hg-203 (organic)	46.6 d	1.000	1.5 E-08	1.000	1.1 E-08	5.7 E-09	3.6 E-09	2.3 E-09	1.9 E-09
Hg-203 (anorganic)	46.6 d	0.800	1.3 E-08	0.400	6.4 E-09	3.4 E-09	2.1 E-09	1.3 E-09	1.1 E-09
Hg-203 (anorganic)	46.6 d	0.040	5.5 E-09	0.020	3.6 E-09	1.8 E-09	1.1 E-09	6.7 E-10	5.4 E-10
Taliu									
Tl-194	0.550 h	1.000	6.1 E-11	1.000	3.9 E-11	2.2 E-11	1.4 E-11	1.0 E-11	8.1 E-12
Tl-194m	0.546 h	1.000	3.8 E-10	1.000	2.2 E-10	1.2 E-10	7.0 E-11	4.9 E-11	4.0 E-11
Tl-195	1.16 h	1.000	2.3 E-10	1.000	1.4 E-10	7.5 E-11	4.7 E-11	3.3 E-11	2.7 E-11
Tl-197	2.84 h	1.000	2.1 E-10	1.000	1.3 E-10	6.7 E-11	4.2 E-11	2.8 E-11	2.3 E-11
Tl-198	5.30 h	1.000	4.7 E-10	1.000	3.3 E-10	1.9 E-10	1.2 E-10	8.7 E-11	7.3 E-11
Tl-198m	1.87 h	1.000	4.8 E-10	1.000	3.0 E-10	1.6 E-10	9.7 E-11	6.7 E-11	5.4 E-11
Tl-199	7.42 h	1.000	2.3 E-10	1.000	1.5 E-10	7.7 E-11	4.8 E-11	3.2 E-11	2.6 E-11
Tl-200	1.09 d	1.000	1.3 E-09	1.000	9.1 E-10	5.3 E-10	3.5 E-10	2.4 E-10	2.0 E-10
Tl-201	3.04 d	1.000	8.4 E-10	1.000	5.5 E-10	2.9 E-10	1.8 E-10	1.2 E-10	9.5 E-11
Tl-202	12.2 d	1.000	2.9 E-09	1.000	2.1 E-09	1.2 E-09	7.9 E-10	5.4 E-10	4.5 E-10
Tl-204	3.78 a	1.000	1.3 E-08	1.000	8.5 E-09	4.2 E-09	2.5 E-09	1.5 E-09	1.2 E-09
Plumb (*)									
Pb-195m	0.263 h	0.600	2.6 E-10	0.200	1.6 E-10	8.4 E-11	5.2 E-11	3.5 E-11	2.9 E-11
Pb-198	2.40 h	0.600	5.9 E-10	0.200	4.8 E-10	2.7 E-10	1.7 E-10	1.1 E-10	1.0 E-10
Pb-199	1.50 h	0.600	3.5 E-10	0.200	2.6 E-10	1.5 E-10	9.4 E-11	6.3 E-11	5.4 E-11
Pb-200	21.5 h	0.600	2.5 E-09	0.200	2.0 E-09	1.1 E-09	7.0 E-10	4.4 E-10	4.0 E-10
Pb-201	9.40 h	0.600	9.4 E-10	0.200	7.8 E-10	4.3 E-10	2.7 E-10	1.8 E-10	1.6 E-10
Pb-202	3.00 E+05 a	0.600	3.4 E-08	0.200	1.6 E-08	1.3 E-08	1.9 E-08	2.7 E-08	8.8 E-09
Pb-202m	3.62 h	0.600	7.6 E-10	0.200	6.1 E-10	3.5 E-10	2.3 E-10	1.5 E-10	1.3 E-10
Pb-203	2.17 d	0.600	1.6 E-09	0.200	1.3 E-09	6.8 E-10	4.3 E-10	2.7 E-10	2.4 E-10
Pb-205	1.43 E+07 a	0.600	2.1 E-09	0.200	9.9 E-10	6.2 E-10	6.1 E-10	6.5 E-10	2.8 E-10
Pb-209	3.25 h	0.600	5.7 E-10	0.200	3.8 E-10	1.9 E-10	1.1 E-10	6.6 E-11	5.7 E-11
Pb-210	22.3 a	0.600	8.4 E-06	0.200	3.6 E-06	2.2 E-06	1.9 E-06	1.9 E-06	6.9 E-07
Pb-211	0.601 h	0.600	3.1 E-09	0.200	1.4 E-09	7.1 E-10	4.1 E-10	2.7 E-10	1.8 E-10
Pb-212	10.6 h	0.600	1.5 E-07	0.200	6.3 E-08	3.3 E-08	2.0 E-08	1.3 E-08	6.0 E-09
Pb-214	0.447 h	0.600	2.7 E-09	0.200	1.0 E-09	5.2 E-10	3.1 E-10	2.0 E-10	1.4 E-10
Bismut									
Bi-200	0.606 h	0.100	4.2 E-10	0.050	2.7 E-10	1.5 E-10	9.5 E-11	6.4 E-11	5.1 E-11
Bi-201	1.80 h	0.100	1.0 E-09	0.050	6.7 E-10	3.6 E-10	2.2 E-10	1.4 E-10	1.2 E-10
Bi-202	1.67 h	0.100	6.4 E-10	0.050	4.4 E-10	2.5 E-10	1.6 E-10	1.1 E-10	8.9 E-11
Bi-203	11.8 h	0.100	3.5 E-09	0.050	2.5 E-09	1.4 E-09	9.3 E-10	6.0 E-10	4.8 E-10
Bi-205	15.3 d	0.100	6.1 E-09	0.050	4.5 E-09	2.6 E-09	1.7 E-09	1.1 E-09	9.0 E-10
Bi-206	6.24 d	0.100	1.4 E-08	0.050	1.0 E-08	5.7 E-09	3.7 E-09	2.4 E-09	1.9 E-09
Bi-207	38.0 a	0.100	1.0 E-08	0.050	7.1 E-09	3.9 E-09	2.5 E-09	1.6 E-09	1.3 E-09
Bi-210	5.01 d	0.100	1.5 E-08	0.050	9.7 E-09	4.8 E-09	2.9 E-09	1.6 E-09	1.3 E-09
Bi-210m	3.00 E+06 a	0.100	2.1 E-07	0.050	9.1 E-08	4.7 E-08	3.0 E-08	1.9 E-08	1.5 E-08
Bi-212	1.01 h	0.100	3.2 E-09	0.050	1.8 E-09	8.7 E-10	5.0 E-10	3.3 E-10	2.6 E-10
Bi-213	0.761 h	0.100	2.5 E-09	0.050	1.4 E-09	6.7 E-10	3.9 E-10	2.5 E-10	2.0 E-10
Bi-214	0.332 h	0.100	1.4 E-09	0.050	7.4 E-10	3.6 E-10	2.1 E-10	1.4 E-10	1.1 E-10

Poloniu									
Po-203	0.612 h	1.000	2.9 E-10	0.500	2.4 E-10	1.3 E-10	8.5 E-11	5.8 E-11	4.6 E-11
Po-205	1.80 h	1.000	3.5 E-10	0.500	2.8 E-10	1.6 E-10	1.1 E-10	7.2 E-11	5.8 E-11
Po-207	5.83 h	1.000	4.4 E-10	0.500	5.7 E-10	3.2 E-10	2.1 E-10	1.4 E-10	1.1 E-10
Po-210	138 d	1.000	2.6 E-05	0.500	8.8 E-06	4.4 E-06	2.6 E-06	1.6 E-06	1.2 E-06
Astatin									
At-207	1.80 h	1.000	2.5 E-09	1.000	1.6 E-09	8.0 E-10	4.8 E-10	2.9 E-10	2.4 E-10
At-211	7.21 h	1.000	1.2 E-07	1.000	7.8 E-08	3.8 E-08	2.3 E-08	1.3 E-08	1.1 E-08
Franciu									
Fr-222	0.240 h	1.000	6.2 E-09	1.000	3.9 E-09	2.0 E-09	1.3 E-09	8.5 E-10	7.2 E-10
Fr-223	0.363 h	1.000	2.6 E-08	1.000	1.7 E-08	8.3 E-09	5.0 E-09	2.9 E-09	2.4 E-09
Radiu (*)									
Ra-223	11.4 d	0.600	5.3 E-06	0.200	1.1 E-06	5.7 E-07	4.5 E-07	3.7 E-07	1.0 E-07
Ra-224	3.66 d	0.600	2.7 E-06	0.200	6.6 E-07	3.5 E-07	2.6 E-07	2.0 E-07	6.5 E-08
Ra-225	14.8 d	0.600	7.1 E-06	0.200	1.2 E-06	6.1 E-07	5.0 E-07	4.4 E-07	9.9 E-08
Ra-226	1.60 E+03 a	0.600	4.7 E-06	0.200	9.6 E-07	6.2 E-07	8.0 E-07	1.5 E-06	2.8 E-07
Ra-227	0.703 h	0.600	1.1 E-09	0.200	4.3 E-10	2.5 E-10	1.7 E-10	1.3 E-10	8.1 E-11
Ra-228	5.75 a	0.600	3.0 E-05	0.200	5.7 E-06	3.4 E-06	3.9 E-06	5.3 E-06	6.9 E-07
Actiniu									
Ac-224	2.90 h	0.005	1.0 E-08	5.0 E-04	5.2 E-09	2.6 E-09	1.5 E-09	8.8 E-10	7.0 E-10
Ac-225	10.0 d	0.005	4.6 E-07	5.0 E-04	1.8 E-07	9.1 E-08	5.4 E-08	3.0 E-08	2.4 E-08
Ac-226	1.21 d	0.005	1.4 E-07	5.0 E-04	7.6 E-08	3.8 E-08	2.3 E-08	1.3 E-08	1.0 E-08
Ac-227	21.8 a	0.005	3.3 E-05	5.0 E-04	3.1 E-06	2.2 E-06	1.5 E-06	1.2 E-06	1.1 E-06
Ac-228	6.13 h	0.005	7.4 E-09	5.0 E-04	2.8 E-09	1.4 E-09	8.7 E-10	5.3 E-10	4.3 E-10
Toriu									
Th-226	0.515 h	0.005	4.4 E-09	5.0 E-04	2.4 E-09	1.2 E-09	6.7 E-10	4.5 E-10	3.5 E-10
Th-227	18.7 d	0.005	3.0 E-07	5.0 E-04	7.0 E-08	3.6 E-08	2.3 E-08	1.5 E-08	8.8 E-09
Th-228	1.91 a	0.005	3.7 E-06	5.0 E-04	3.7 E-07	2.2 E-07	1.5 E-07	9.4 E-08	7.2 E-08
Th-229	7.34 E+03 a	0.005	1.1 E-05	5.0 E-04	1.0 E-06	7.8 E-07	6.2 E-07	5.3 E-07	4.9 E-07
Th-230	7.70 E+04 a	0.005	4.1 E-06	5.0 E-04	4.1 E-07	3.1 E-07	2.4 E-07	2.2 E-07	2.1 E-07
Th-231	1.06 d	0.005	3.9 E-09	5.0 E-04	2.5 E-09	1.2 E-09	7.4 E-10	4.2 E-10	3.4 E-10
Th-232	1.40 E+10 a	0.005	4.6 E-06	5.0 E-04	4.5 E-07	3.5 E-07	2.9 E-07	2.5 E-07	2.3 E-07
Th-234	24.1 d	0.005	4.0 E-08	5.0 E-04	2.5 E-08	1.3 E-08	7.4 E-09	4.2 E-09	3.4 E-09
Protactiniu									
Pa-227	0.638 h	0.005	5.8 E-09	5.0 E-04	3.2 E-09	1.5 E-09	8.7 E-10	5.8 E-10	4.5 E-10
Pa-228	22.0 h	0.005	1.2 E-08	5.0 E-04	4.8 E-09	2.6 E-09	1.6 E-09	9.7 E-10	7.8 E-10
Pa-230	17.4 d	0.005	2.6 E-08	5.0 E-04	5.7 E-09	3.1 E-09	1.9 E-09	1.1 E-09	9.2 E-10
Pa-231	3.27 E+04 a	0.005	1.3 E-05	5.0 E-04	1.3 E-06	1.1 E-06	9.2 E-07	8.0 E-07	7.1 E-07
Pa-232	1.31 d	0.005	6.3 E-09	5.0 E-04	4.2 E-09	2.2 E-09	1.4 E-09	8.9 E-10	7.2 E-10
Pa-233	27.0 d	0.005	9.7 E-09	5.0 E-04	6.2 E-09	3.2 E-09	1.9 E-09	1.1 E-09	8.7 E-10
Pa-234	6.70 h	0.005	5.0 E-09	5.0 E-04	3.2 E-09	1.7 E-09	1.0 E-09	6.4 E-10	5.1 E-10
Uraniu									
U-230	20.8 d	0.040	7.9 E-07	0.020	3.0 E-07	1.5 E-07	1.0 E-07	6.6 E-08	5.6 E-08
U-231	4.20 d	0.040	3.1 E-09	0.020	2.0 E-09	1.0 E-09	6.1 E-10	3.5 E-10	2.8 E-10
U-232	72.0 a	0.040	2.5 E-06	0.020	8.2 E-07	5.8 E-07	5.7 E-07	6.4 E-07	3.3 E-07
U-233	1.58 E+05 a	0.040	3.8 E-07	0.020	1.4 E-07	9.2 E-08	7.8 E-08	7.8 E-08	5.1 E-08
U-234	2.44 E+05 a	0.040	3.7 E-07	0.020	1.3 E-07	8.8 E-08	7.4 E-08	7.4 E-08	4.9 E-08
U-235	7.04 E+08 a	0.040	3.5 E-07	0.020	1.3 E-07	8.5 E-08	7.1 E-08	7.0 E-08	4.7 E-08
U-236	2.34 E+07 a	0.040	3.5 E-07	0.020	1.3 E-07	8.4 E-08	7.0 E-08	7.0 E-08	4.7 E-08
U-237	6.75 d	0.040	8.3 E-09	0.020	5.4 E-09	2.8 E-09	1.6 E-09	9.5 E-10	7.6 E-10
U-238	4.47 E+09 a	0.040	3.4 E-07	0.020	1.2 E-07	8.0 E-08	6.8 E-08	6.7 E-08	4.5 E-08

U-239	0.392 h	0.040	3.4 E-10	0.020	1.9 E-10	9.3 E-11	5.4 E-11	3.5 E-11	2.7 E-11
U-240	14.1 h	0.040	1.3 E-08	0.020	8.1 E-09	4.1 E-09	2.4 E-09	1.4 E-09	1.1 E-09
Neptuniu									
Np-232	0.245 h	0.005	8.7 E-11	5.0 E-04	5.1 E-11	2.7 E-11	1.7 E-11	1.2 E-11	9.7 E-12
Np-233	0.603 h	0.005	2.1 E-11	5.0 E-04	1.3 E-11	6.6 E-12	4.0 E-12	2.8 E-12	2.2 E-12
Np-234	4.40 d	0.005	6.2 E-09	5.0 E-04	4.4 E-09	2.4 E-09	1.6 E-09	1.0 E-09	8.1 E-10
Np-235	1.08 a	0.005	7.1 E-10	5.0 E-04	4.1 E-10	2.0 E-10	1.2 E-10	6.8 E-11	5.3 E-11
Np-236	1.15 E+05 a	0.005	1.9 E-07	5.0 E-04	2.4 E-08	1.8 E-08	1.8 E-08	1.8 E-08	1.7 E-08
Np-236	22.5 h	0.005	2.5 E-09	5.0 E-04	1.3 E-09	6.6 E-10	4.0 E-10	2.4 E-10	1.9 E-10
Np-237	2.14 E+06 a	0.005	2.0 E-06	5.0 E-04	2.1 E-07	1.4 E-07	1.1 E-07	1.1 E-07	1.1 E-07
Np-238	2.12 d	0.005	9.5 E-09	5.0 E-04	6.2 E-09	3.2 E-09	1.9 E-09	1.1 E-09	9.1 E-10
Np-239	2.36 d	0.005	8.9 E-09	5.0 E-04	5.7 E-09	2.9 E-09	1.7 E-09	1.0 E-09	8.0 E-10
Np-240	1.08 h	0.005	8.7 E-10	5.0 E-04	5.2 E-10	2.6 E-10	1.6 E-10	1.0 E-10	8.2 E-11
Plutoniu									
Pu-234	8.80 h	0.005	2.1 E-09	5.0 E-04	1.1 E-09	5.5 E-10	3.3 E-10	2.0 E-10	1.6 E-10
Pu-235	0.422 h	0.005	2.2 E-11	5.0 E-04	1.3 E-11	6.5 E-12	3.9 E-12	2.7 E-12	2.1 E-12
Pu-236	2.85 a	0.005	2.1 E-06	5.0 E-04	2.2 E-07	1.4 E-07	1.0 E-07	8.5 E-08	8.7 E-08
Pu-237	45.3 d	0.005	1.1 E-09	5.0 E-04	6.9 E-10	3.6 E-10	2.2 E-10	1.3 E-10	1.0 E-10
Pu-238	87.7 a	0.005	4.0 E-06	5.0 E-04	4.0 E-07	3.1 E-07	2.4 E-07	2.2 E-07	2.3 E-07
Pu-239	2.41 E+04 a	0.005	4.2 E-06	5.0 E-04	4.2 E-07	3.3 E-07	2.7 E-07	2.4 E-07	2.5 E-07
Pu-240	6.54 E+03 a	0.005	4.2 E-06	5.0 E-04	4.2 E-07	3.3 E-07	2.7 E-07	2.4 E-07	2.5 E-07
Pu-241	14.4 a	0.005	5.6 E-08	5.0 E-04	5.7 E-09	5.5 E-09	5.1 E-09	4.8 E-09	4.8 E-09
Pu-242	3.76 E+05 a	0.005	4.0 E-06	5.0 E-04	4.0 E-07	3.2 E-07	2.6 E-07	2.3 E-07	2.4 E-07
Pu-243	4.95 h	0.005	1.0 E-09	5.0 E-04	6.2 E-10	3.1 E-10	1.8 E-10	1.1 E-10	8.5 E-11
Pu-244	8.26 E+07 a	0.005	4.0 E-06	5.0 E-04	4.1 E-07	3.2 E-07	2.6 E-07	2.3 E-07	2.4 E-07
Pu-245	10.5 h	0.005	8.0 E-09	5.0 E-04	5.1 E-09	2.6 E-09	1.5 E-09	8.9 E-10	7.2 E-10
Pu-246	10.9 d	0.005	3.6 E-08	5.0 E-04	2.3 E-08	1.2 E-08	7.1 E-09	4.1 E-09	3.3 E-09
Americiu									
Am-237	1.22 h	0.005	1.7 E-10	5.0 E-04	1.0 E-10	5.5 E-11	3.3 E-11	2.2 E-11	1.8 E-11
Am-238	1.63 h	0.005	2.5 E-10	5.0 E-04	1.6 E-10	9.1 E-11	5.9 E-11	4.0 E-11	3.2 E-11
Am-239	11.9 h	0.005	2.6 E-09	5.0 E-04	1.7 E-09	8.4 E-10	5.1 E-10	3.0 E-10	2.4 E-10
Am-240	2.12 d	0.005	4.7 E-09	5.0 E-04	3.3 E-09	1.8 E-09	1.2 E-09	7.3 E-10	5.8 E-10
Am-241	4.32 E+02 a	0.005	3.7 E-06	5.0 E-04	3.7 E-07	2.7 E-07	2.2 E-07	2.0 E-07	2.0 E-07
Am-242	16.0 h	0.005	5.0 E-09	5.0 E-04	2.2 E-09	1.1 E-09	6.4 E-10	3.7 E-10	3.0 E-10
Am-242m	1.52 E+02 a	0.005	3.1 E-06	5.0 E-04	3.0 E-07	2.3 E-07	2.0 E-07	1.9 E-07	1.9 E-07
Am-243	7.38 E+03 a	0.005	3.6 E-06	5.0 E-04	3.7 E-07	2.7 E-07	2.2 E-07	2.0 E-07	2.0 E-07
Am-244	10.1 h	0.005	4.9 E-09	5.0 E-04	3.1 E-09	1.6 E-09	9.6 E-10	5.8 E-10	4.6 E-10
Am-244m	0.433 h	0.005	3.7 E-10	5.0 E-04	2.0 E-10	9.6 E-11	5.5 E-11	3.7 E-11	2.9 E-11
Am-245	2.05 h	0.005	6.8 E-10	5.0 E-04	4.5 E-10	2.2 E-10	1.3 E-10	7.9 E-11	6.2 E-11
Am-246	0.650 h	0.005	6.7 E-10	5.0 E-04	3.8 E-10	1.9 E-10	1.1 E-10	7.3 E-11	5.8 E-11
Am-246m	0.417 h	0.005	3.9 E-10	5.0 E-04	2.2 E-10	1.1 E-10	6.4 E-11	4.4 E-11	3.4 E-11
Curium									
Cm-238	2.40 h	0.005	7.8 E-10	5.0 E-04	4.9 E-10	2.6 E-10	1.6 E-10	1.0 E-10	8.0 E-11
Cm-240	27.0 d	0.005	2.2 E-07	5.0 E-04	4.8 E-08	2.5 E-08	1.5 E-08	9.2 E-09	7.6 E-09
Cm-241	32.8 d	0.005	1.1 E-08	5.0 E-04	5.7 E-09	3.0 E-09	1.9 E-09	1.1 E-09	9.1 E-10
Cm-242	163 d	0.005	5.9 E-07	5.0 E-04	7.6 E-08	3.9 E-08	2.4 E-08	1.5 E-08	1.2 E-08
Cm-243	28.5 a	0.005	3.2 E-06	5.0 E-04	3.3 E-07	2.2 E-07	1.6 E-07	1.4 E-07	1.5 E-07
Cm-244	18.1 a	0.005	2.9 E-06	5.0 E-04	2.9 E-07	1.9 E-07	1.4 E-07	1.2 E-07	1.2 E-07
Cm-245	8.50 E+03 a	0.005	3.7 E-06	5.0 E-04	3.7 E-07	2.8 E-07	2.3 E-07	2.1 E-07	2.1 E-07
Cm-246	4.73 E+03 a	0.005	3.7 E-06	5.0 E-04	3.7 E-07	2.8 E-07	2.2 E-07	2.1 E-07	2.1 E-07
Cm-247	1.56 E+07 a	0.005	3.4 E-06	5.0 E-04	3.5 E-07	2.6 E-07	2.1 E-07	1.9 E-07	1.9 E-07
Cm-248	3.39 E+05 a	0.005	1.4 E-05	5.0 E-04	1.4 E-06	1.0 E-06	8.4 E-07	7.7 E-07	7.7 E-07
Cm-249	1.07 h	0.005	3.9 E-10	5.0 E-04	2.2 E-10	1.1 E-10	6.1 E-11	4.0 E-11	3.1 E-11
Cm-250	6.90 E+03 a	0.005	7.8 E-05	5.0 E-04	8.2 E-06	6.0 E-06	4.9 E-06	4.4 E-06	4.4 E-06

Berkeliu									
Bk-245	4.94 d	0.005	6.1 E-09	5.0 E-04	3.9 E-09	2.0 E-09	1.2 E-09	7.2 E-10	5.7 E-10
Bk-246	1.83 d	0.005	3.7 E-09	5.0 E-04	2.6 E-09	1.4 E-09	9.4 E-10	6.0 E-10	4.8 E-10
Bk-247	1.38 E+03 a	0.005	8.9 E-06	5.0 E-04	8.6 E-07	6.3 E-07	4.6 E-07	3.8 E-07	3.5 E-07
Bk-249	320 d	0.005	2.2 E-08	5.0 E-04	2.9 E-09	1.9 E-09	1.4 E-09	1.1 E-09	9.7 E-10
Bk-250	3.22 h	0.005	1.5 E-09	5.0 E-04	8.5 E-10	4.4 E-10	2.7 E-10	1.7 E-10	1.4 E-10
Californiu									
Cf-244	0.323 h	0.005	9.8 E-10	5.0 E-04	4.8 E-10	2.4 E-10	1.3 E-10	8.9 E-11	7.0 E-11
Cf-246	1.49 d	0.005	5.0 E-08	5.0 E-04	2.4 E-08	1.2 E-08	7.3 E-09	4.1 E-09	3.3 E-09
Cf-248	334 d	0.005	1.5 E-06	5.0 E-04	1.6 E-07	9.9 E-08	6.0 E-08	3.3 E-08	2.8 E-08
Cf-249	3.50 E+02 a	0.005	9.0 E-06	5.0 E-04	8.7 E-07	6.4 E-07	4.7 E-07	3.8 E-07	3.5 E-07
Cf-250	13.1 a	0.005	5.7 E-06	5.0 E-04	5.5 E-07	3.7 E-07	2.3 E-07	1.7 E-07	1.6 E-07
Cf-251	8.98 E+02 a	0.005	9.1 E-06	5.0 E-04	8.8 E-07	6.5 E-07	4.7 E-07	3.9 E-07	3.6 E-07
Cf-252	2.64 a	0.005	5.0 E-06	5.0 E-04	5.1 E-07	3.2 E-07	1.9 E-07	1.0 E-07	9.0 E-08
Cf-253	17.8 d	0.005	1.0 E-07	5.0 E-04	1.1 E-08	6.0 E-09	3.7 E-09	1.8 E-09	1.4 E-09
Cf-254	60.5 d	0.005	1.1 E-05	5.0 E-04	2.6 E-06	1.4 E-06	8.4 E-07	5.0 E-07	4.0 E-07
Einsteiniu									
Es-250	2.10 h	0.005	2.3 E-10	5.0 E-04	9.9 E-11	5.7 E-11	3.7 E-11	2.6 E-11	2.1 E-11
Es-251	1.38 d	0.005	1.9 E-09	5.0 E-04	1.2 E-09	6.1 E-10	3.7 E-10	2.2 E-10	1.7 E-10
Es-253	20.5 d	0.005	1.7 E-07	5.0 E-04	4.5 E-08	2.3 E-08	1.4 E-08	7.6 E-09	6.1 E-09
Es-254	276 d	0.005	1.4 E-06	5.0 E-04	1.6 E-07	9.8 E-08	6.0 E-08	3.3 E-08	2.8 E-08
Es-254m	1.64 d	0.005	5.7 E-08	5.0 E-04	3.0 E-08	1.5 E-08	9.1 E-09	5.2 E-09	4.2 E-09
Fermiu									
Fm-252	22.7 h	0.005	3.8 E-08	5.0 E-04	2.0 E-08	9.9 E-09	5.9 E-09	3.3 E-09	2.7 E-09
Fm-253	3.00 d	0.005	2.5 E-08	5.0 E-04	6.7 E-09	3.4 E-09	2.1 E-09	1.1 E-09	9.1 E-10
Fm-254	3.24 h	0.005	5.6 E-09	5.0 E-04	3.2 E-09	1.6 E-09	9.3 E-10	5.6 E-10	4.4 E-10
Fm-255	20.1 h	0.005	3.3 E-08	5.0 E-04	1.9 E-08	9.5 E-09	5.6 E-09	3.2 E-09	2.5 E-09
Fm-257	101 d	0.005	9.8 E-07	5.0 E-04	1.1 E-07	6.5 E-08	4.0 E-08	1.9 E-08	1.5 E-08
Mendeleviu									
Md-257	5.20 h	0.005	3.1 E-09	5.0 E-04	8.8 E-10	4.5 E-10	2.7 E-10	1.5 E-10	1.2 E-10
Md-258	55.0 d	0.005	6.3 E-07	5.0 E-04	8.9 E-08	5.0 E-08	3.0 E-08	1.6 E-08	1.3 E-08

Notă (*): Valorile lui f_1 pentru grupa de vârste de la 1 an la 15 ani pentru nucleele notate cu "*" sunt următoarele:

pentru calciu este 0,4;
 pentru fier este 0,2;
 pentru cobalt este 0,3;
 pentru stonțiu este 0,4;
 pentru bariu este 0,3;
 pentru plumb este 0,4;
 pentru radiu este 0,3.

TABELUL 4-B

Doza efectivă angajată pe unitatea de încorporare prin inhalare (Sv Bq⁻¹) pentru persoane din populație

Nucleu	Timp de înjumătățire	Tip	Vârsta		f _i	Vârsta	Vârsta	Vârsta	Vârsta	Vârsta
			g ≤ 1 a		pentru	1-2 a	2-7 a	7-12 a	12-17 a	>17 a
			f _i	h(g)	g > 1 a	h(g)	h(g)	h(g)	h(g)	h(g)
 Hidrogen 										
Apă tritiată	12.3 a	F	1.000	2.6 E-11	1.000	2.0 E-11	1.1 E-11	8.2 E-12	5.9 E-12	6.2 E-12
		M	0.200	3.4 E-10	0.100	2.7 E-10	1.4 E-10	8.2 E-11	5.3 E-11	4.5 E-11
		S	0.020	1.2 E-09	0.010	1.0 E-09	6.3 E-10	3.8 E-10	2.8 E-10	2.6 E-10
 Beriliu 										
Be-7	53.3 d	M	0.020	2.5 E-10	0.005	2.1 E-10	1.2 E-10	8.3 E-11	6.2 E-11	5.0 E-11
		S	0.020	2.8 E-10	0.005	2.4 E-10	1.4 E-10	9.6 E-11	6.8 E-11	5.5 E-11
Be-10	1.60 E+06 a	M	0.020	4.1 E-08	0.005	3.4 E-08	2.0 E-08	1.3 E-08	1.1 E-08	9.6 E-09
		S	0.020	9.9 E-08	0.005	9.1 E-08	6.1 E-08	4.2 E-08	3.7 E-08	3.5 E-08
 Carbon 										
C-11	0.340 h	F	1.000	1.0 E-10	1.000	7.0 E-11	3.2 E-11	2.1 E-11	1.3 E-11	1.1 E-11
		M	0.200	1.5 E-10	0.100	1.1 E-10	4.9 E-11	3.2 E-11	2.1 E-11	1.8 E-11
		S	0.020	1.6 E-10	0.010	1.1 E-10	5.1 E-11	3.3 E-11	2.2 E-11	1.8 E-11
C-14	5.73 E+03 a	F	1.000	6.1 E-10	1.000	6.7 E-10	3.6 E-10	2.9 E-10	1.9 E-10	2.0 E-10
		M	0.200	8.3 E-09	0.100	6.6 E-09	4.0 E-09	2.8 E-09	2.5 E-09	2.0 E-09
		S	0.020	1.9 E-08	0.010	1.7 E-08	1.1 E-08	7.4 E-09	6.4 E-09	5.8 E-09
 Fluor 										
F-18	1.83 h	F	1.000	2.6 E-10	1.000	1.9 E-10	9.1 E-11	5.6 E-11	3.4 E-11	2.8 E-11
		M	1.000	4.1 E-10	1.000	2.9 E-10	1.5 E-10	9.7 E-11	6.9 E-11	5.6 E-11
		S	1.000	4.2 E-10	1.000	3.1 E-10	1.5 E-10	1.0 E-10	7.3 E-11	5.9 E-11
 Sodiu 										
Na-22	2.60 a	F	1.000	9.7 E-09	1.000	7.3 E-09	3.8 E-09	2.4 E-09	1.5 E-09	1.3 E-09
Na-24	15.0 h	F	1.000	2.3 E-09	1.000	1.8 E-09	9.3 E-10	5.7 E-10	3.4 E-10	2.7 E-10
 Magneziu 										
Mg-28	20.9 h	F	1.000	5.3 E-09	0.500	4.7 E-09	2.2 E-09	1.3 E-09	7.3 E-10	6.0 E-10
		M	1.000	7.3 E-09	0.500	7.2 E-09	3.5 E-09	2.3 E-09	1.5 E-09	1.2 E-09
 Aluminiu 										
Al-26	7.16 E+05 a	F	0.020	8.1 E-08	0.010	6.2 E-08	3.2 E-08	2.0 E-08	1.3 E-08	1.1 E-08
		M	0.020	8.8 E-08	0.010	7.4 E-08	4.4 E-08	2.9 E-08	2.2 E-08	2.0 E-08
 Siliciu 										
Si-31	2.62 h	F	0.020	3.6 E-10	0.010	2.3 E-10	9.5 E-11	5.9 E-11	3.2 E-11	2.7 E-11
		M	0.020	6.9 E-10	0.010	4.4 E-10	2.0 E-10	1.3 E-10	8.9 E-11	7.4 E-11
		S	0.020	7.2 E-10	0.010	4.7 E-10	2.2 E-10	1.4 E-10	9.5 E-11	7.9 E-11
Si-32	4.50 E+02 a	F	0.020	3.0 E-08	0.010	2.3 E-08	1.1 E-08	6.4 E-09	3.8 E-09	3.2 E-09
		M	0.020	7.1 E-08	0.010	6.0 E-08	3.6 E-08	2.4 E-08	1.9 E-08	1.7 E-08
		S	0.020	2.8 E-07	0.010	2.7 E-07	1.9 E-07	1.3 E-07	1.1 E-07	1.1 E-07
 Fosfor 										
P-32	14.3 d	F	1.000	1.2 E-08	0.800	7.5 E-09	3.2 E-09	1.8 E-09	9.8 E-10	7.7 E-10
		M	1.000	2.2 E-08	0.800	1.5 E-08	8.0 E-09	5.3 E-09	4.0 E-09	3.4 E-09
P-33	25.4 d	F	1.000	1.2 E-09	0.800	7.8 E-10	3.0 E-10	2.0 E-10	1.1 E-10	9.2 E-11
		M	1.000	6.1 E-09	0.800	4.6 E-09	2.8 E-09	2.1 E-09	1.9 E-09	1.5 E-09
 Sulf 										
S-35	87.4 d	F	1.000	5.5 E-10	0.800	3.9 E-10	1.8 E-10	1.1 E-10	6.0 E-11	5.1 E-11

(anorganic)		M	0.200	5.9 E-09	0.100	4.5 E-09	2.8 E-09	2.0 E-09	1.8 E-09	1.4 E-09
		S	0.020	7.7 E-09	0.010	6.0 E-09	3.6 E-09	2.6 E-09	2.3 E-09	1.9 E-09
Clor										
Cl-36	3.01 E+05 a	F	1.000	3.9 E-09	1.000	2.6 E-09	1.1 E-09	7.1 E-10	3.9 E-10	3.3 E-10
		M	1.000	3.1 E-08	1.000	2.6 E-08	1.5 E-08	1.0 E-08	8.8 E-09	7.3 E-09
Cl-38	0.620 h	F	1.000	2.9 E-10	1.000	1.9 E-10	8.4 E-11	5.1 E-11	3.0 E-11	2.5 E-11
		M	1.000	4.7 E-10	1.000	3.0 E-10	1.4 E-10	8.5 E-11	5.4 E-11	4.5 E-11
Cl-39	0.927 h	F	1.000	2.7 E-10	1.000	1.8 E-10	8.4 E-11	5.1 E-11	3.1 E-11	2.5 E-11
		M	1.000	4.3 E-10	1.000	2.8 E-10	1.3 E-10	8.5 E-11	5.6 E-11	4.6 E-11
Potasiu										
K-40	1.28 E+09 a	F	1.000	2.4 E-08	1.000	1.7 E-08	7.5 E-09	4.5 E-09	2.5 E-09	2.1 E-09
K-42	12.4 h	F	1.000	1.6 E-09	1.000	1.0 E-09	4.4 E-10	2.6 E-10	1.5 E-10	1.2 E-10
K-43	22.6 h	F	1.000	1.3 E-09	1.000	9.7 E-10	4.7 E-10	2.9 E-10	1.7 E-10	1.4 E-10
K-44	0.369 h	F	1.000	2.2 E-10	1.000	1.4 E-10	6.5 E-11	4.0 E-11	2.4 E-11	2.0 E-11
K-45	0.333 h	F	1.000	1.5 E-10	1.000	1.0 E-10	4.8 E-11	3.0 E-11	1.8 E-11	1.5 E-11
Calciu (*)										
Ca-41	1.40 E+05 a	F	0.600	6.7 E-10	0.300	3.8 E-10	2.6 E-10	3.3 E-10	3.3 E-10	1.7 E-10
		M	0.200	4.2 E-10	0.100	2.6 E-10	1.7 E-10	1.7 E-10	1.6 E-10	9.5 E-11
		S	0.020	6.7 E-10	0.010	6.0 E-10	3.8 E-10	2.4 E-10	1.9 E-10	1.8 E-10
Ca-45	163 d	F	0.600	5.7 E-09	0.300	3.0 E-09	1.4 E-09	1.0 E-09	7.6 E-10	4.6 E-10
		M	0.200	1.2 E-08	0.100	8.8 E-09	5.3 E-09	3.9 E-09	3.5 E-09	2.7 E-09
		S	0.020	1.5 E-08	0.010	1.2 E-08	7.2 E-09	5.1 E-09	4.6 E-09	3.7 E-09
Ca-47	4.53 d	F	0.600	4.9 E-09	0.300	3.6 E-09	1.7 E-09	1.1 E-09	6.1 E-10	5.5 E-10
		M	0.200	1.0 E-08	0.100	7.7 E-09	4.2 E-09	2.9 E-09	2.4 E-09	1.9 E-09
		S	0.020	1.2 E-08	0.010	8.5 E-09	4.6 E-09	3.3 E-09	2.6 E-09	2.1 E-09
Scandiu										
Sc-43	3.89 h	S	0.001	9.3 E-10	1.0 E-04	6.7 E-10	3.3 E-10	2.2 E-10	1.4 E-10	1.1 E-10
Sc-44	3.93 h	S	0.001	1.6 E-09	1.0 E-04	1.2 E-09	5.6 E-10	3.6 E-10	2.3 E-10	1.8 E-10
Sc-44m	2.44 d	S	0.001	1.1 E-08	1.0 E-04	8.4 E-09	4.2 E-09	2.8 E-09	1.7 E-09	1.4 E-09
Sc-46	83.8 d	S	0.001	2.8 E-08	1.0 E-04	2.3 E-08	1.4 E-08	9.8 E-09	8.4 E-09	6.8 E-09
Sc-47	3.35 d	S	0.001	4.0 E-09	1.0 E-04	2.8 E-09	1.5 E-09	1.1 E-09	9.2 E-10	7.3 E-10
Sc-48	1.82 d	S	0.001	7.8 E-09	1.0 E-04	5.9 E-09	3.1 E-09	2.0 E-09	1.4 E-09	1.1 E-09
Sc-49	0.956 h	S	0.001	3.9 E-10	1.0 E-04	2.4 E-10	1.1 E-10	7.1 E-11	4.7 E-11	4.0 E-11
Titan										
Ti-44	47.3 a	F	0.020	3.1 E-07	0.010	2.6 E-07	1.5 E-07	9.6 E-08	6.6 E-08	6.1 E-08
		M	0.020	1.7 E-07	0.010	1.5 E-07	9.2 E-08	5.9 E-08	4.6 E-08	4.2 E-08
		S	0.020	3.2 E-07	0.010	3.1 E-07	2.1 E-07	1.5 E-07	1.3 E-07	1.2 E-07
Ti-45	3.08 h	F	0.020	4.4 E-10	0.010	3.2 E-10	1.5 E-10	9.1 E-11	5.1 E-11	4.2 E-11
		M	0.020	7.4 E-10	0.010	5.2 E-10	2.5 E-10	1.6 E-10	1.1 E-10	8.8 E-11
		S	0.020	7.7 E-10	0.010	5.5 E-10	2.7 E-10	1.7 E-10	1.1 E-10	9.3 E-11
Vanadiu										
V-47	0.543 h	F	0.020	1.8 E-10	0.010	1.2 E-10	5.6 E-11	3.5 E-11	2.1 E-11	1.7 E-11
		M	0.020	2.8 E-10	0.010	1.9 E-10	8.6 E-11	5.5 E-11	3.5 E-11	2.9 E-11
V-48	16.2 d	F	0.020	8.4 E-09	0.010	6.4 E-09	3.3 E-09	2.1 E-09	1.3 E-09	1.1 E-09
		M	0.020	1.4 E-08	0.010	1.1 E-08	6.3 E-09	4.3 E-09	2.9 E-09	2.4 E-09
V-49	330 d	F	0.020	2.0 E-10	0.010	1.6 E-10	7.7 E-11	4.3 E-11	2.5 E-11	2.1 E-11
		M	0.020	2.8 E-10	0.010	2.1 E-10	1.1 E-10	6.3 E-11	4.0 E-11	3.4 E-11
Crom										
Cr-48	23.0 h	F	0.200	7.6 E-10	0.100	6.0 E-10	3.1 E-10	2.0 E-10	1.2 E-10	9.9 E-11
		M	0.200	1.1 E-09	0.100	9.1 E-10	5.1 E-10	3.4 E-10	2.5 E-10	2.0 E-10
		S	0.200	1.2 E-09	0.100	9.8 E-10	5.5 E-10	3.7 E-10	2.8 E-10	2.2 E-10

Cr-49	0.702 h	F	0.200	1.9 E-10	0.100	1.3 E-10	6.0 E-11	3.7 E-11	2.2 E-11	1.9 E-11
		M	0.200	3.0 E-10	0.100	2.0 E-10	9.5 E-11	6.1 E-11	4.0 E-11	3.3 E-11
		S	0.200	3.1 E-10	0.100	2.1 E-10	9.9 E-11	6.4 E-11	4.2 E-11	3.5 E-11
Cr-51	27.7 d	F	0.200	1.7 E-10	0.100	1.3 E-10	6.3 E-11	4.0 E-11	2.4 E-11	2.0 E-11
		M	0.200	2.6 E-10	0.100	1.9 E-10	1.0 E-10	6.4 E-11	3.9 E-11	3.2 E-11
		S	0.200	2.6 E-10	0.100	2.1 E-10	1.0 E-10	6.6 E-11	4.5 E-11	3.7 E-11
Mangan										
Mn-51	0.770 h	F	0.200	2.5 E-10	0.100	1.7 E-10	7.5 E-11	4.6 E-11	2.7 E-11	2.3 E-11
		M	0.200	4.0 E-10	0.100	2.7 E-10	1.2 E-10	7.8 E-11	5.0 E-11	4.1 E-11
Mn-52	5.59 d	F	0.200	7.0 E-09	0.100	5.5 E-09	2.9 E-09	1.8 E-09	1.1 E-09	9.4 E-10
		M	0.200	8.6 E-09	0.100	6.8 E-09	3.7 E-09	2.4 E-09	1.7 E-09	1.4 E-09
Mn-52m	0.352 h	F	0.200	1.9 E-10	0.100	1.3 E-10	6.1 E-11	3.8 E-11	2.2 E-11	1.9 E-11
		M	0.200	2.8 E-10	0.100	1.9 E-10	8.7 E-11	5.5 E-11	3.4 E-11	2.9 E-11
Mn-53	3.70 E+06 a	F	0.200	3.2 E-10	0.100	2.2 E-10	1.1 E-10	6.0 E-11	3.4 E-11	2.9 E-11
		M	0.200	4.6 E-10	0.100	3.4 E-10	1.7 E-10	1.0 E-10	6.4 E-11	5.4 E-11
Mn-54	312 d	F	0.200	5.2 E-09	0.100	4.1 E-09	2.2 E-09	1.5 E-09	9.9 E-10	8.5 E-10
		M	0.200	7.5 E-09	0.100	6.2 E-09	3.8 E-09	2.4 E-09	1.9 E-09	1.5 E-09
Mn-56	2.58 h	F	0.200	6.9 E-10	0.100	4.9 E-10	2.3 E-10	1.4 E-10	7.8 E-11	6.4 E-11
		M	0.200	1.1 E-09	0.100	7.8 E-10	3.7 E-10	2.4 E-10	1.5 E-10	1.2 E-10
Fier (*)										
Fe-52	8.28 h	F	0.600	5.2 E-09	0.100	3.6 E-09	1.5 E-09	8.9 E-10	4.9 E-10	3.9 E-10
		M	0.200	5.8 E-09	0.100	4.1 E-09	1.9 E-09	1.2 E-09	7.4 E-10	6.0 E-10
		S	0.020	6.0 E-09	0.010	4.2 E-09	2.0 E-09	1.3 E-09	7.7 E-10	6.3 E-10
Fe-55	2.70 a	F	0.600	4.2 E-09	0.100	3.2 E-09	2.2 E-09	1.4 E-09	9.4 E-10	7.7 E-10
		M	0.200	1.9 E-09	0.100	1.4 E-09	9.9 E-10	6.2 E-10	4.4 E-10	3.8 E-10
		S	0.020	1.0 E-09	0.010	8.5 E-10	5.0 E-10	2.9 E-10	2.0 E-10	1.8 E-10
Fe-59	44.5 d	F	0.600	2.1 E-08	0.100	1.3 E-08	7.1 E-09	4.2 E-09	2.6 E-09	2.2 E-09
		M	0.200	1.8 E-08	0.100	1.3 E-08	7.9 E-09	5.5 E-09	4.6 E-09	3.7 E-09
		S	0.020	1.7 E-08	0.010	1.3 E-08	8.1 E-09	5.8 E-09	5.1 E-09	4.0 E-09
Fe-60	1.00 E+05 a	F	0.600	4.4 E-07	0.100	3.9 E-07	3.5 E-07	3.2 E-07	2.9 E-07	2.8 E-07
		M	0.200	2.0 E-07	0.100	1.7 E-07	1.6 E-07	1.4 E-07	1.4 E-07	1.4 E-07
		S	0.020	9.3 E-08	0.010	8.8 E-08	6.7 E-08	5.2 E-08	4.9 E-08	4.9 E-08
Cobalt (*)										
Co-55	17.5 h	F	0.600	2.2 E-09	0.100	1.8 E-09	9.0 E-10	5.5 E-10	3.1 E-10	2.7 E-10
		M	0.200	4.1 E-09	0.100	3.1 E-09	1.5 E-09	9.8 E-10	6.1 E-10	5.0 E-10
		S	0.020	4.6 E-09	0.010	3.3 E-09	1.6 E-09	1.1 E-09	6.6 E-10	5.3 E-10
Co-56	78.7 d	F	0.600	1.4 E-08	0.100	1.0 E-08	5.5 E-09	3.5 E-09	2.2 E-09	1.8 E-09
		M	0.200	2.5 E-08	0.100	2.1 E-08	1.1 E-08	7.4 E-09	5.8 E-09	4.8 E-09
		S	0.020	2.9 E-08	0.010	2.5 E-08	1.5 E-08	1.0 E-08	8.0 E-09	6.7 E-09
Co-57	271 d	F	0.600	1.5 E-09	0.100	1.1 E-09	5.6 E-10	3.7 E-10	2.3 E-10	1.9 E-10
		M	0.200	2.8 E-09	0.100	2.2 E-09	1.3 E-09	8.5 E-10	6.7 E-10	5.5 E-10
		S	0.020	4.4 E-09	0.010	3.7 E-09	2.3 E-09	1.5 E-09	1.2 E-09	1.0 E-09
Co-58	70.8 d	F	0.600	4.0 E-09	0.100	3.0 E-09	1.6 E-09	1.0 E-09	6.4 E-10	5.3 E-10
		M	0.200	7.3 E-09	0.100	6.5 E-09	3.5 E-09	2.4 E-09	2.0 E-09	1.6 E-09
		S	0.020	9.0 E-09	0.010	7.5 E-09	4.5 E-09	3.1 E-09	2.6 E-09	2.1 E-09
Co-58m	9.15 h	F	0.600	4.8 E-11	0.100	3.6 E-11	1.7 E-11	1.1 E-11	5.9 E-12	5.2 E-12
		M	0.200	1.1 E-10	0.100	7.6 E-11	3.8 E-11	2.4 E-11	1.6 E-11	1.3 E-11
		S	0.020	1.3 E-10	0.010	9.0 E-11	4.5 E-11	3.0 E-11	2.0 E-11	1.7 E-11
Co-60	5.27 a	F	0.600	3.0 E-08	0.100	2.3 E-08	1.4 E-08	8.9 E-09	6.1 E-09	5.2 E-09
		M	0.200	4.2 E-08	0.100	3.4 E-08	2.1 E-08	1.5 E-08	1.2 E-08	1.0 E-08
		S	0.020	9.2 E-08	0.010	8.6 E-08	5.9 E-08	4.0 E-08	3.4 E-08	3.1 E-08
Co-60m	0.174 h	F	0.600	4.4 E-12	0.100	2.8 E-12	1.5 E-12	1.0 E-12	8.3 E-13	6.9 E-13
		M	0.200	7.1 E-12	0.100	4.7 E-12	2.7 E-12	1.8 E-12	1.5 E-12	1.2 E-12

		S	0.020	7.6 E-12	0.010	5.1 E-12	2.9 E-12	2.0 E-12	1.7 E-12	1.4 E-12
Co-61	1.65 h	F	0.600	2.1 E-10	0.100	1.4 E-10	6.0 E-11	3.8 E-11	2.2 E-11	1.9 E-11
		M	0.200	4.0 E-10	0.100	2.7 E-10	1.2 E-10	8.2 E-11	5.7 E-11	4.7 E-11
		S	0.020	4.3 E-10	0.010	2.8 E-10	1.3 E-10	8.8 E-11	6.1 E-11	5.1 E-11
Co-62m	0.232 h	F	0.600	1.4 E-10	0.100	9.5 E-11	4.5 E-11	2.8 E-11	1.7 E-11	1.4 E-11
		M	0.200	1.9 E-10	0.100	1.3 E-10	6.1 E-11	3.8 E-11	2.4 E-11	2.0 E-11
		S	0.020	2.0 E-10	0.010	1.3 E-10	6.3 E-11	4.0 E-11	2.5 E-11	2.1 E-11

Nichel

Ni-56	6.10 d	F	0.100	3.3 E-09	0.050	2.8 E-09	1.5 E-09	9.3 E-10	5.8 E-10	4.9 E-10
		M	0.100	4.9 E-09	0.050	4.1 E-09	2.3 E-09	1.5 E-09	1.1 E-09	8.7 E-10
		S	0.020	5.5 E-09	0.010	4.6 E-09	2.7 E-09	1.8 E-09	1.3 E-09	1.0 E-09
Ni-57	1.50 d	F	0.100	2.2 E-09	0.050	1.8 E-09	8.9 E-10	5.5 E-10	3.1 E-10	2.5 E-10
		M	0.100	3.6 E-09	0.050	2.8 E-09	1.5 E-09	9.5 E-10	6.2 E-10	5.0 E-10
		S	0.020	3.9 E-09	0.010	3.0 E-09	1.5 E-09	1.0 E-09	6.6 E-10	5.3 E-10
Ni-59	7.50 E+04 a	F	0.100	9.6 E-10	0.050	8.1 E-10	4.5 E-10	2.8 E-10	1.9 E-10	1.8 E-10
		M	0.100	7.9 E-10	0.050	6.2 E-10	3.4 E-10	2.1 E-10	1.4 E-10	1.3 E-10
		S	0.020	1.7 E-09	0.010	1.5 E-09	9.5 E-10	5.9 E-10	4.6 E-10	4.4 E-10
Ni-63	96.0 a	F	0.100	2.3 E-09	0.050	2.0 E-09	1.1 E-09	6.7 E-10	4.6 E-10	4.4 E-10
		M	0.100	2.5 E-09	0.050	1.9 E-09	1.1 E-09	7.0 E-10	5.3 E-10	4.8 E-10
		S	0.020	4.8 E-09	0.010	4.3 E-09	2.7 E-09	1.7 E-09	1.3 E-09	1.3 E-09
Ni-65	2.52 h	F	0.100	4.4 E-10	0.050	3.0 E-10	1.4 E-10	8.5 E-11	4.9 E-11	4.1 E-11
		M	0.100	7.7 E-10	0.050	5.2 E-10	2.4 E-10	1.6 E-10	1.0 E-10	8.5 E-11
		S	0.020	8.1 E-10	0.010	5.5 E-10	2.6 E-10	1.7 E-10	1.1 E-10	9.0 E-11
Ni-66	2.27 d	F	0.100	5.7 E-09	0.050	3.8 E-09	1.6 E-09	1.0 E-09	5.1 E-10	4.2 E-10
		M	0.100	1.3 E-08	0.050	9.4 E-09	4.5 E-09	2.9 E-09	2.0 E-09	1.6 E-09
		S	0.020	1.5 E-08	0.010	1.0 E-08	5.0 E-09	3.2 E-09	2.2 E-09	1.8 E-09

Cupru

Cu-60	0.387 h	F	1.000	2.1 E-10	0.500	1.6 E-10	7.5 E-11	4.6 E-11	2.8 E-11	2.3 E-11
		M	1.000	3.0 E-10	0.500	2.2 E-10	1.0 E-10	6.5 E-11	4.0 E-11	3.3 E-11
		S	1.000	3.1 E-10	0.500	2.2 E-10	1.1 E-10	6.7 E-11	4.2 E-11	3.4 E-11
Cu-61	3.41 h	F	1.000	3.1 E-10	0.500	2.7 E-10	1.3 E-10	7.9 E-11	4.5 E-11	3.7 E-11
		M	1.000	4.9 E-10	0.500	4.4 E-10	2.1 E-10	1.4 E-10	9.1 E-11	7.4 E-11
		S	1.000	5.1 E-10	0.500	4.5 E-10	2.2 E-10	1.4 E-10	9.6 E-11	7.8 E-11
Cu-64	12.7 h	F	1.000	2.8 E-10	0.500	2.7 E-10	1.2 E-10	7.6 E-11	4.2 E-11	3.5 E-11
		M	1.000	5.5 E-10	0.500	5.4 E-10	2.7 E-10	1.9 E-10	1.4 E-10	1.1 E-10
		S	1.000	5.8 E-10	0.500	5.7 E-10	2.9 E-10	2.0 E-10	1.3 E-10	1.2 E-10
Cu-67	2.58 d	F	1.000	9.5 E-10	0.500	8.0 E-10	3.5 E-10	2.2 E-10	1.2 E-10	1.0 E-10
		M	1.000	2.3 E-09	0.500	2.0 E-09	1.1 E-09	8.1 E-10	6.9 E-10	5.5 E-10
		S	1.000	2.5 E-09	0.500	2.1 E-09	1.2 E-09	8.9 E-10	7.7 E-10	6.1 E-10

Zinc

Zn-62	9.26 h	F	1.000	1.7 E-09	0.500	1.7 E-09	7.7 E-10	4.6 E-10	2.5 E-10	2.0 E-10
		M	0.200	4.5 E-09	0.100	3.5 E-09	1.6 E-09	1.0 E-09	6.0 E-10	5.0 E-10
		S	0.020	5.1 E-09	0.010	3.4 E-09	1.8 E-09	1.1 E-09	6.6 E-10	5.5 E-10
Zn-63	0.635 h	F	1.000	2.1 E-10	0.500	1.4 E-10	6.5 E-11	4.0 E-11	2.4 E-11	2.0 E-11
		M	0.200	3.4 E-10	0.100	2.3 E-10	1.0 E-10	6.6 E-11	4.2 E-11	3.5 E-11
		S	0.020	3.6 E-10	0.010	2.4 E-10	1.1 E-10	6.9 E-11	4.4 E-11	3.7 E-11
Zn-65	244 d	F	1.000	1.5 E-08	0.500	1.0 E-08	5.7 E-09	3.8 E-09	2.5 E-09	2.2 E-09
		M	0.200	8.5 E-09	0.100	6.5 E-09	3.7 E-09	2.4 E-09	1.9 E-09	1.6 E-09
		S	0.020	7.6 E-09	0.010	6.7 E-09	4.4 E-09	2.9 E-09	2.4 E-09	2.0 E-09
Zn-69	0.950 h	F	1.000	1.1 E-10	0.500	7.4 E-11	3.2 E-11	2.1 E-11	1.2 E-11	1.1 E-11
		M	0.200	2.2 E-10	0.100	1.4 E-10	6.5 E-11	4.4 E-11	3.1 E-11	2.6 E-11
		S	0.020	2.3 E-10	0.010	1.5 E-10	6.9 E-11	4.7 E-11	3.4 E-11	2.8 E-11

Zn-69m	13.8 h	F	1.000	6.6 E-10	0.500	6.7 E-10	3.0 E-10	1.8 E-10	9.9 E-11	8.2 E-11
		M	0.200	2.1 E-09	0.100	1.5 E-09	7.5 E-10	5.0 E-10	3.0 E-10	2.4 E-10
		S	0.020	2.2 E-09	0.010	1.7 E-09	8.2 E-10	5.4 E-10	3.3 E-10	2.7 E-10
Zn-71m	3.92 h	F	1.000	6.2 E-10	0.500	5.5 E-10	2.6 E-10	1.6 E-10	9.1 E-11	7.4 E-11
		M	0.200	1.3 E-09	0.100	9.4 E-10	4.6 E-10	2.9 E-10	1.9 E-10	1.5 E-10
		S	0.020	1.4 E-09	0.010	1.0 E-09	4.9 E-10	3.1 E-10	2.0 E-10	1.6 E-10
Zn-72	1.94 d	F	1.000	4.3 E-09	0.500	3.5 E-09	1.7 E-09	1.0 E-09	5.9 E-10	4.9 E-10
		M	0.200	8.8 E-09	0.100	6.5 E-09	3.4 E-09	2.3 E-09	1.5 E-09	1.2 E-09
		S	0.020	9.7 E-09	0.010	7.0 E-09	3.6 E-09	2.4 E-09	1.6 E-09	1.3 E-09
Galiu										
Ga-65	0.253 h	F	0.010	1.1 E-10	0.001	7.3 E-11	3.4 E-11	2.1 E-11	1.3 E-11	1.1 E-11
		M	0.010	1.6 E-10	0.001	1.1 E-10	4.8 E-11	3.1 E-11	2.0 E-11	1.7 E-11
Ga-66	9.40 h	F	0.010	2.8 E-09	0.001	2.0 E-09	9.2 E-10	5.7 E-10	3.0 E-10	2.5 E-10
		M	0.010	4.5 E-09	0.001	3.1 E-09	1.5 E-09	9.2 E-10	5.3 E-10	4.4 E-10
Ga-67	3.26 d	F	0.010	6.4 E-10	0.001	4.6 E-10	2.2 E-10	1.4 E-10	7.7 E-11	6.4 E-11
		M	0.010	1.4 E-09	0.001	1.0 E-09	5.0 E-10	3.6 E-10	3.0 E-10	2.4 E-10
Ga-68	1.13 h	F	0.010	2.9 E-10	0.001	1.9 E-10	8.8 E-11	5.4 E-11	3.1 E-11	2.6 E-11
		M	0.010	4.6 E-10	0.001	3.1 E-10	1.4 E-10	9.2 E-11	5.9 E-11	4.9 E-11
Ga-70	0.353 h	F	0.010	9.5 E-11	0.001	6.0 E-11	2.6 E-11	1.6 E-11	1.0 E-11	8.8 E-12
		M	0.010	1.5 E-10	0.001	9.6 E-11	4.3 E-11	2.8 E-11	1.8 E-11	1.6 E-11
Ga-72	14.1 h	F	0.010	2.9 E-09	0.001	2.2 E-09	1.0 E-09	6.4 E-10	3.6 E-10	2.9 E-10
		M	0.010	4.5 E-09	0.001	3.3 E-09	1.6 E-09	1.0 E-09	6.5 E-10	5.3 E-10
Ga-73	4.91 h	F	0.010	6.7 E-10	0.001	4.5 E-10	2.0 E-10	1.2 E-10	6.4 E-11	5.4 E-11
		M	0.010	1.2 E-09	0.001	8.4 E-10	4.0 E-10	2.6 E-10	1.7 E-10	1.4 E-10
Germaniu										
Ge-66	2.27 h	F	1.000	4.5 E-10	1.000	3.5 E-10	1.8 E-10	1.1 E-10	6.7 E-11	5.4 E-11
		M	1.000	6.4 E-10	1.000	4.8 E-10	2.5 E-10	1.6 E-10	1.1 E-10	9.1 E-11
Ge-67	0.312 h	F	1.000	1.7 E-10	1.000	1.1 E-10	4.9 E-11	3.1 E-11	1.8 E-11	1.5 E-11
		M	1.000	2.5 E-10	1.000	1.6 E-10	7.3 E-11	4.6 E-11	2.9 E-11	2.5 E-11
Ge-68	288 d	F	1.000	5.4 E-09	1.000	3.8 E-09	1.8 E-09	1.1 E-09	6.3 E-10	5.2 E-10
		M	1.000	6.0 E-08	1.000	5.0 E-08	3.0 E-08	2.0 E-08	1.6 E-08	1.4 E-08
Ge-69	1.63 d	F	1.000	1.2 E-09	1.000	9.0 E-10	4.6 E-10	2.8 E-10	1.7 E-10	1.3 E-10
		M	1.000	1.8 E-09	1.000	1.4 E-09	7.4 E-10	4.9 E-10	3.6 E-10	2.9 E-10
Ge-71	11.8 d	F	1.000	6.0 E-11	1.000	4.3 E-11	2.0 E-11	1.1 E-11	6.1 E-12	4.8 E-12
		M	1.000	1.2 E-10	1.000	8.6 E-11	4.1 E-11	2.4 E-11	1.3 E-11	1.1 E-11
Ge-75	1.38 h	F	1.000	1.6 E-10	1.000	1.0 E-10	4.3 E-11	2.8 E-11	1.7 E-11	1.5 E-11
		M	1.000	2.9 E-10	1.000	1.9 E-10	8.9 E-11	6.1 E-11	4.4 E-11	3.6 E-11
Ge-77	11.3 h	F	1.000	1.3 E-09	1.000	9.5 E-10	4.7 E-10	2.9 E-10	1.7 E-10	1.4 E-10
		M	1.000	2.3 E-09	1.000	1.7 E-09	8.8 E-10	6.0 E-10	4.5 E-10	3.7 E-10
Ge-78	1.45 h	F	1.000	4.3 E-10	1.000	2.9 E-10	1.4 E-10	8.9 E-11	5.5 E-11	4.5 E-11
		M	1.000	7.3 E-10	1.000	5.0 E-10	2.5 E-10	1.6 E-10	1.2 E-10	9.5 E-11
Arsen										
As-69	0.253 h	M	1.000	2.1 E-10	0.500	1.4 E-10	6.3 E-11	4.0 E-11	2.5 E-11	2.1 E-11
As-70	0.876 h	M	1.000	5.7 E-10	0.500	4.3 E-10	2.1 E-10	1.3 E-10	8.3 E-11	6.7 E-11
As-71	2.70 d	M	1.000	2.2 E-09	0.500	1.9 E-09	1.0 E-09	6.8 E-10	5.0 E-10	4.0 E-10
As-72	1.08 d	M	1.000	5.9 E-09	0.500	5.7 E-09	2.7 E-09	1.7 E-09	1.1 E-09	9.0 E-10
As-73	80.3 d	M	1.000	5.4 E-09	0.500	4.0 E-09	2.3 E-09	1.5 E-09	1.2 E-09	1.0 E-09
As-74	17.8 d	M	1.000	1.1 E-08	0.500	8.4 E-09	4.7 E-09	3.3 E-09	2.6 E-09	2.1 E-09
As-76	1.10 d	M	1.000	5.1 E-09	0.500	4.6 E-09	2.2 E-09	1.4 E-09	8.8 E-10	7.4 E-10
As-77	1.62 d	M	1.000	2.2 E-09	0.500	1.7 E-09	8.9 E-10	6.2 E-10	5.0 E-10	3.9 E-10
As-78	1.51 h	M	1.000	8.0 E-10	0.500	5.8 E-10	2.7 E-10	1.7 E-10	1.1 E-10	8.9 E-11
Seleniu										
Se-70	0.683 h	F	1.000	3.9 E-10	0.800	3.0 E-10	1.5 E-10	9.0 E-11	5.1 E-11	4.2 E-11

		M	0.200	6.5 E-10	0.100	4.7 E-10	2.3 E-10	1.4 E-10	8.9 E-11	7.3 E-11
		S	0.020	6.8 E-10	0.010	4.8 E-10	2.3 E-10	1.5 E-10	9.4 E-11	7.6 E-11
Se-73	7.15 h	F	1.000	7.7 E-10	0.800	6.5 E-10	3.3 E-10	2.1 E-10	1.0 E-10	8.0 E-11
		M	0.200	1.6 E-09	0.100	1.2 E-09	5.9 E-10	3.8 E-10	2.4 E-10	1.9 E-10
		S	0.020	1.8 E-09	0.010	1.3 E-09	6.3 E-10	4.0 E-10	2.6 E-10	2.1 E-10
Se-73m	0.650 h	F	1.000	9.3 E-11	0.800	7.2 E-11	3.5 E-11	2.3 E-11	1.1 E-11	9.2 E-12
		M	0.200	1.8 E-10	0.100	1.3 E-10	6.1 E-11	3.9 E-11	2.5 E-11	2.0 E-11
		S	0.020	1.9 E-10	0.010	1.3 E-10	6.5 E-11	4.1 E-11	2.6 E-11	2.2 E-11
Se-75	120 d	F	1.000	7.8 E-09	0.800	6.0 E-09	3.4 E-09	2.5 E-09	1.2 E-09	1.0 E-09
		M	0.200	5.4 E-09	0.100	4.5 E-09	2.5 E-09	1.7 E-09	1.3 E-09	1.1 E-09
		S	0.020	5.6 E-09	0.010	4.7 E-09	2.9 E-09	2.0 E-09	1.6 E-09	1.3 E-09
Se-79	6.50 E+04 a	F	1.000	1.6 E-08	0.800	1.3 E-08	7.7 E-09	5.6 E-09	1.5 E-09	1.1 E-09
		M	0.200	1.4 E-08	0.100	1.1 E-08	6.9 E-09	4.9 E-09	3.3 E-09	2.6 E-09
		S	0.020	2.3 E-08	0.010	2.0 E-08	1.3 E-08	8.7 E-09	7.6 E-09	6.8 E-09
Se-81	0.308 h	F	1.000	8.6 E-11	0.800	5.4 E-11	2.3 E-11	1.5 E-11	9.2 E-12	8.0 E-12
		M	0.200	1.3 E-10	0.100	8.5 E-11	3.8 E-11	2.5 E-11	1.6 E-11	1.4 E-11
		S	0.020	1.4 E-10	0.010	8.9 E-11	3.9 E-11	2.6 E-11	1.7 E-11	1.5 E-11
Se-81m	0.954 h	F	1.000	1.8 E-10	0.800	1.2 E-10	5.4 E-11	3.4 E-11	1.9 E-11	1.6 E-11
		M	0.200	3.8 E-10	0.100	2.5 E-10	1.2 E-10	8.0 E-11	5.8 E-11	4.7 E-11
		S	0.020	4.1 E-10	0.010	2.7 E-10	1.3 E-10	8.5 E-11	6.2 E-11	5.1 E-11
Se-83	0.375 h	F	1.000	1.7 E-10	0.800	1.2 E-10	5.8 E-11	3.6 E-11	2.1 E-11	1.8 E-11
		M	0.200	2.7 E-10	0.100	1.9 E-10	9.2 E-11	5.9 E-11	3.9 E-11	3.2 E-11
		S	0.020	2.8 E-10	0.010	2.0 E-10	9.6 E-11	6.2 E-11	4.1 E-11	3.4 E-11

Brom

Br-74	0.422 h	F	1.000	2.5 E-10	1.000	1.8 E-10	8.6 E-11	5.3 E-11	3.2 E-11	2.6 E-11
		M	1.000	3.6 E-10	1.000	2.5 E-10	1.2 E-10	7.5 E-11	4.6 E-11	3.8 E-11
Br-74m	0.691 h	F	1.000	4.0 E-10	1.000	2.8 E-10	1.3 E-10	8.1 E-11	4.8 E-11	3.9 E-11
		M	1.000	5.9 E-10	1.000	4.1 E-10	1.9 E-10	1.2 E-10	7.5 E-11	6.2 E-11
Br-75	1.63 h	F	1.000	2.9 E-10	1.000	2.1 E-10	9.7 E-11	5.9 E-11	3.5 E-11	2.9 E-11
		M	1.000	4.5 E-10	1.000	3.1 E-10	1.5 E-10	9.7 E-11	6.5 E-11	5.3 E-11
Br-76	16.2 h	F	1.000	2.2 E-09	1.000	1.7 E-09	8.4 E-10	5.1 E-10	3.0 E-10	2.4 E-10
		M	1.000	3.0 E-09	1.000	2.3 E-09	1.2 E-09	7.5 E-10	5.0 E-10	4.1 E-10
Br-77	2.33 d	F	1.000	5.3 E-10	1.000	4.4 E-10	2.2 E-10	1.3 E-10	7.7 E-11	6.2 E-11
		M	1.000	6.3 E-10	1.000	5.1 E-10	2.7 E-10	1.6 E-10	1.1 E-10	8.4 E-11
Br-80	0.290 h	F	1.000	7.1 E-11	1.000	4.4 E-11	1.8 E-11	1.2 E-11	6.9 E-12	5.9 E-12
		M	1.000	1.1 E-10	1.000	6.5 E-11	2.8 E-11	1.8 E-11	1.1 E-11	9.4 E-12
Br-80m	4.42 h	F	1.000	4.3 E-10	1.000	2.8 E-10	1.2 E-10	7.2 E-11	4.0 E-11	3.3 E-11
		M	1.000	6.8 E-10	1.000	4.5 E-10	2.1 E-10	1.4 E-10	9.3 E-11	7.6 E-11
Br-82	1.47 d	F	1.000	2.7 E-09	1.000	2.2 E-09	1.2 E-09	7.0 E-10	4.2 E-10	3.5 E-10
		M	1.000	3.8 E-09	1.000	3.0 E-09	1.7 E-09	1.1 E-09	7.9 E-10	6.3 E-10
Br-83	2.39 h	F	1.000	1.7 E-10	1.000	1.1 E-10	4.7 E-11	3.0 E-11	1.8 E-11	1.6 E-11
		M	1.000	3.5 E-10	1.000	2.3 E-10	1.1 E-10	7.7 E-11	5.9 E-11	4.8 E-11
Br-84	0.530 h	F	1.000	2.4 E-10	1.000	1.6 E-10	7.1 E-11	4.4 E-11	2.6 E-11	2.2 E-11
		M	1.000	3.7 E-10	1.000	2.4 E-10	1.1 E-10	6.9 E-11	4.4 E-11	3.7 E-11

Rubidiu

Rb-79	0.382 h	F	1.000	1.6 E-10	1.000	1.1 E-10	5.0 E-11	3.2 E-11	1.9 E-11	1.6 E-11
Rb-81	4.58 h	F	1.000	3.2 E-10	1.000	2.5 E-10	1.2 E-10	7.1 E-11	4.2 E-11	3.4 E-11
Rb-81m	0.533 h	F	1.000	6.2 E-11	1.000	4.6 E-11	2.2 E-11	1.4 E-11	8.5 E-12	7.0 E-12
Rb-82m	6.20 h	F	1.000	8.6 E-10	1.000	7.3 E-10	3.9 E-10	2.3 E-10	1.4 E-10	1.1 E-10
Rb-83	86.2 d	F	1.000	4.9 E-09	1.000	3.8 E-09	2.0 E-09	1.3 E-09	7.9 E-10	6.9 E-10
Rb-84	32.8 d	F	1.000	8.6 E-09	1.000	6.4 E-09	3.1 E-09	2.0 E-09	1.2 E-09	1.0 E-09
Rb-86	18.7 d	F	1.000	1.2 E-08	1.000	7.7 E-09	3.4 E-09	2.0 E-09	1.1 E-09	9.3 E-10

Rb-87	4.70 E+10 a	F	1.000	6.0 E-09	1.000	4.1 E-09	1.8 E-09	1.1 E-09	6.0 E-10	5.0 E-10
Rb-88	0.297 h	F	1.000	1.9 E-10	1.000	1.2 E-10	5.2 E-11	3.2 E-11	1.9 E-11	1.6 E-11
Rb-89	0.253 h	F	1.000	1.4 E-10	1.000	9.3 E-11	4.3 E-11	2.7 E-11	1.6 E-11	1.4 E-11
Stronțiu(*)										
Sr-80	1.67 h	F	0.600	7.8 E-10	0.300	5.4 E-10	2.4 E-10	1.4 E-10	7.9 E-11	7.1 E-11
		M	0.200	1.4 E-09	0.100	9.0 E-10	4.1 E-10	2.5 E-10	1.5 E-10	1.3 E-10
		S	0.020	1.5 E-09	0.010	9.4 E-10	4.3 E-10	2.7 E-10	1.6 E-10	1.4 E-10
Sr-81	0.425 h	F	0.600	2.1 E-10	0.300	1.5 E-10	6.7 E-11	4.1 E-11	2.4 E-11	2.1 E-11
		M	0.200	3.3 E-10	0.100	2.2 E-10	1.0 E-10	6.6 E-11	4.2 E-11	3.5 E-11
		S	0.020	3.4 E-10	0.010	2.3 E-10	1.1 E-10	6.9 E-11	4.4 E-11	3.7 E-11
Sr-82	25.0 d	F	0.600	2.8 E-08	0.300	1.5 E-08	6.6 E-09	4.6 E-09	3.2 E-09	2.1 E-09
		M	0.200	5.5 E-08	0.100	4.0 E-08	2.1 E-08	1.4 E-08	1.0 E-08	8.9 E-09
		S	0.020	6.1 E-08	0.010	4.6 E-08	2.5 E-08	1.7 E-08	1.2 E-08	1.1 E-08
Sr-83	1.35 d	F	0.600	1.4 E-09	0.300	1.1 E-09	5.5 E-10	3.4 E-10	2.0 E-10	1.6 E-10
		M	0.200	2.5 E-09	0.100	1.9 E-09	9.5 E-10	6.0 E-10	3.9 E-10	3.1 E-10
		S	0.020	2.8 E-09	0.010	2.0 E-09	1.0 E-09	6.5 E-10	4.2 E-10	3.4 E-10
Sr-85	64.8 d	F	0.600	4.4 E-09	0.300	2.3 E-09	1.1 E-09	9.6 E-10	8.3 E-10	3.8 E-10
		M	0.200	4.3 E-09	0.100	3.1 E-09	1.8 E-09	1.2 E-09	8.8 E-10	6.4 E-10
		S	0.020	4.4 E-09	0.010	3.7 E-09	2.2 E-09	1.3 E-09	1.0 E-09	8.1 E-10
Sr-85m	1.16 h	F	0.600	2.4 E-11	0.300	1.9 E-11	9.6 E-12	6.0 E-12	3.7 E-12	2.9 E-12
		M	0.200	3.1 E-11	0.100	2.5 E-11	1.3 E-11	8.0 E-12	5.1 E-12	4.1 E-12
		S	0.020	3.2 E-11	0.010	2.6 E-11	1.3 E-11	8.3 E-12	5.4 E-12	4.3 E-12
Sr-87m	2.80 h	F	0.600	9.7 E-11	0.300	7.8 E-11	3.8 E-11	2.3 E-11	1.3 E-11	1.1 E-11
		M	0.200	1.6 E-10	0.100	1.2 E-10	5.9 E-11	3.8 E-11	2.5 E-11	2.0 E-11
		S	0.020	1.7 E-10	0.010	1.2 E-10	6.2 E-11	4.0 E-11	2.6 E-11	2.1 E-11
Sr-89	50.5 d	F	0.600	1.5 E-08	0.300	7.3 E-09	3.2 E-09	2.3 E-09	1.7 E-09	1.0 E-09
		M	0.200	3.3 E-08	0.100	2.4 E-08	1.3 E-08	9.1 E-09	7.3 E-09	6.1 E-09
		S	0.020	3.9 E-08	0.010	3.0 E-08	1.7 E-08	1.2 E-08	9.3 E-09	7.9 E-09
Sr-90	29.1 a	F	0.600	1.3 E-07	0.300	5.2 E-08	3.1 E-08	4.1 E-08	5.3 E-08	2.4 E-08
		M	0.200	1.5 E-07	0.100	1.1 E-07	6.5 E-08	5.1 E-08	5.0 E-08	3.6 E-08
		S	0.020	4.2 E-07	0.010	4.0 E-07	2.7 E-07	1.8 E-07	1.6 E-07	1.6 E-07
Sr-91	9.50 h	F	0.600	1.4 E-09	0.300	1.1 E-09	5.2 E-10	3.1 E-10	1.7 E-10	1.6 E-10
		M	0.200	3.1 E-09	0.100	2.2 E-09	1.1 E-09	6.9 E-10	4.4 E-10	3.7 E-10
		S	0.020	3.5 E-09	0.010	2.5 E-09	1.2 E-09	7.7 E-10	4.9 E-10	4.1 E-10
Sr-92	2.71 h	F	0.600	9.0 E-10	0.300	7.1 E-10	3.3 E-10	2.0 E-10	1.0 E-10	9.8 E-11
		M	0.200	1.9 E-09	0.100	1.4 E-09	6.5 E-10	4.1 E-10	2.5 E-10	2.1 E-10
		S	0.020	2.2 E-09	0.010	1.5 E-09	7.0 E-10	4.5 E-10	2.7 E-10	2.3 E-10
Ytriu										
Y-86	14.7 h	M	0.001	3.7 E-09	1.0 E-04	2.9 E-09	1.5 E-09	9.3 E-10	5.6 E-10	4.5 E-10
		S	0.001	3.8 E-09	1.0 E-04	3.0 E-09	1.5 E-09	9.6 E-10	5.8 E-10	4.7 E-10
Y-86m	0.800 h	M	0.001	2.2 E-10	1.0 E-04	1.7 E-10	8.7 E-11	5.6 E-11	3.4 E-11	2.7 E-11
		S	0.001	2.3 E-10	1.0 E-04	1.8 E-10	9.0 E-11	5.7 E-11	3.5 E-11	2.8 E-11

Y-87	3.35 d	M	0.001	2.7 E-09	1.0 E-04	2.1 E-09	1.1 E-09	7.0 E-10	4.7 E-10	3.7 E-10
		S	0.001	2.8 E-09	1.0 E-04	2.2 E-09	1.1 E-09	7.3 E-10	5.0 E-10	3.9 E-10
Y-88	107 d	M	0.001	1.9 E-08	1.0 E-04	1.6 E-08	1.0 E-08	6.7 E-09	4.9 E-09	4.1 E-09
		S	0.001	2.0 E-08	1.0 E-04	1.7 E-08	9.8 E-09	6.6 E-09	5.4 E-09	4.4 E-09
Y-90	2.67 d	M	0.001	1.3 E-08	1.0 E-04	8.4 E-09	4.0 E-09	2.6 E-09	1.7 E-09	1.4 E-09
		S	0.001	1.3 E-08	1.0 E-04	8.8 E-09	4.2 E-09	2.7 E-09	1.8 E-09	1.5 E-09
Y-90m	3.19 h	M	0.001	7.2 E-10	1.0 E-04	5.7 E-10	2.8 E-10	1.8 E-10	1.1 E-10	9.5 E-11
		S	0.001	7.5 E-10	1.0 E-04	6.0 E-10	2.9 E-10	1.9 E-10	1.2 E-10	1.0 E-10
Y-91	58.5 d	M	0.001	3.9 E-08	1.0 E-04	3.0 E-08	1.6 E-08	1.1 E-08	8.4 E-09	7.1 E-09

		S	0.001	4.3 E-08	1.0 E-04	3.4 E-08	1.9 E-08	1.3 E-08	1.0 E-08	8.9 E-09
Y-91m	0.828 h	M	0.001	7.0 E-11	1.0 E-04	5.5 E-11	2.9 E-11	1.8 E-11	1.2 E-11	1.0 E-11
		S	0.001	7.4 E-11	1.0 E-04	5.9 E-11	3.1 E-11	2.0 E-11	1.4 E-11	1.1 E-11
Y-92	3.54 h	M	0.001	1.8 E-09	1.0 E-04	1.2 E-09	5.3 E-10	3.3 E-10	2.0 E-10	1.7 E-10
		S	0.001	1.9 E-09	1.0 E-04	1.2 E-09	5.5 E-10	3.5 E-10	2.1 E-10	1.8 E-10
Y-93	10.1 h	M	0.001	4.4 E-09	1.0 E-04	2.9 E-09	1.3 E-09	8.1 E-10	4.7 E-10	4.0 E-10
		S	0.001	4.6 E-09	1.0 E-04	3.0 E-09	1.4 E-09	8.5 E-10	5.0 E-10	4.2 E-10
Y-94	0.318 h	M	0.001	2.8 E-10	1.0 E-04	1.8 E-10	8.1 E-11	5.0 E-11	3.1 E-11	2.7 E-11
		S	0.001	2.9 E-10	1.0 E-04	1.9 E-10	8.4 E-11	5.2 E-11	3.3 E-11	2.8 E-11
Y-95	0.178 h	M	0.001	1.5 E-10	1.0 E-04	9.8 E-11	4.4 E-11	2.8 E-11	1.8 E-11	1.5 E-11
		S	0.001	1.6 E-10	1.0 E-04	1.0 E-10	4.5 E-11	2.9 E-11	1.8 E-11	1.6 E-11
Zirconiu										
Zr-86	16.5 h	F	0.020	2.4 E-09	0.002	1.9 E-09	9.5 E-10	5.9 E-10	3.4 E-10	2.7 E-10
		M	0.020	3.4 E-09	0.002	2.6 E-09	1.3 E-09	8.4 E-10	5.2 E-10	4.2 E-10
		S	0.020	3.5 E-09	0.002	2.7 E-09	1.4 E-09	8.7 E-10	5.4 E-10	4.3 E-10
Zr-88	83.4 d	F	0.020	6.9 E-09	0.002	8.3 E-09	5.6 E-09	4.7 E-09	3.6 E-09	3.5 E-09
		M	0.020	8.5 E-09	0.002	7.8 E-09	5.1 E-09	3.6 E-09	3.0 E-09	2.6 E-09
		S	0.020	1.3 E-08	0.002	1.2 E-08	7.7 E-09	5.2 E-09	4.3 E-09	3.6 E-09
Zr-89	3.27 d	F	0.020	2.6 E-09	0.002	2.0 E-09	9.9 E-10	6.1 E-10	3.6 E-10	2.9 E-10
		M	0.020	3.7 E-09	0.002	2.8 E-09	1.5 E-09	9.6 E-10	6.5 E-10	5.2 E-10
		S	0.020	3.9 E-09	0.002	2.9 E-09	1.5 E-09	1.0 E-09	6.8 E-10	5.5 E-10
Zr-93	1.53 E+06 a	F	0.020	3.5 E-09	0.002	4.8 E-09	5.3 E-09	9.7 E-09	1.8 E-08	2.5 E-08
		M	0.020	3.3 E-09	0.002	3.1 E-09	2.8 E-09	4.1 E-09	7.5 E-09	1.0 E-08
		S	0.020	7.0 E-09	0.002	6.4 E-09	4.5 E-09	3.3 E-09	3.3 E-09	3.3 E-09
Zr-95	64.0 d	F	0.020	1.2 E-08	0.002	1.1 E-08	6.4 E-09	4.2 E-09	2.8 E-09	2.5 E-09
		M	0.020	2.0 E-08	0.002	1.6 E-08	9.7 E-09	6.8 E-09	5.9 E-09	4.8 E-09
		S	0.020	2.4 E-08	0.002	1.9 E-08	1.2 E-08	8.3 E-09	7.3 E-09	5.9 E-09
Zr-97	16.9 h	F	0.020	5.0 E-09	0.002	3.4 E-09	1.5 E-09	9.1 E-10	4.8 E-10	3.9 E-10
		M	0.020	7.8 E-09	0.002	5.3 E-09	2.8 E-09	1.8 E-09	1.1 E-09	9.2 E-10
		S	0.020	8.2 E-09	0.002	5.6 E-09	2.9 E-09	1.9 E-09	1.2 E-09	8.9 E-10
Niobiu										
Nb-88	0.238 h	F	0.020	1.8 E-10	0.010	1.3 E-10	6.3 E-11	3.9 E-11	2.4 E-11	1.9 E-11
		M	0.020	2.5 E-10	0.010	1.8 E-10	8.5 E-11	5.3 E-11	3.3 E-11	2.7 E-11
		S	0.020	2.6 E-10	0.010	1.8 E-10	8.7 E-11	5.5 E-11	3.5 E-11	2.8 E-11
Nb-89	2.03 h	F	0.020	7.0 E-10	0.010	4.8 E-10	2.2 E-10	1.3 E-10	7.4 E-11	6.1 E-11
		M	0.020	1.1 E-09	0.010	7.6 E-10	3.6 E-10	2.2 E-10	1.4 E-10	1.1 E-10
		S	0.020	1.2 E-09	0.010	7.9 E-10	3.7 E-10	2.3 E-10	1.5 E-10	1.2 E-10
Nb-89	1.10 h	F	0.020	4.0 E-10	0.010	2.9 E-10	1.4 E-10	8.3 E-11	4.8 E-11	3.9 E-11
		M	0.020	6.2 E-10	0.010	4.3 E-10	2.1 E-10	1.3 E-10	8.2 E-11	6.8 E-11
		S	0.020	6.4 E-10	0.010	4.4 E-10	2.1 E-10	1.4 E-10	8.6 E-11	7.1 E-11
Nb-90	14.6 h	F	0.020	3.5 E-09	0.010	2.7 E-09	1.3 E-09	8.2 E-10	4.7 E-10	3.8 E-10
		M	0.020	5.1 E-09	0.010	3.9 E-09	1.9 E-09	1.3 E-09	7.8 E-10	6.3 E-10
		S	0.020	5.3 E-09	0.010	4.0 E-09	2.0 E-09	1.3 E-09	8.1 E-10	6.6 E-10
Nb-93m	13.6 a	F	0.020	1.8 E-09	0.010	1.4 E-09	7.0 E-10	4.4 E-10	2.7 E-10	2.2 E-10
		M	0.020	3.1 E-09	0.010	2.4 E-09	1.3 E-09	8.2 E-10	5.9 E-10	5.1 E-10
		S	0.020	7.4 E-09	0.010	6.5 E-09	4.0 E-09	2.5 E-09	1.9 E-09	1.8 E-09
Nb-94	2.03 E+04 a	F	0.020	3.1 E-08	0.010	2.7 E-08	1.5 E-08	1.0 E-08	6.7 E-09	5.8 E-09
		M	0.020	4.3 E-08	0.010	3.7 E-08	2.3 E-08	1.6 E-08	1.3 E-08	1.1 E-08
		S	0.020	1.2 E-07	0.010	1.2 E-07	8.3 E-08	5.8 E-08	5.2 E-08	4.9 E-08
Nb-95	35.1 d	F	0.020	4.1 E-09	0.010	3.1 E-09	1.6 E-09	1.2 E-09	7.5 E-10	5.7 E-10
		M	0.020	6.8 E-09	0.010	5.2 E-09	3.1 E-09	2.2 E-09	1.9 E-09	1.5 E-09
		S	0.020	7.7 E-09	0.010	5.9 E-09	3.6 E-09	2.5 E-09	2.2 E-09	1.8 E-09
Nb-95m	3.61 d	F	0.020	2.3 E-09	0.010	1.6 E-09	7.0 E-10	4.2 E-10	2.4 E-10	2.0 E-10

		M	0.020	4.3 E-09	0.010	3.1 E-09	1.7 E-09	1.2 E-09	1.0 E-09	7.9 E-10
		S	0.020	4.6 E-09	0.010	3.4 E-09	1.9 E-09	1.3 E-09	1.1 E-09	8.8 E-10
Nb-96	23.3 h	F	0.020	3.1 E-09	0.010	2.4 E-09	1.2 E-09	7.3 E-10	4.2 E-10	3.4 E-10
		M	0.020	4.7 E-09	0.010	3.6 E-09	1.8 E-09	1.2 E-09	7.8 E-10	6.3 E-10
		S	0.020	4.9 E-09	0.010	3.7 E-09	1.9 E-09	1.2 E-09	8.3 E-10	6.6 E-10
Nb-97	1.20 h	F	0.020	2.2 E-10	0.010	1.5 E-10	6.8 E-11	4.2 E-11	2.5 E-11	2.1 E-11
		M	0.020	3.7 E-10	0.010	2.5 E-10	1.2 E-10	7.7 E-11	5.2 E-11	4.3 E-11
		S	0.020	3.8 E-10	0.010	2.6 E-10	1.2 E-10	8.1 E-11	5.5 E-11	4.5 E-11
Nb-98	0.858 h	F	0.020	3.4 E-10	0.010	2.4 E-10	1.1 E-10	6.9 E-11	4.1 E-11	3.3 E-11
		M	0.020	5.2 E-10	0.010	3.6 E-10	1.7 E-10	1.1 E-10	6.8 E-11	5.6 E-11
		S	0.020	5.3 E-10	0.010	3.7 E-10	1.8 E-10	1.1 E-10	7.1 E-11	5.8 E-11

Molibden

Mo-90	5.67 h	F	1.000	1.2 E-09	0.800	1.1 E-09	5.3 E-10	3.2 E-10	1.9 E-10	1.5 E-10
		M	0.200	2.6 E-09	0.100	2.0 E-09	9.9 E-10	6.5 E-10	4.2 E-10	3.4 E-10
		S	0.020	2.8 E-09	0.010	2.1 E-09	1.1 E-09	6.9 E-10	4.5 E-10	3.6 E-10
Mo-93	3.50 E+03 a	F	1.000	3.1 E-09	0.800	2.6 E-09	1.7 E-09	1.3 E-09	1.1 E-09	1.0 E-09
		M	0.200	2.2 E-09	0.100	1.8 E-09	1.1 E-09	7.9 E-10	6.6 E-10	5.9 E-10
		S	0.020	6.0 E-09	0.010	5.8 E-09	4.0 E-09	2.8 E-09	2.4 E-09	2.3 E-09
Mo-93m	6.85 h	F	1.000	7.3 E-10	0.800	6.4 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.6 E-11
		M	0.200	1.2 E-09	0.100	9.7 E-10	5.0 E-10	3.2 E-10	2.0 E-10	1.6 E-10
		S	0.020	1.3 E-09	0.010	1.0 E-09	5.2 E-10	3.4 E-10	2.1 E-10	1.7 E-10
Mo-99	2.75 d	F	1.000	2.3 E-09	0.800	1.7 E-09	7.7 E-10	4.7 E-10	2.6 E-10	2.2 E-10
		M	0.200	6.0 E-09	0.100	4.4 E-09	2.2 E-09	1.5 E-09	1.1 E-09	8.9 E-10
		S	0.020	6.9 E-09	0.010	4.8 E-09	2.4 E-09	1.7 E-09	1.2 E-09	9.9 E-10
Mo-101	0.244 h	F	1.000	1.4 E-10	0.800	9.7 E-11	4.4 E-11	2.8 E-11	1.7 E-11	1.4 E-11
		M	0.200	2.2 E-10	0.100	1.5 E-10	7.0 E-11	4.5 E-11	3.0 E-11	2.5 E-11
		S	0.020	2.3 E-10	0.010	1.6 E-10	7.2 E-11	4.7 E-11	3.1 E-11	2.6 E-11

Tehnețiu

Tc-93	2.75 h	F	1.000	2.4 E-10	0.800	2.1 E-10	1.1 E-10	6.7 E-11	4.0 E-11	3.2 E-11
		M	0.200	2.7 E-10	0.100	2.3 E-10	1.2 E-10	7.5 E-11	4.4 E-11	3.5 E-11
		S	0.020	2.8 E-10	0.010	2.3 E-10	1.2 E-10	7.6 E-11	4.5 E-11	3.5 E-11
Tc-93m	0.725 h	F	1.000	1.2 E-10	0.800	9.8 E-11	4.9 E-11	2.9 E-11	1.8 E-11	1.4 E-11
		M	0.200	1.4 E-10	0.100	1.1 E-10	5.4 E-11	3.4 E-11	2.1 E-11	1.7 E-11
		S	0.020	1.4 E-10	0.010	1.1 E-10	5.4 E-11	3.4 E-11	2.1 E-11	1.7 E-11
Tc-94	4.88 h	F	1.000	8.9 E-10	0.800	7.5 E-10	3.9 E-10	2.3 E-10	1.4 E-10	1.1 E-10
		M	0.200	9.8 E-10	0.100	8.1 E-10	4.2 E-10	2.6 E-10	1.6 E-10	1.2 E-10
		S	0.020	9.9 E-10	0.010	8.2 E-10	4.3 E-10	2.7 E-10	1.6 E-10	1.3 E-10
Tc-94m	0.867 h	F	1.000	4.8 E-10	0.800	3.4 E-10	1.6 E-10	8.6 E-11	5.2 E-11	4.1 E-11
		M	0.200	4.4 E-10	0.100	3.0 E-10	1.4 E-10	8.8 E-11	5.5 E-11	4.5 E-11
		S	0.020	4.3 E-10	0.010	3.0 E-10	1.4 E-10	8.8 E-11	5.6 E-11	4.6 E-11

Tc-95	20.0 h	F	1.000	7.5 E-10	0.800	6.3 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.6 E-11
		M	0.200	8.3 E-10	0.100	6.9 E-10	3.6 E-10	2.2 E-10	1.3 E-10	1.0 E-10
		S	0.020	8.5 E-10	0.010	7.0 E-10	3.6 E-10	2.3 E-10	1.4 E-10	1.1 E-10
Tc-95m	61.0 d	F	1.000	2.4 E-09	0.800	1.8 E-09	9.3 E-10	5.7 E-10	3.6 E-10	2.9 E-10
		M	0.200	4.9 E-09	0.100	4.0 E-09	2.3 E-09	1.5 E-09	1.1 E-09	8.8 E-10
		S	0.020	6.0 E-09	0.010	5.0 E-09	2.7 E-09	1.8 E-09	1.5 E-09	1.2 E-09
Tc-96	4.28 d	F	1.000	4.2 E-09	0.800	3.4 E-09	1.8 E-09	1.1 E-09	7.0 E-10	5.7 E-10
		M	0.200	4.7 E-09	0.100	3.9 E-09	2.1 E-09	1.3 E-09	8.6 E-10	6.8 E-10
		S	0.020	4.8 E-09	0.010	3.9 E-09	2.1 E-09	1.4 E-09	8.9 E-10	7.0 E-10
Tc-96m	0.858 h	F	1.000	5.3 E-11	0.800	4.1 E-11	2.1 E-11	1.3 E-11	7.7 E-12	6.2 E-12
		M	0.200	5.6 E-11	0.100	4.4 E-11	2.3 E-11	1.4 E-11	9.3 E-12	7.4 E-12

		S	0.020	5.7 E-11	0.010	4.4 E-11	2.3 E-11	1.5 E-11	9.5 E-12	7.5 E-12
Tc-97	2.60 E+06 a	F	1.000	5.2 E-10	0.800	3.7 E-10	1.7 E-10	9.4 E-11	5.6 E-11	4.3 E-11
		M	0.200	1.2 E-09	0.100	1.0 E-09	5.7 E-10	3.6 E-10	2.8 E-10	2.2 E-10
		S	0.020	5.0 E-09	0.010	4.8 E-09	3.3 E-09	2.2 E-09	1.9 E-09	1.8 E-09
Tc-97m	87.0 d	F	1.000	3.4 E-09	0.800	2.3 E-09	9.8 E-10	5.6 E-10	3.0 E-10	2.7 E-10
		M	0.200	1.3 E-08	0.100	1.0 E-08	6.1 E-09	4.4 E-09	4.1 E-09	3.2 E-09
		S	0.020	1.6 E-08	0.010	1.3 E-08	7.8 E-09	5.7 E-09	5.2 E-09	4.1 E-09
Tc-98	4.20 E+06 a	F	1.000	1.0 E-08	0.800	6.8 E-09	3.2 E-09	1.9 E-09	1.2 E-09	9.7 E-10
		M	0.200	3.5 E-08	0.100	2.9 E-08	1.7 E-08	1.2 E-08	1.0 E-08	8.3 E-09
		S	0.020	1.1 E-07	0.010	1.1 E-07	7.6 E-08	5.4 E-08	4.8 E-08	4.5 E-08
Tc-99	2.13 E+05 a	F	1.000	4.0 E-09	0.800	2.5 E-09	1.0 E-09	5.9 E-10	3.6 E-10	2.9 E-10
		M	0.200	1.7 E-08	0.100	1.3 E-08	8.0 E-09	5.7 E-09	5.0 E-09	4.0 E-09
		S	0.020	4.1 E-08	0.010	3.7 E-08	2.4 E-08	1.7 E-08	1.5 E-08	1.3 E-08
Tc-99m	6.02 h	F	1.000	1.2 E-10	0.800	8.7 E-11	4.1 E-11	2.4 E-11	1.5 E-11	1.2 E-11
		M	0.200	1.3 E-10	0.100	9.9 E-11	5.1 E-11	3.4 E-11	2.4 E-11	1.9 E-11
		S	0.020	1.3 E-10	0.010	1.0 E-10	5.2 E-11	3.5 E-11	2.5 E-11	2.0 E-11
Tc-101	0.237 h	F	1.000	8.5 E-11	0.800	5.6 E-11	2.5 E-11	1.6 E-11	9.7 E-12	8.2 E-12
		M	0.200	1.1 E-10	0.100	7.1 E-11	3.2 E-11	2.1 E-11	1.4 E-11	1.2 E-11
		S	0.020	1.1 E-10	0.010	7.3 E-11	3.3 E-11	2.2 E-11	1.4 E-11	1.2 E-11
Tc-104	0.303 h	F	1.000	2.7 E-10	0.800	1.8 E-10	8.0 E-11	4.6 E-11	2.8 E-11	2.3 E-11
		M	0.200	2.9 E-10	0.100	1.9 E-10	8.6 E-11	5.4 E-11	3.3 E-11	2.8 E-11
		S	0.020	2.9 E-10	0.010	1.9 E-10	8.7 E-11	5.4 E-11	3.4 E-11	2.9 E-11

Ruteniu

Ru-94	0.863 h	F	0.100	2.5 E-10	0.050	1.9 E-10	9.0 E-11	5.4 E-11	3.1 E-11	2.5 E-11
		M	0.100	3.8 E-10	0.050	2.8 E-10	1.3 E-10	8.4 E-11	5.2 E-11	4.2 E-11
		S	0.020	4.0 E-10	0.010	2.9 E-10	1.4 E-10	8.7 E-11	5.4 E-11	4.4 E-11
Ru-97	2.90 d	F	0.100	5.5 E-10	0.050	4.4 E-10	2.2 E-10	1.3 E-10	7.7 E-11	6.2 E-11
		M	0.100	7.7 E-10	0.050	6.1 E-10	3.1 E-10	2.0 E-10	1.3 E-10	1.0 E-10
		S	0.020	8.1 E-10	0.010	6.3 E-10	3.3 E-10	2.1 E-10	1.4 E-10	1.1 E-10
Ru-103	39.3 d	F	0.100	4.2 E-09	0.050	3.0 E-09	1.5 E-09	9.3 E-10	5.6 E-10	4.8 E-10
		M	0.100	1.1 E-08	0.050	8.4 E-09	5.0 E-09	3.5 E-09	3.0 E-09	2.4 E-09
		S	0.020	1.3 E-08	0.010	1.0 E-08	6.0 E-09	4.2 E-09	3.7 E-09	3.0 E-09
Ru-105	4.44 h	F	0.100	7.1 E-10	0.050	5.1 E-10	2.3 E-10	1.4 E-10	7.9 E-11	6.5 E-11
		M	0.100	1.3 E-09	0.050	9.2 E-10	4.5 E-10	3.0 E-10	2.0 E-10	1.7 E-10
		S	0.020	1.4 E-09	0.010	9.8 E-10	4.8 E-10	3.2 E-10	2.2 E-10	1.8 E-10
Ru-106	1.01 a	F	0.100	7.2 E-08	0.050	5.4 E-08	2.6 E-08	1.6 E-08	9.2 E-09	7.9 E-09
		M	0.100	1.4 E-07	0.050	1.1 E-07	6.4 E-08	4.1 E-08	3.1 E-08	2.8 E-08
		S	0.020	2.6 E-07	0.010	2.3 E-07	1.4 E-07	9.1 E-08	7.1 E-08	6.6 E-08

Rodiu

Rh-99	16.0 d	F	0.100	2.6 E-09	0.050	2.0 E-09	9.9 E-10	6.2 E-10	3.8 E-10	3.2 E-10
		M	0.100	4.5 E-09	0.050	3.5 E-09	2.0 E-09	1.3 E-09	9.6 E-10	7.7 E-10
		S	0.100	4.9 E-09	0.050	3.8 E-09	2.2 E-09	1.3 E-09	1.1 E-09	8.7 E-10
Rh-99m	4.70 h	F	0.100	2.4 E-10	0.050	2.0 E-10	1.0 E-10	6.1 E-11	3.5 E-11	2.8 E-11
		M	0.100	3.1 E-10	0.050	2.5 E-10	1.3 E-10	8.0 E-11	4.9 E-11	3.9 E-11
		S	0.100	3.2 E-10	0.050	2.6 E-10	1.3 E-10	8.2 E-11	5.1 E-11	4.0 E-11
Rh-100	20.8 h	F	0.100	2.1 E-09	0.050	1.8 E-09	9.1 E-10	5.6 E-10	3.3 E-10	2.6 E-10
		M	0.100	2.7 E-09	0.050	2.2 E-09	1.1 E-09	7.1 E-10	4.3 E-10	3.4 E-10
		S	0.100	2.8 E-09	0.050	2.2 E-09	1.2 E-09	7.3 E-10	4.4 E-10	3.5 E-10
Rh-101	3.20 a	F	0.100	7.4 E-09	0.050	6.1 E-09	3.5 E-09	2.3 E-09	1.5 E-09	1.4 E-09
		M	0.100	9.8 E-09	0.050	8.0 E-09	4.9 E-09	3.4 E-09	2.8 E-09	2.3 E-09

		S	0.100	1.9 E-08	0.050	1.7 E-08	1.1 E-08	7.4 E-09	6.2 E-09	5.4 E-09
Rh-101m	4.34 d	F	0.100	8.4 E-10	0.050	6.6 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.7 E-11
		M	0.100	1.3 E-09	0.050	9.8 E-10	5.2 E-10	3.5 E-10	2.5 E-10	1.9 E-10
		S	0.100	1.3 E-09	0.050	1.0 E-09	5.5 E-10	3.7 E-10	2.7 E-10	2.1 E-10
Rh-102	2.90 a	F	0.100	3.3 E-08	0.050	2.8 E-08	1.7 E-08	1.1 E-08	7.9 E-09	7.3 E-09
		M	0.100	3.0 E-08	0.050	2.5 E-08	1.5 E-08	1.0 E-08	7.9 E-09	6.9 E-09
		S	0.100	5.4 E-08	0.050	5.0 E-08	3.5 E-08	2.4 E-08	2.0 E-08	1.7 E-08
Rh-102m	207 d	F	0.100	1.2 E-08	0.050	8.7 E-09	4.4 E-09	2.7 E-09	1.7 E-09	1.5 E-09
		M	0.100	2.0 E-08	0.050	1.6 E-08	9.0 E-09	6.0 E-09	4.7 E-09	4.0 E-09
		S	0.100	3.0 E-08	0.050	2.5 E-08	1.5 E-08	1.0 E-08	8.2 E-09	7.1 E-09
Rh-103m	0.935 h	F	0.100	8.6 E-12	0.050	5.9 E-12	2.7 E-12	1.6 E-12	1.0 E-12	8.6 E-13
		M	0.100	1.9 E-11	0.050	1.2 E-11	6.3 E-12	4.0 E-12	3.0 E-12	2.5 E-12
		S	0.100	2.0 E-11	0.050	1.3 E-11	6.7 E-12	4.3 E-12	3.2 E-12	2.7 E-12
Rh-105	1.47 d	F	0.100	1.0 E-09	0.050	6.9 E-10	3.0 E-10	1.8 E-10	9.6 E-11	8.2 E-11
		M	0.100	2.2 E-09	0.050	1.6 E-09	7.4 E-10	5.2 E-10	4.1 E-10	3.2 E-10
		S	0.100	2.4 E-09	0.050	1.7 E-09	8.0 E-10	5.6 E-10	4.5 E-10	3.5 E-10
Rh-106m	2.20 h	F	0.100	5.7 E-10	0.050	4.5 E-10	2.2 E-10	1.4 E-10	8.0 E-11	6.5 E-11
		M	0.100	8.2 E-10	0.050	6.3 E-10	3.2 E-10	2.0 E-10	1.3 E-10	1.1 E-10
		S	0.100	8.5 E-10	0.050	6.5 E-10	3.3 E-10	2.1 E-10	1.4 E-10	1.1 E-10
Rh-107	0.362 h	F	0.100	8.9 E-11	0.050	5.9 E-11	2.6 E-11	1.7 E-11	1.0 E-11	9.0 E-12
		M	0.100	1.4 E-10	0.050	9.3 E-11	4.2 E-11	2.8 E-11	1.9 E-11	1.6 E-11
		S	0.100	1.5 E-10	0.050	9.7 E-11	4.4 E-11	2.9 E-11	1.9 E-11	1.7 E-11

Paladiu

Pd-100	3.63 d	F	0.050	3.9 E-09	0.005	3.0 E-09	1.5 E-09	9.7 E-10	5.8 E-10	4.7 E-10
		M	0.050	5.2 E-09	0.005	4.0 E-09	2.2 E-09	1.4 E-09	9.9 E-10	8.0 E-10
		S	0.050	5.3 E-09	0.005	4.1 E-09	2.2 E-09	1.5 E-09	1.0 E-09	8.5 E-10
Pd-101	8.27 h	F	0.050	3.6 E-10	0.005	2.9 E-10	1.4 E-10	8.6 E-11	4.9 E-11	3.9 E-11
		M	0.050	4.8 E-10	0.005	3.8 E-10	1.9 E-10	1.2 E-10	7.5 E-11	5.9 E-11
		S	0.050	5.0 E-10	0.005	3.9 E-10	2.0 E-10	1.2 E-10	7.8 E-11	6.2 E-11
Pd-103	17.0 d	F	0.050	9.7 E-10	0.005	6.5 E-10	3.0 E-10	1.9 E-10	1.1 E-10	8.9 E-11
		M	0.050	2.3 E-09	0.005	1.6 E-09	9.0 E-10	5.9 E-10	4.5 E-10	3.8 E-10
		S	0.050	2.5 E-09	0.005	1.8 E-09	1.0 E-09	6.8 E-10	5.3 E-10	4.5 E-10
Pd-107	6.50 E+06 a	F	0.050	2.6 E-10	0.005	1.8 E-10	8.2 E-11	5.2 E-11	3.1 E-11	2.5 E-11
		M	0.050	6.5 E-10	0.005	5.0 E-10	2.6 E-10	1.5 E-10	1.0 E-10	8.5 E-11
		S	0.050	2.2 E-09	0.005	2.0 E-09	1.3 E-09	7.8 E-10	6.2 E-10	5.9 E-10
Pd-109	13.4 h	F	0.050	1.5 E-09	0.005	9.9 E-10	4.2 E-10	2.6 E-10	1.4 E-10	1.2 E-10
		M	0.050	2.6 E-09	0.005	1.8 E-09	8.8 E-10	5.9 E-10	4.3 E-10	3.4 E-10
		S	0.050	2.7 E-09	0.005	1.9 E-09	9.3 E-10	6.3 E-10	4.6 E-10	3.7 E-10

Argint

Ag-102	0.215 h	F	0.100	1.2 E-10	0.050	8.6 E-11	4.2 E-11	2.6 E-11	1.5 E-11	1.3 E-11
		M	0.100	1.6 E-10	0.050	1.1 E-10	5.5 E-11	3.4 E-11	2.1 E-11	1.7 E-11
		S	0.020	1.6 E-10	0.010	1.2 E-10	5.6 E-11	3.5 E-11	2.2 E-11	1.8 E-11
Ag-103	1.09 h	F	0.100	1.4 E-10	0.050	1.0 E-10	4.9 E-11	3.0 E-11	1.8 E-11	1.4 E-11
		M	0.100	2.2 E-10	0.050	1.6 E-10	7.6 E-11	4.8 E-11	3.2 E-11	2.6 E-11
		S	0.020	2.3 E-10	0.010	1.6 E-10	7.9 E-11	5.1 E-11	3.3 E-11	2.7 E-11
Ag-104	1.15 h	F	0.100	2.3 E-10	0.050	1.9 E-10	9.8 E-11	5.9 E-11	3.5 E-11	2.8 E-11
		M	0.100	2.9 E-10	0.050	2.3 E-10	1.2 E-10	7.4 E-11	4.5 E-11	3.6 E-11
		S	0.020	2.9 E-10	0.010	2.4 E-10	1.2 E-10	7.6 E-11	4.6 E-11	3.7 E-11
Ag-104m	0.558 h	F	0.100	1.6 E-10	0.050	1.1 E-10	5.5 E-11	3.4 E-11	2.0 E-11	1.6 E-11
		M	0.100	2.3 E-10	0.050	1.6 E-10	7.7 E-11	4.8 E-11	3.0 E-11	2.5 E-11
		S	0.020	2.4 E-10	0.010	1.7 E-10	8.0 E-11	5.0 E-11	3.1 E-11	2.6 E-11

Ag-105	41.0 d	F	0.100	3.9 E-09	0.050	3.4 E-09	1.7 E-09	1.0 E-09	6.4 E-10	5.4 E-10
		M	0.100	4.5 E-09	0.050	3.5 E-09	2.0 E-09	1.3 E-09	9.0 E-10	7.3 E-10
		S	0.020	4.5 E-09	0.010	3.6 E-09	2.1 E-09	1.3 E-09	1.0 E-09	8.1 E-10
Ag-106	0.399 h	F	0.100	9.4 E-11	0.050	6.4 E-11	2.9 E-11	1.8 E-11	1.1 E-11	9.1 E-12
		M	0.100	1.4 E-10	0.050	9.5 E-11	4.4 E-11	2.8 E-11	1.8 E-11	1.5 E-11
		S	0.020	1.5 E-10	0.010	9.9 E-11	4.5 E-11	2.9 E-11	1.9 E-11	1.6 E-11
Ag-106m	8.41 d	F	0.100	7.7 E-09	0.050	6.1 E-09	3.2 E-09	2.1 E-09	1.3 E-09	1.1 E-09
		M	0.100	7.2 E-09	0.050	5.8 E-09	3.2 E-09	2.1 E-09	1.4 E-09	1.1 E-09
		S	0.020	7.0 E-09	0.010	5.7 E-09	3.2 E-09	2.1 E-09	1.4 E-09	1.1 E-09
Ag-108m	1.27 E+02 a	F	0.100	3.5 E-08	0.050	2.8 E-08	1.6 E-08	1.0 E-08	6.9 E-09	6.1 E-09
		M	0.100	3.3 E-08	0.050	2.7 E-08	1.7 E-08	1.1 E-08	8.6 E-09	7.4 E-09
		S	0.020	8.9 E-08	0.010	8.7 E-08	6.2 E-08	4.4 E-08	3.9 E-08	3.7 E-08
Ag-110m	250 d	F	0.100	3.5 E-08	0.050	2.8 E-08	1.5 E-08	9.7 E-09	6.3 E-09	5.5 E-09
		M	0.100	3.5 E-08	0.050	2.8 E-08	1.7 E-08	1.2 E-08	9.2 E-09	7.6 E-09
		S	0.020	4.6 E-08	0.010	4.1 E-08	2.6 E-08	1.8 E-08	1.5 E-08	1.2 E-08
Ag-111	7.45 d	F	0.100	4.8 E-09	0.050	3.2 E-09	1.4 E-09	8.8 E-10	4.8 E-10	4.0 E-10
		M	0.100	9.2 E-09	0.050	6.6 E-09	3.5 E-09	2.4 E-09	1.9 E-09	1.5 E-09
		S	0.020	9.9 E-09	0.010	7.1 E-09	3.8 E-09	2.7 E-09	2.1 E-09	1.7 E-09
Ag-112	3.12 h	F	0.100	9.8 E-10	0.050	6.4 E-10	2.8 E-10	1.7 E-10	9.1 E-11	7.6 E-11
		M	0.100	1.7 E-09	0.050	1.1 E-09	5.1 E-10	3.2 E-10	2.0 E-10	1.6 E-10
		S	0.020	1.8 E-09	0.010	1.2 E-09	5.4 E-10	3.4 E-10	2.1 E-10	1.7 E-10
Ag-115	0.333 h	F	0.100	1.6 E-10	0.050	1.0 E-10	4.6 E-11	2.9 E-11	1.7 E-11	1.5 E-11
		M	0.100	2.5 E-10	0.050	1.7 E-10	7.6 E-11	4.9 E-11	3.2 E-11	2.7 E-11
		S	0.020	2.7 E-10	0.010	1.7 E-10	8.0 E-11	5.2 E-11	3.4 E-11	2.9 E-11

Cadmiu

Cd-104	0.961 h	F	0.100	2.0 E-10	0.050	1.7 E-10	8.7 E-11	5.2 E-11	3.1 E-11	2.4 E-11
		M	0.100	2.6 E-10	0.050	2.1 E-10	1.1 E-10	6.9 E-11	4.2 E-11	3.4 E-11
		S	0.100	2.7 E-10	0.050	2.2 E-10	1.1 E-10	7.0 E-11	4.4 E-11	3.5 E-11
Cd-107	6.49 h	F	0.100	2.3 E-10	0.050	1.7 E-10	7.4 E-11	4.6 E-11	2.5 E-11	2.1 E-11
		M	0.100	5.2 E-10	0.050	3.7 E-10	2.0 E-10	1.3 E-10	8.8 E-11	8.3 E-11
		S	0.100	5.5 E-10	0.050	3.9 E-10	2.1 E-10	1.4 E-10	9.7 E-11	7.7 E-11
Cd-109	1.27 a	F	0.100	4.5 E-08	0.050	3.7 E-08	2.1 E-08	1.4 E-08	9.3 E-09	8.1 E-09
		M	0.100	3.0 E-08	0.050	2.3 E-08	1.4 E-08	9.5 E-09	7.8 E-09	6.6 E-09
		S	0.100	2.7 E-08	0.050	2.1 E-08	1.3 E-08	8.9 E-09	7.6 E-09	6.2 E-09
Cd-113	9.30 E+15 a	F	0.100	2.6 E-07	0.050	2.4 E-07	1.7 E-07	1.4 E-07	1.2 E-07	1.2 E-07
		M	0.100	1.2 E-07	0.050	1.0 E-07	7.6 E-08	6.1 E-08	5.7 E-08	5.5 E-08
		S	0.100	7.8 E-08	0.050	5.8 E-08	4.1 E-08	3.0 E-08	2.7 E-08	2.6 E-08

Cd-113m	13.6 a	F	0.100	3.0 E-07	0.050	2.7 E-07	1.8 E-07	1.3 E-07	1.1 E-07	1.1 E-07
		M	0.100	1.4 E-07	0.050	1.2 E-07	8.1 E-08	6.0 E-08	5.3 E-08	5.2 E-08
		S	0.100	1.1 E-07	0.050	8.4 E-08	5.5 E-08	3.9 E-08	3.3 E-08	3.1 E-08
Cd-115	2.23 d	F	0.100	4.0 E-09	0.050	2.6 E-09	1.2 E-09	7.5 E-10	4.3 E-10	3.5 E-10
		M	0.100	6.7 E-09	0.050	4.8 E-09	2.4 E-09	1.7 E-09	1.2 E-09	9.8 E-10
		S	0.100	7.2 E-09	0.050	5.1 E-09	2.6 E-09	1.8 E-09	1.3 E-09	1.1 E-09
Cd-115m	44.6 d	F	0.100	4.6 E-08	0.050	3.2 E-08	1.5 E-08	1.0 E-08	6.4 E-09	5.3 E-09
		M	0.100	4.0 E-08	0.050	2.5 E-08	1.4 E-08	9.4 E-09	7.3 E-09	6.2 E-09
		S	0.100	3.9 E-08	0.050	3.0 E-08	1.7 E-08	1.1 E-08	8.9 E-09	7.7 E-09
Cd-117	2.49 h	F	0.100	7.4 E-10	0.050	5.2 E-10	2.4 E-10	1.5 E-10	8.1 E-11	6.7 E-11
		M	0.100	1.3 E-09	0.050	9.3 E-10	4.5 E-10	2.9 E-10	2.0 E-10	1.6 E-10
		S	0.100	1.4 E-09	0.050	9.8 E-10	4.8 E-10	3.1 E-10	2.1 E-10	1.7 E-10
Cd-117m	3.36 h	F	0.100	8.9 E-10	0.050	6.7 E-10	3.3 E-10	2.0 E-10	1.1 E-10	9.4 E-11
		M	0.100	1.5 E-09	0.050	1.1 E-09	5.5 E-10	3.6 E-10	2.4 E-10	2.0 E-10

		S	0.100	1.5 E-09	0.050	1.1 E-09	5.7 E-10	3.8 E-10	2.6 E-10	2.1 E-10
Indiu										
In-109	4.20 h	F	0.040	2.6 E-10	0.020	2.1 E-10	1.0 E-10	6.3 E-11	3.6 E-11	2.9 E-11
		M	0.040	3.3 E-10	0.020	2.6 E-10	1.3 E-10	8.4 E-11	5.3 E-11	4.2 E-11
In-110	4.90 h	F	0.040	8.2 E-10	0.020	7.1 E-10	3.7 E-10	2.3 E-10	1.3 E-10	1.1 E-10
		M	0.040	9.9 E-10	0.020	8.3 E-10	4.4 E-10	2.7 E-10	1.6 E-10	1.3 E-10
In-110	1.15 h	F	0.040	3.0 E-10	0.020	2.1 E-10	9.9 E-11	6.0 E-11	3.5 E-11	2.8 E-11
		M	0.040	4.5 E-10	0.020	3.1 E-10	1.5 E-10	9.2 E-11	5.8 E-11	4.7 E-11
In-111	2.83 d	F	0.040	1.2 E-09	0.020	8.6 E-10	4.2 E-10	2.6 E-10	1.5 E-10	1.3 E-10
		M	0.040	1.5 E-09	0.020	1.2 E-09	6.2 E-10	4.1 E-10	2.9 E-10	2.3 E-10
In-112	0.240 h	F	0.040	4.4 E-11	0.020	3.0 E-11	1.3 E-11	8.7 E-12	5.4 E-12	4.7 E-12
		M	0.040	6.5 E-11	0.020	4.4 E-11	2.0 E-11	1.3 E-11	8.7 E-12	7.4 E-12
In-113m	1.66 h	F	0.040	1.0 E-10	0.020	7.0 E-11	3.2 E-11	2.0 E-11	1.2 E-11	9.7 E-12
		M	0.040	1.6 E-10	0.020	1.1 E-10	5.5 E-11	3.6 E-11	2.4 E-11	2.0 E-11
In-114m	49.5 d	F	0.040	1.2 E-07	0.020	7.7 E-08	3.4 E-08	1.9 E-08	1.1 E-08	9.3 E-09
		M	0.040	4.8 E-08	0.020	3.3 E-08	1.6 E-08	1.0 E-08	7.8 E-09	6.1 E-09
In-115	5.10 E+15 a	F	0.040	8.3 E-07	0.020	7.8 E-07	5.5 E-07	5.0 E-07	4.2 E-07	3.9 E-07
		M	0.040	3.0 E-07	0.020	2.8 E-07	2.1 E-07	1.9 E-07	1.7 E-07	1.6 E-07
In-115m	4.49 h	F	0.040	2.8 E-10	0.020	1.9 E-10	8.4 E-11	5.1 E-11	2.8 E-11	2.4 E-11
		M	0.040	4.7 E-10	0.020	3.3 E-10	1.6 E-10	1.0 E-10	7.2 E-11	5.9 E-11
In-116m	0.902 h	F	0.040	2.5 E-10	0.020	1.9 E-10	9.2 E-11	5.7 E-11	3.4 E-11	2.8 E-11
		M	0.040	3.6 E-10	0.020	2.7 E-10	1.3 E-10	8.5 E-11	5.6 E-11	4.5 E-11
In-117	0.730 h	F	0.040	1.4 E-10	0.020	9.7 E-11	4.5 E-11	2.8 E-11	1.7 E-11	1.5 E-11
		M	0.040	2.3 E-10	0.020	1.6 E-10	7.5 E-11	5.0 E-11	3.5 E-11	2.9 E-11
In-117m	1.94 h	F	0.040	3.4 E-10	0.020	2.3 E-10	1.0 E-10	6.2 E-11	3.5 E-11	2.9 E-11
		M	0.040	6.0 E-10	0.020	4.0 E-10	1.9 E-10	1.3 E-10	8.7 E-11	7.2 E-11
In-119m	0.300 h	F	0.040	1.2 E-10	0.020	7.3 E-11	3.1 E-11	2.0 E-11	1.2 E-11	1.0 E-11
		M	0.040	1.8 E-10	0.020	1.1 E-10	4.9 E-11	3.2 E-11	2.0 E-11	1.7 E-11
Staniu										
Sn-110	4.00 h	F	0.040	1.0 E-09	0.020	7.6 E-10	3.6 E-10	2.2 E-10	1.2 E-10	9.9 E-11
		M	0.040	1.5 E-09	0.020	1.1 E-09	5.1 E-10	3.2 E-10	1.9 E-10	1.6 E-10
Sn-111	0.588 h	F	0.040	7.7 E-11	0.020	5.4 E-11	2.6 E-11	1.6 E-11	9.4 E-12	7.8 E-12
		M	0.040	1.1 E-10	0.020	8.0 E-11	3.8 E-11	2.5 E-11	1.6 E-11	1.3 E-11
Sn-113	115 d	F	0.040	5.1 E-09	0.020	3.7 E-09	1.8 E-09	1.1 E-09	6.4 E-10	5.4 E-10
		M	0.040	1.3 E-08	0.020	1.0 E-08	5.8 E-09	4.0 E-09	3.2 E-09	2.7 E-09
Sn-117m	13.6 d	F	0.040	3.3 E-09	0.020	2.2 E-09	1.0 E-09	6.1 E-10	3.4 E-10	2.8 E-10
		M	0.040	1.0 E-08	0.020	7.7 E-09	4.6 E-09	3.4 E-09	3.1 E-09	2.4 E-09
Sn-119m	293 d	F	0.040	3.0 E-09	0.020	2.2 E-09	1.0 E-09	6.0 E-10	3.4 E-10	2.8 E-10
		M	0.040	1.0 E-08	0.020	7.9 E-09	4.7 E-09	3.1 E-09	2.6 E-09	2.2 E-09
Sn-121	1.13 d	F	0.040	7.7 E-10	0.020	5.0 E-10	2.2 E-10	1.3 E-10	7.0 E-11	6.0 E-11
		M	0.040	1.5 E-09	0.020	1.1 E-09	5.1 E-10	3.6 E-10	2.9 E-10	2.3 E-10
Sn-121m	55.0 a	F	0.040	6.9 E-09	0.020	5.4 E-09	2.8 E-09	1.6 E-09	9.4 E-10	8.0 E-10
		M	0.040	1.9 E-08	0.020	1.5 E-08	9.2 E-09	6.4 E-09	5.5 E-09	4.5 E-09
Sn-123	129 d	F	0.040	1.4 E-08	0.020	9.9 E-09	4.5 E-09	2.6 E-09	1.4 E-09	1.2 E-09
		M	0.040	4.0 E-08	0.020	3.1 E-08	1.8 E-08	1.2 E-08	9.5 E-09	8.1 E-09
Sn-123m	0.668 h	F	0.040	1.4 E-10	0.020	8.9 E-11	3.9 E-11	2.5 E-11	1.5 E-11	1.3 E-11
		M	0.040	2.3 E-10	0.020	1.5 E-10	7.0 E-11	4.6 E-11	3.2 E-11	2.7 E-11
Sn-125	9.64 d	F	0.040	1.2 E-08	0.020	8.0 E-09	3.5 E-09	2.0 E-09	1.1 E-09	8.9 E-10
		M	0.040	2.1 E-08	0.020	1.5 E-08	7.6 E-09	5.0 E-09	3.6 E-09	3.1 E-09
Sn-126	1.00 E+05 a	F	0.040	7.3 E-08	0.020	5.9 E-08	3.2 E-08	2.0 E-08	1.3 E-08	1.1 E-08
		M	0.040	1.2 E-07	0.020	1.0 E-07	6.2 E-08	4.1 E-08	3.3 E-08	2.8 E-08
Sn-127	2.10 h	F	0.040	6.6 E-10	0.020	4.7 E-10	2.3 E-10	1.4 E-10	7.9 E-11	6.5 E-11

		M	0.040	1.0 E-09	0.020	7.4 E-10	3.7 E-10	2.4 E-10	1.6 E-10	1.3 E-10
Sn-128	0.985 h	F	0.040	5.1 E-10	0.020	3.6 E-10	1.7 E-10	1.0 E-10	6.1 E-11	5.0 E-11
		M	0.040	8.0 E-10	0.020	5.5 E-10	2.7 E-10	1.7 E-10	1.1 E-10	9.2 E-11
Stibiu										
Sb-115	0.530 h	F	0.200	8.1 E-11	0.100	5.9 E-11	2.8 E-11	1.7 E-11	1.0 E-11	8.5 E-12
		M	0.020	1.2 E-10	0.010	8.3 E-11	4.0 E-11	2.5 E-11	1.6 E-11	1.3 E-11
		S	0.020	1.2 E-10	0.010	8.6 E-11	4.1 E-11	2.6 E-11	1.7 E-11	1.4 E-11
Sb-116	0.263 h	F	0.200	8.4 E-11	0.100	6.2 E-11	3.0 E-11	1.9 E-11	1.1 E-11	9.1 E-12
		M	0.020	1.1 E-10	0.010	8.2 E-11	4.0 E-11	2.5 E-11	1.5 E-11	1.3 E-11
		S	0.020	1.2 E-10	0.010	8.5 E-11	4.1 E-11	2.6 E-11	1.6 E-11	1.3 E-11
Sb-116m	1.00 h	F	0.200	2.6 E-10	0.100	2.1 E-10	1.1 E-10	6.6 E-11	4.0 E-11	3.2 E-11
		M	0.020	3.6 E-10	0.010	2.8 E-10	1.5 E-10	9.1 E-11	5.9 E-11	4.7 E-11
		S	0.020	3.7 E-10	0.010	2.9 E-10	1.5 E-10	9.4 E-11	6.1 E-11	4.9 E-11
Sb-117	2.80 h	F	0.200	7.7 E-11	0.100	6.0 E-11	2.9 E-11	1.8 E-11	1.0 E-11	8.5 E-12
		M	0.020	1.2 E-10	0.010	9.1 E-11	4.6 E-11	3.0 E-11	2.0 E-11	1.6 E-11
		S	0.020	1.3 E-10	0.010	9.5 E-11	4.8 E-11	3.1 E-11	2.2 E-11	1.7 E-11
Sb-118m	5.00 h	F	0.200	7.3 E-10	0.100	6.2 E-10	3.3 E-10	2.0 E-10	1.2 E-10	9.3 E-11
		M	0.020	9.3 E-10	0.010	7.6 E-10	4.0 E-10	2.5 E-10	1.5 E-10	1.2 E-10
		S	0.020	9.5 E-10	0.010	7.8 E-10	4.1 E-10	2.5 E-10	1.5 E-10	1.2 E-10
Sb-119	1.59 d	F	0.200	2.7 E-10	0.100	2.0 E-10	9.4 E-11	5.5 E-11	2.9 E-11	2.3 E-11
		M	0.020	4.0 E-10	0.010	2.8 E-10	1.3 E-10	7.9 E-11	4.4 E-11	3.5 E-11
		S	0.020	4.1 E-10	0.010	2.9 E-10	1.4 E-10	8.2 E-11	4.5 E-11	3.6 E-11
Sb-120	5.76 d	F	0.200	4.1 E-09	0.100	3.3 E-09	1.8 E-09	1.1 E-09	6.7 E-10	5.5 E-10
		M	0.020	6.3 E-09	0.010	5.0 E-09	2.8 E-09	1.8 E-09	1.3 E-09	1.0 E-09
		S	0.020	6.6 E-09	0.010	5.3 E-09	2.9 E-09	1.9 E-09	1.4 E-09	1.1 E-09
Sb-120	0.265 h	F	0.200	4.6 E-11	0.100	3.1 E-11	1.4 E-11	8.9 E-12	5.4 E-12	4.6 E-12
		M	0.020	6.6 E-11	0.010	4.4 E-11	2.0 E-11	1.3 E-11	8.3 E-12	7.0 E-12
		S	0.020	6.8 E-11	0.010	4.6 E-11	2.1 E-11	1.4 E-11	8.7 E-12	7.3 E-12
Sb-122	2.70 d	F	0.200	4.2 E-09	0.100	2.8 E-09	1.4 E-09	8.4 E-10	4.4 E-10	3.6 E-10
		M	0.020	8.3 E-09	0.010	5.7 E-09	2.8 E-09	1.8 E-09	1.3 E-09	1.0 E-09
		S	0.020	8.8 E-09	0.010	6.1 E-09	3.0 E-09	2.0 E-09	1.4 E-09	1.1 E-09
Sb-124	60.2 d	F	0.200	1.2 E-08	0.100	8.8 E-09	4.3 E-09	2.6 E-09	1.6 E-09	1.3 E-09
		M	0.020	3.1 E-08	0.010	2.4 E-08	1.4 E-08	9.6 E-09	7.7 E-09	6.4 E-09
		S	0.020	3.9 E-08	0.010	3.1 E-08	1.8 E-08	1.3 E-08	1.0 E-08	8.6 E-09
Sb-124m	0.337 h	F	0.200	2.7 E-11	0.100	1.9 E-11	9.0 E-12	5.6 E-12	3.4 E-12	2.8 E-12
		M	0.020	4.3 E-11	0.010	3.1 E-11	1.5 E-11	9.6 E-12	6.5 E-12	5.4 E-12
		S	0.020	4.6 E-11	0.010	3.3 E-11	1.6 E-11	1.0 E-11	7.2 E-12	5.9 E-12
Sb-125	2.77 a	F	0.200	8.7 E-09	0.100	6.8 E-09	3.7 E-09	2.3 E-09	1.5 E-09	1.4 E-09
		M	0.020	2.0 E-08	0.010	1.6 E-08	1.0 E-08	6.8 E-09	5.8 E-09	4.8 E-09
		S	0.020	4.2 E-08	0.010	3.8 E-08	2.4 E-08	1.6 E-08	1.4 E-08	1.2 E-08
Sb-126	12.4 d	F	0.200	8.8 E-09	0.100	6.6 E-09	3.3 E-09	2.1 E-09	1.2 E-09	1.0 E-09
		M	0.020	1.7 E-08	0.010	1.3 E-08	7.4 E-09	5.1 E-09	3.5 E-09	2.8 E-09
		S	0.020	1.9 E-08	0.010	1.5 E-08	8.2 E-09	5.0 E-09	4.0 E-09	3.2 E-09
Sb-126m	0.317 h	F	0.200	1.2 E-10	0.100	8.2 E-11	3.8 E-11	2.4 E-11	1.5 E-11	1.2 E-11
		M	0.020	1.7 E-10	0.010	1.2 E-10	5.5 E-11	3.5 E-11	2.3 E-11	1.9 E-11
		S	0.020	1.8 E-10	0.010	1.2 E-10	5.7 E-11	3.7 E-11	2.4 E-11	2.0 E-11
Sb-127	3.85 d	F	0.200	5.1 E-09	0.100	3.5 E-09	1.6 E-09	9.7 E-10	5.2 E-10	4.3 E-10
		M	0.020	1.0 E-08	0.010	7.3 E-09	3.9 E-09	2.7 E-09	2.1 E-09	1.7 E-09
		S	0.020	1.1 E-08	0.010	7.9 E-09	4.2 E-09	3.0 E-09	2.3 E-09	1.9 E-09
Sb-128	9.01 h	F	0.200	2.1 E-09	0.100	1.7 E-09	8.3 E-10	5.1 E-10	2.9 E-10	2.3 E-10
		M	0.020	3.3 E-09	0.010	2.5 E-09	1.2 E-09	7.9 E-10	5.0 E-10	4.0 E-10
		S	0.020	3.4 E-09	0.010	2.6 E-09	1.3 E-09	8.3 E-10	5.2 E-10	4.2 E-10
Sb-128	0.173 h	F	0.200	9.8 E-11	0.100	6.9 E-11	3.2 E-11	2.0 E-11	1.2 E-11	1.0 E-11

		M	0.020	1.3 E-10	0.010	9.2 E-11	4.3 E-11	2.7 E-11	1.7 E-11	1.4 E-11
		S	0.020	1.4 E-10	0.010	9.4 E-11	4.4 E-11	2.8 E-11	1.8 E-11	1.5 E-11
Sb-129	4.32 h	F	0.200	1.1 E-09	0.100	8.2 E-10	3.8 E-10	2.3 E-10	1.3 E-10	1.0 E-10
		M	0.020	2.0 E-09	0.010	1.4 E-09	6.8 E-10	4.4 E-10	2.9 E-10	2.3 E-10
		S	0.020	2.1 E-09	0.010	1.5 E-09	7.2 E-10	4.6 E-10	3.0 E-10	2.5 E-10
Sb-130	0.667 h	F	0.200	3.0 E-10	0.100	2.2 E-10	1.1 E-10	6.6 E-11	4.0 E-11	3.3 E-11
		M	0.020	4.5 E-10	0.010	3.2 E-10	1.6 E-10	9.8 E-11	6.3 E-11	5.1 E-11
		S	0.020	4.6 E-10	0.010	3.3 E-10	1.6 E-10	1.0 E-10	6.5 E-11	5.3 E-11
Sb-131	0.383 h	F	0.200	3.5 E-10	0.100	2.8 E-10	1.4 E-10	7.7 E-11	4.6 E-11	3.5 E-11
		M	0.020	3.9 E-10	0.010	2.6 E-10	1.3 E-10	8.0 E-11	5.3 E-11	4.4 E-11
		S	0.020	3.8 E-10	0.010	2.6 E-10	1.2 E-10	7.9 E-11	5.3 E-11	4.4 E-11
Telur										
Te-116	2.49 h	F	0.600	5.3 E-10	0.300	4.2 E-10	2.1 E-10	1.3 E-10	7.2 E-11	5.8 E-11
		M	0.200	8.6 E-10	0.100	6.4 E-10	3.2 E-10	2.0 E-10	1.3 E-10	1.0 E-10
		S	0.020	9.1 E-10	0.010	6.7 E-10	3.3 E-10	2.1 E-10	1.4 E-10	1.1 E-10
Te-121	17.0 d	F	0.600	1.7 E-09	0.300	1.4 E-09	7.2 E-10	4.6 E-10	2.9 E-10	2.4 E-10
		M	0.200	2.3 E-09	0.100	1.9 E-09	1.0 E-09	6.8 E-10	4.7 E-10	3.8 E-10
		S	0.020	2.4 E-09	0.010	2.0 E-09	1.1 E-09	7.2 E-10	5.1 E-10	4.1 E-10
Te-121m	154 d	F	0.600	1.4 E-08	0.300	1.0 E-08	5.3 E-09	3.3 E-09	2.1 E-09	1.8 E-09
		M	0.200	1.9 E-08	0.100	1.5 E-08	8.8 E-09	6.1 E-09	5.1 E-09	4.2 E-09
		S	0.020	2.3 E-08	0.010	1.9 E-08	1.2 E-08	8.1 E-09	6.9 E-09	5.7 E-09
Te-123	1.00 E+13 a	F	0.600	1.1 E-08	0.300	9.1 E-09	6.2 E-09	4.8 E-09	4.0 E-09	3.9 E-09
		M	0.200	5.6 E-09	0.100	4.4 E-09	3.0 E-09	2.3 E-09	2.0 E-09	1.9 E-09
		S	0.020	5.3 E-09	0.010	5.0 E-09	3.5 E-09	2.4 E-09	2.1 E-09	2.0 E-09
Te-123m	120 d	F	0.600	9.8 E-09	0.300	6.8 E-09	3.4 E-09	1.9 E-09	1.1 E-09	9.5 E-10
		M	0.200	1.8 E-08	0.100	1.3 E-08	8.0 E-09	5.7 E-09	5.0 E-09	4.0 E-09
		S	0.020	2.0 E-08	0.010	1.6 E-08	9.8 E-09	7.1 E-09	6.3 E-09	5.1 E-09
Te-125m	58.0 d	F	0.600	6.2 E-09	0.300	4.2 E-09	2.0 E-09	1.1 E-09	6.1 E-10	5.1 E-10
		M	0.200	1.5 E-08	0.100	1.1 E-08	6.6 E-09	4.8 E-09	4.3 E-09	3.4 E-09
		S	0.020	1.7 E-08	0.010	1.3 E-08	7.8 E-09	5.8 E-09	5.3 E-09	4.2 E-09
Te-127	9.35 h	F	0.600	4.3 E-10	0.300	3.2 E-10	1.4 E-10	8.5 E-11	4.5 E-11	3.9 E-11
		M	0.200	1.0 E-09	0.100	7.3 E-10	3.6 E-10	2.4 E-10	1.6 E-10	1.3 E-10
		S	0.020	1.2 E-09	0.010	7.9 E-10	3.9 E-10	2.6 E-10	1.7 E-10	1.4 E-10
Te-127m	109 d	F	0.600	2.1 E-08	0.300	1.4 E-08	6.5 E-09	3.5 E-09	2.0 E-09	1.5 E-09
		M	0.200	3.5 E-08	0.100	2.6 E-08	1.5 E-08	1.1 E-08	9.2 E-09	7.4 E-09
		S	0.020	4.1 E-08	0.010	3.3 E-08	2.0 E-08	1.4 E-08	1.2 E-08	9.8 E-09
Te-129	1.16 h	F	0.600	1.8 E-10	0.300	1.2 E-10	5.1 E-11	3.2 E-11	1.9 E-11	1.6 E-11
		M	0.200	3.3 E-10	0.100	2.2 E-10	9.9 E-11	6.5 E-11	4.4 E-11	3.7 E-11
		S	0.020	3.5 E-10	0.010	2.3 E-10	1.0 E-10	6.9 E-11	4.7 E-11	3.9 E-11
Te-129m	33.6 d	F	0.600	2.0 E-08	0.300	1.3 E-08	5.8 E-09	3.1 E-09	1.7 E-09	1.3 E-09
		M	0.200	3.5 E-08	0.100	2.6 E-08	1.4 E-08	9.8 E-09	8.0 E-09	6.6 E-09
		S	0.020	3.8 E-08	0.010	2.9 E-08	1.7 E-08	1.2 E-08	9.6 E-09	7.9 E-09
Te-131	0.417 h	F	0.600	2.3 E-10	0.300	2.0 E-10	9.9 E-11	5.3 E-11	3.3 E-11	2.3 E-11
		M	0.200	2.6 E-10	0.100	1.7 E-10	8.1 E-11	5.2 E-11	3.5 E-11	2.8 E-11
		S	0.020	2.4 E-10	0.010	1.6 E-10	7.4 E-11	4.9 E-11	3.3 E-11	2.8 E-11
Te-131m	1.25 d	F	0.600	8.7 E-09	0.300	7.6 E-09	3.9 E-09	2.0 E-09	1.2 E-09	8.6 E-10
		M	0.200	7.9 E-09	0.100	5.8 E-09	3.0 E-09	1.9 E-09	1.2 E-09	9.4 E-10
		S	0.020	7.0 E-09	0.010	5.1 E-09	2.6 E-09	1.8 E-09	1.1 E-09	9.1 E-10
Te-132	3.26 d	F	0.600	2.2 E-08	0.300	1.8 E-08	8.5 E-09	4.2 E-09	2.6 E-09	1.8 E-09
		M	0.200	1.6 E-08	0.100	1.3 E-08	6.4 E-09	4.0 E-09	2.6 E-09	2.0 E-09
		S	0.020	1.5 E-08	0.010	1.1 E-08	5.8 E-09	3.8 E-09	2.5 E-09	2.0 E-09
Te-133	0.207 h	F	0.600	2.4 E-10	0.300	2.1 E-10	9.6 E-11	4.6 E-11	2.8 E-11	1.9 E-11
		M	0.200	2.0 E-10	0.100	1.3 E-10	6.1 E-11	3.8 E-11	2.4 E-11	2.0 E-11

		S	0.020	1.7 E-10	0.010	1.2 E-10	5.4 E-11	3.5 E-11	2.2 E-11	1.9 E-11
Te-133m	0.923 h	F	0.600	1.0 E-09	0.300	8.9 E-10	4.1 E-10	2.0 E-10	1.2 E-10	8.1 E-11
		M	0.200	8.5 E-10	0.100	5.8 E-10	2.8 E-10	1.7 E-10	1.1 E-10	8.7 E-11
		S	0.020	7.4 E-10	0.010	5.1 E-10	2.5 E-10	1.6 E-10	1.0 E-10	8.4 E-11
Te-134	0.696 h	F	0.600	4.7 E-10	0.300	3.7 E-10	1.8 E-10	1.0 E-10	6.0 E-11	4.7 E-11
		M	0.200	5.5 E-10	0.100	3.9 E-10	1.9 E-10	1.2 E-10	8.1 E-11	6.6 E-11
		S	0.020	5.6 E-10	0.010	4.0 E-10	1.9 E-10	1.3 E-10	8.4 E-11	6.8 E-11
Iod										
I-120	1.35 h	F	1.000	1.3 E-09	1.000	1.0 E-09	4.8 E-10	2.3 E-10	1.4 E-10	1.0 E-10
		M	0.200	1.1 E-09	0.100	7.3 E-10	3.4 E-10	2.1 E-10	1.3 E-10	1.0 E-10
		S	0.020	1.0 E-09	0.010	6.9 E-10	3.2 E-10	2.0 E-10	1.2 E-10	1.0 E-10
I-120m	0.883 h	F	1.000	8.6 E-10	1.000	6.9 E-10	3.3 E-10	1.8 E-10	1.1 E-10	8.2 E-11
		M	0.200	8.2 E-10	0.100	5.9 E-10	2.9 E-10	1.8 E-10	1.1 E-10	8.7 E-11
		S	0.020	8.2 E-10	0.010	5.8 E-10	2.8 E-10	1.8 E-10	1.1 E-10	8.8 E-11
I-121	2.12 h	F	1.000	2.3 E-10	1.000	2.1 E-10	1.1 E-10	6.0 E-11	3.8 E-11	2.7 E-11
		M	0.200	2.1 E-10	0.100	1.5 E-10	7.8 E-11	4.9 E-11	3.2 E-11	2.5 E-11
		S	0.020	1.9 E-10	0.010	1.4 E-10	7.0 E-11	4.5 E-11	3.0 E-11	2.4 E-11
I-123	13.2 h	F	1.000	8.7 E-10	1.000	7.9 E-10	3.8 E-10	1.8 E-10	1.1 E-10	7.4 E-11
		M	0.200	5.3 E-10	0.100	3.9 E-10	2.0 E-10	1.2 E-10	8.2 E-11	6.4 E-11
		S	0.020	4.3 E-10	0.010	3.2 E-10	1.7 E-10	1.1 E-10	7.6 E-11	6.0 E-11
I-124	4.18 d	F	1.000	4.7 E-08	1.000	4.5 E-08	2.2 E-08	1.1 E-08	6.7 E-09	4.4 E-09
		M	0.200	1.4 E-08	0.100	9.3 E-09	4.6 E-09	2.5 E-09	1.6 E-09	1.2 E-09
		S	0.020	6.2 E-09	0.010	4.4 E-09	2.2 E-09	1.4 E-09	9.4 E-10	7.7 E-10
I-125	60.1 d	F	1.000	2.0 E-08	1.000	2.3 E-08	1.5 E-08	1.1 E-08	7.2 E-09	5.1 E-09
		M	0.200	6.9 E-09	0.100	5.6 E-09	3.6 E-09	2.6 E-09	1.8 E-09	1.4 E-09
		S	0.020	2.4 E-09	0.010	1.8 E-09	1.0 E-09	6.7 E-10	4.8 E-10	3.8 E-10
I-126	13.0 d	F	1.000	8.1 E-08	1.000	8.3 E-08	4.5 E-08	2.4 E-08	1.5 E-08	9.8 E-09
		M	0.200	2.4 E-08	0.100	1.7 E-08	9.5 E-09	5.5 E-09	3.8 E-09	2.7 E-09
		S	0.020	8.3 E-09	0.010	5.9 E-09	3.3 E-09	2.2 E-09	1.8 E-09	1.4 E-09
I-128	0.416 h	F	1.000	1.5 E-10	1.000	1.1 E-10	4.7 E-11	2.7 E-11	1.6 E-11	1.3 E-11
		M	0.200	1.9 E-10	0.100	1.2 E-10	5.3 E-11	3.4 E-11	2.2 E-11	1.9 E-11
		S	0.020	1.9 E-10	0.010	1.2 E-10	5.4 E-11	3.5 E-11	2.3 E-11	2.0 E-11
I-129	1.57 E+07 a	F	1.000	7.2 E-08	1.000	8.6 E-08	6.1 E-08	6.7 E-08	4.6 E-08	3.6 E-08
		M	0.200	3.6 E-08	0.100	3.3 E-08	2.4 E-08	2.4 E-08	1.9 E-08	1.5 E-08
		S	0.020	2.9 E-08	0.010	2.6 E-08	1.8 E-08	1.3 E-08	1.1 E-08	9.8 E-09
I-130	12.4 h	F	1.000	8.2 E-09	1.000	7.4 E-09	3.5 E-09	1.6 E-09	1.0 E-09	6.7 E-10
		M	0.200	4.3 E-09	0.100	3.1 E-09	1.5 E-09	9.2 E-10	5.8 E-10	4.5 E-10
		S	0.020	3.3 E-09	0.010	2.4 E-09	1.2 E-09	7.9 E-10	5.1 E-10	4.1 E-10
I-131	8.04 d	F	1.000	7.2 E-08	1.000	7.2 E-08	3.7 E-08	1.9 E-08	1.1 E-08	7.4 E-09
		M	0.200	2.2 E-08	0.100	1.5 E-08	8.2 E-09	4.7 E-09	3.4 E-09	2.4 E-09
		S	0.020	8.8 E-09	0.010	6.2 E-09	3.5 E-09	2.4 E-09	2.0 E-09	1.6 E-09
I-132	2.30 h	F	1.000	1.1 E-09	1.000	9.6 E-10	4.5 E-10	2.2 E-10	1.3 E-10	9.4 E-11
		M	0.200	9.9 E-10	0.100	7.3 E-10	3.6 E-10	2.2 E-10	1.4 E-10	1.1 E-10
		S	0.020	9.3 E-10	0.010	6.8 E-10	3.4 E-10	2.1 E-10	1.4 E-10	1.1 E-10
I-132m	1.39 h	F	1.000	9.6 E-10	1.000	8.4 E-10	4.0 E-10	1.9 E-10	1.2 E-10	7.9 E-11
		M	0.200	7.2 E-10	0.100	5.3 E-10	2.6 E-10	1.6 E-10	1.1 E-10	8.7 E-11
		S	0.020	6.6 E-10	0.010	4.8 E-10	2.4 E-10	1.6 E-10	1.1 E-10	8.5 E-11
I-133	20.8 h	F	1.000	1.9 E-08	1.000	1.8 E-08	8.3 E-09	3.8 E-09	2.2 E-09	1.5 E-09
		M	0.200	6.6 E-09	0.100	4.4 E-09	2.1 E-09	1.2 E-09	7.4 E-10	5.5 E-10
		S	0.020	3.8 E-09	0.010	2.9 E-09	1.4 E-09	9.0 E-10	5.3 E-10	4.3 E-10
I-134	0.876 h	F	1.000	4.6 E-10	1.000	3.7 E-10	1.8 E-10	9.7 E-11	5.9 E-11	4.5 E-11
		M	0.200	4.8 E-10	0.100	3.4 E-10	1.7 E-10	1.0 E-10	6.7 E-11	5.4 E-11
		S	0.020	4.8 E-10	0.010	3.4 E-10	1.7 E-10	1.1 E-10	6.8 E-11	5.5 E-11

I-135	6.61 h	F	1.000	4.1 E-09	1.000	3.7 E-09	1.7 E-09	7.9 E-10	4.8 E-10	3.2 E-10
		M	0.200	2.2 E-09	0.100	1.6 E-09	7.8 E-10	4.7 E-10	3.0 E-10	2.4 E-10
		S	0.020	1.8 E-09	0.010	1.3 E-09	6.5 E-10	4.2 E-10	2.7 E-10	2.2 E-10
Cesiu										
Cs-125	0.750 h	F	1.000	1.2 E-10	1.000	8.3 E-11	3.9 E-11	2.4 E-11	1.4 E-11	1.2 E-11
		M	0.200	2.0 E-10	0.100	1.4 E-10	6.5 E-11	4.2 E-11	2.7 E-11	2.2 E-11
		S	0.020	2.1 E-10	0.010	1.4 E-10	6.8 E-11	4.4 E-11	2.8 E-11	2.3 E-11
Cs-127	6.25 h	F	1.000	1.6 E-10	1.000	1.3 E-10	6.9 E-11	4.2 E-11	2.5 E-11	2.0 E-11
		M	0.200	2.8 E-10	0.100	2.2 E-10	1.1 E-10	7.3 E-11	4.6 E-11	3.6 E-11
		S	0.020	3.0 E-10	0.010	2.3 E-10	1.2 E-10	7.6 E-11	4.8 E-11	3.8 E-11
Cs-129	1.34 d	F	1.000	3.4 E-10	1.000	2.8 E-10	1.4 E-10	8.7 E-11	5.2 E-11	4.2 E-11
		M	0.200	5.7 E-10	0.100	4.6 E-10	2.4 E-10	1.5 E-10	9.1 E-11	7.3 E-11
		S	0.020	6.3 E-10	0.010	4.9 E-10	2.5 E-10	1.6 E-10	9.7 E-11	7.7 E-11
Cs-130	0.498 h	F	1.000	8.3 E-11	1.000	5.6 E-11	2.5 E-11	1.6 E-11	9.4 E-12	7.8 E-12
		M	0.200	1.3 E-10	0.100	8.7 E-11	4.0 E-11	2.5 E-11	1.6 E-11	1.4 E-11
		S	0.020	1.4 E-10	0.010	9.0 E-11	4.1 E-11	2.6 E-11	1.7 E-11	1.4 E-11
Cs-131	9.69 d	F	1.000	2.4 E-10	1.000	1.7 E-10	8.4 E-11	5.3 E-11	3.2 E-11	2.7 E-11
		M	0.200	3.5 E-10	0.100	2.6 E-10	1.4 E-10	8.5 E-11	5.5 E-11	4.4 E-11
		S	0.020	3.8 E-10	0.010	2.8 E-10	1.4 E-10	9.1 E-11	5.9 E-11	4.7 E-11
Cs-132	6.48 d	F	1.000	1.5 E-09	1.000	1.2 E-09	6.4 E-10	4.1 E-10	2.7 E-10	2.3 E-10
		M	0.200	1.9 E-09	0.100	1.5 E-09	8.4 E-10	5.4 E-10	3.7 E-10	2.9 E-10
		S	0.020	2.0 E-09	0.010	1.6 E-09	8.7 E-10	5.6 E-10	3.8 E-10	3.0 E-10
Cs-134	2.06 a	F	1.000	1.1 E-08	1.000	7.3 E-09	5.2 E-09	5.3 E-09	6.3 E-09	6.6 E-09
		M	0.200	3.2 E-08	0.100	2.6 E-08	1.6 E-08	1.2 E-08	1.1 E-08	9.1 E-09
		S	0.020	7.0 E-08	0.010	6.3 E-08	4.1 E-08	2.8 E-08	2.3 E-08	2.0 E-08
Cs-134m	2.90 h	F	1.000	1.3 E-10	1.000	8.6 E-11	3.8 E-11	2.5 E-11	1.6 E-11	1.4 E-11
		M	0.200	3.3 E-10	0.100	2.3 E-10	1.2 E-10	8.3 E-11	6.6 E-11	5.4 E-11
		S	0.020	3.6 E-10	0.010	2.5 E-10	1.3 E-10	9.2 E-11	7.4 E-11	6.0 E-11
Cs-135	2.30 E+06 a	F	1.000	1.7 E-09	1.000	9.9 E-10	6.2 E-10	6.1 E-10	6.8 E-10	6.9 E-10
		M	0.200	1.2 E-08	0.100	9.3 E-09	5.7 E-09	4.1 E-09	3.8 E-09	3.1 E-09
		S	0.020	2.7 E-08	0.010	2.4 E-08	1.6 E-08	1.1 E-08	9.5 E-09	8.6 E-09
Cs-135m	0.883 h	F	1.000	9.2 E-11	1.000	7.8 E-11	4.1 E-11	2.4 E-11	1.5 E-11	1.2 E-11
		M	0.200	1.2 E-10	0.100	9.9 E-11	5.2 E-11	3.2 E-11	1.9 E-11	1.5 E-11
		S	0.020	1.2 E-10	0.010	1.0 E-10	5.3 E-11	3.3 E-11	2.0 E-11	1.6 E-11
Cs-136	13.1 d	F	1.000	7.3 E-09	1.000	5.2 E-09	2.9 E-09	2.0 E-09	1.4 E-09	1.2 E-09
		M	0.200	1.3 E-08	0.100	1.0 E-08	6.0 E-09	3.7 E-09	3.1 E-09	2.5 E-09
		S	0.020	1.5 E-08	0.010	1.1 E-08	5.7 E-09	4.1 E-09	3.5 E-09	2.8 E-09
Cs-137	30.0 a	F	1.000	8.8 E-09	1.000	5.4 E-09	3.6 E-09	3.7 E-09	4.4 E-09	4.6 E-09
		M	0.200	3.6 E-08	0.100	2.9 E-08	1.8 E-08	1.3 E-08	1.1 E-08	9.7 E-09
		S	0.020	1.1 E-07	0.010	1.0 E-07	7.0 E-08	4.8 E-08	4.2 E-08	3.9 E-08
Cs-138	0.536 h	F	1.000	2.6 E-10	1.000	1.8 E-10	8.1 E-11	5.0 E-11	2.9 E-11	2.4 E-11
		M	0.200	4.0 E-10	0.100	2.7 E-10	1.3 E-10	7.8 E-11	4.9 E-11	4.1 E-11
		S	0.020	4.2 E-10	0.010	2.8 E-10	1.3 E-10	8.2 E-11	5.1 E-11	4.3 E-11
Bariu (*)										
Ba-126	1.61 h	F	0.600	6.7 E-10	0.200	5.2 E-10	2.4 E-10	1.4 E-10	6.9 E-11	7.4 E-11
		M	0.200	1.0 E-09	0.100	7.0 E-10	3.2 E-10	2.0 E-10	1.2 E-10	1.0 E-10
		S	0.020	1.1 E-09	0.010	7.2 E-10	3.3 E-10	2.1 E-10	1.3 E-10	1.1 E-10
Ba-128	2.43 d	F	0.600	5.9 E-09	0.200	5.4 E-09	2.5 E-09	1.4 E-09	7.4 E-10	7.6 E-10
		M	0.200	1.1 E-08	0.100	7.8 E-09	3.7 E-09	2.4 E-09	1.5 E-09	1.3 E-09
		S	0.020	1.2 E-08	0.010	8.3 E-09	4.0 E-09	2.6 E-09	1.6 E-09	1.4 E-09
Ba-131	11.8 d	F	0.600	2.1 E-09	0.200	1.4 E-09	7.1 E-10	4.7 E-10	3.1 E-10	2.2 E-10
		M	0.200	3.7 E-09	0.100	3.1 E-09	1.6 E-09	1.1 E-09	9.7 E-10	7.6 E-10
		S	0.020	4.0 E-09	0.010	3.0 E-09	1.8 E-09	1.3 E-09	1.1 E-09	8.7 E-10

Ba-131m	0.243 h	F	0.600	2.7 E-11	0.200	2.1 E-11	1.0 E-11	6.7 E-12	4.7 E-12	4.0 E-12
		M	0.200	4.8 E-11	0.100	3.3 E-11	1.7 E-11	1.2 E-11	9.0 E-12	7.4 E-12
		S	0.020	5.0 E-11	0.010	3.5 E-11	1.8 E-11	1.2 E-11	9.5 E-12	7.8 E-12
Ba-133	10.7 a	F	0.600	1.1 E-08	0.200	4.5 E-09	2.6 E-09	3.7 E-09	6.0 E-09	1.5 E-09
		M	0.200	1.5 E-08	0.100	1.0 E-08	6.4 E-09	5.1 E-09	5.5 E-09	3.1 E-09
		S	0.020	3.2 E-08	0.010	2.9 E-08	2.0 E-08	1.3 E-08	1.1 E-08	1.0 E-08
Ba-133m	1.62 d	F	0.600	1.4 E-09	0.200	1.1 E-09	4.9 E-10	3.1 E-10	1.5 E-10	1.8 E-10
		M	0.200	3.0 E-09	0.100	2.2 E-09	1.0 E-09	6.9 E-10	5.2 E-10	4.2 E-10
		S	0.020	3.1 E-09	0.010	2.4 E-09	1.1 E-09	7.6 E-10	5.8 E-10	4.6 E-10
Ba-135m	1.20 d	F	0.600	1.1 E-09	0.200	1.0 E-09	4.6 E-10	2.5 E-10	1.2 E-10	1.4 E-10
		M	0.200	2.4 E-09	0.100	1.8 E-09	8.9 E-10	5.4 E-10	4.1 E-10	3.3 E-10
		S	0.020	2.7 E-09	0.010	1.9 E-09	8.6 E-10	5.9 E-10	4.5 E-10	3.6 E-10
Ba-139	1.38 h	F	0.600	3.3 E-10	0.200	2.4 E-10	1.1 E-10	6.0 E-11	3.1 E-11	3.4 E-11
		M	0.200	5.4 E-10	0.100	3.5 E-10	1.6 E-10	1.0 E-10	6.6 E-11	5.6 E-11
		S	0.020	5.7 E-10	0.010	3.6 E-10	1.6 E-10	1.1 E-10	7.0 E-11	5.9 E-11
Ba-140	12.7 d	F	0.600	1.4 E-08	0.200	7.8 E-09	3.6 E-09	2.4 E-09	1.6 E-09	1.0 E-09
		M	0.200	2.7 E-08	0.100	2.0 E-08	1.1 E-08	7.6 E-09	6.2 E-09	5.1 E-09
		S	0.020	2.9 E-08	0.010	2.2 E-08	1.2 E-08	8.6 E-09	7.1 E-09	5.8 E-09
Ba-141	0.305 h	F	0.600	1.9 E-10	0.200	1.4 E-10	6.4 E-11	3.8 E-11	2.1 E-11	2.1 E-11
		M	0.200	3.0 E-10	0.100	2.0 E-10	9.3 E-11	5.9 E-11	3.8 E-11	3.2 E-11
		S	0.020	3.2 E-10	0.010	2.1 E-10	9.7 E-11	6.2 E-11	4.0 E-11	3.4 E-11
Ba-142	0.177 h	F	0.600	1.3 E-10	0.200	9.6 E-11	4.5 E-11	2.7 E-11	1.6 E-11	1.5 E-11
		M	0.200	1.8 E-10	0.100	1.3 E-10	6.1 E-11	3.9 E-11	2.5 E-11	2.1 E-11
		S	0.020	1.9 E-10	0.010	1.3 E-10	6.2 E-11	4.0 E-11	2.6 E-11	2.2 E-11
Lantan										
La-131	0.983 h	F	0.005	1.2 E-10	5.0 E-04	8.7 E-11	4.2 E-11	2.6 E-11	1.5 E-11	1.3 E-11
		M	0.005	1.8 E-10	5.0 E-04	1.3 E-10	6.4 E-11	4.1 E-11	2.8 E-11	2.3 E-11
La-132	4.80 h	F	0.005	1.0 E-09	5.0 E-04	7.7 E-10	3.7 E-10	2.2 E-10	1.2 E-10	1.0 E-10
		M	0.005	1.5 E-09	5.0 E-04	1.1 E-09	5.4 E-10	3.4 E-10	2.0 E-10	1.6 E-10
La-135	19.5 h	F	0.005	1.0 E-10	5.0 E-04	7.7 E-11	3.8 E-11	2.3 E-11	1.3 E-11	1.0 E-11
		M	0.005	1.3 E-10	5.0 E-04	1.0 E-10	4.9 E-11	3.0 E-11	1.7 E-11	1.4 E-11
La-137	6.00 E+04 a	F	0.005	2.5 E-08	5.0 E-04	2.3 E-08	1.5 E-08	1.1 E-08	8.9 E-09	8.7 E-09
		M	0.005	8.6 E-09	5.0 E-04	8.1 E-09	5.6 E-09	4.0 E-09	3.6 E-09	3.6 E-09
La-138	1.35 E+11 a	F	0.005	3.7 E-07	5.0 E-04	3.5 E-07	2.4 E-07	1.8 E-07	1.6 E-07	1.5 E-07
		M	0.005	1.3 E-07	5.0 E-04	1.2 E-07	9.1 E-08	6.8 E-08	6.4 E-08	6.4 E-08
La-140	1.68 d	F	0.005	5.8 E-09	5.0 E-04	4.2 E-09	2.0 E-09	1.2 E-09	6.9 E-10	5.7 E-10
		M	0.005	8.8 E-09	5.0 E-04	6.3 E-09	3.1 E-09	2.0 E-09	1.3 E-09	1.1 E-09
La-141	3.93 h	F	0.005	8.6 E-10	5.0 E-04	5.5 E-10	2.3 E-10	1.4 E-10	7.5 E-11	6.3 E-11
		M	0.005	1.4 E-09	5.0 E-04	9.3 E-10	4.3 E-10	2.8 E-10	1.8 E-10	1.5 E-10
La-142	1.54 h	F	0.005	5.3 E-10	5.0 E-04	3.8 E-10	1.8 E-10	1.1 E-10	6.3 E-11	5.2 E-11
		M	0.005	8.1 E-10	5.0 E-04	5.7 E-10	2.7 E-10	1.7 E-10	1.1 E-10	8.9 E-11
La-143	0.237 h	F	0.005	1.4 E-10	5.0 E-04	8.6 E-11	3.7 E-11	2.3 E-11	1.4 E-11	1.2 E-11
		M	0.005	2.1 E-10	5.0 E-04	1.3 E-10	6.0 E-11	3.9 E-11	2.5 E-11	2.1 E-11
Ceriu										
Ce-134	3.00 d	F	0.005	7.6 E-09	5.0 E-04	5.3 E-09	2.3 E-09	1.4 E-09	7.7 E-10	5.7 E-10
		M	0.005	1.1 E-08	5.0 E-04	7.6 E-09	3.7 E-09	2.4 E-09	1.5 E-09	1.3 E-09
		S	0.005	1.2 E-08	5.0 E-04	8.0 E-09	3.8 E-09	2.5 E-09	1.6 E-09	1.3 E-09
Ce-135	17.6 h	F	0.005	2.3 E-09	5.0 E-04	1.7 E-09	8.5 E-10	5.3 E-10	3.0 E-10	2.4 E-10
		M	0.005	3.6 E-09	5.0 E-04	2.7 E-09	1.4 E-09	8.9 E-10	5.9 E-10	4.8 E-10
		S	0.005	3.7 E-09	5.0 E-04	2.8 E-09	1.4 E-09	9.4 E-10	6.3 E-10	5.0 E-10
Ce-137	9.00 h	F	0.005	7.5 E-11	5.0 E-04	5.6 E-11	2.7 E-11	1.6 E-11	8.7 E-12	7.0 E-12
		M	0.005	1.1 E-10	5.0 E-04	7.6 E-11	3.6 E-11	2.2 E-11	1.2 E-11	9.8 E-12
		S	0.005	1.1 E-10	5.0 E-04	7.8 E-11	3.7 E-11	2.3 E-11	1.3 E-11	1.0 E-11

Ce-137m	1.43 d	F	0.005	1.6 E-09	5.0 E-04	1.1 E-09	4.6 E-10	2.8 E-10	1.5 E-10	1.2 E-10
		M	0.005	3.1 E-09	5.0 E-04	2.2 E-09	1.1 E-09	6.7 E-10	5.1 E-10	4.1 E-10
		S	0.005	3.3 E-09	5.0 E-04	2.3 E-09	1.0 E-09	7.3 E-10	5.6 E-10	4.4 E-10
Ce-139	138 d	F	0.005	1.1 E-08	5.0 E-04	8.5 E-09	4.5 E-09	2.8 E-09	1.8 E-09	1.5 E-09
		M	0.005	7.5 E-09	5.0 E-04	6.1 E-09	3.6 E-09	2.5 E-09	2.1 E-09	1.7 E-09
		S	0.005	7.8 E-09	5.0 E-04	6.3 E-09	3.9 E-09	2.7 E-09	2.4 E-09	1.9 E-09
Ce-141	32.5 d	F	0.005	1.1 E-08	5.0 E-04	7.3 E-09	3.5 E-09	2.0 E-09	1.2 E-09	9.3 E-10
		M	0.005	1.4 E-08	5.0 E-04	1.1 E-08	6.3 E-09	4.6 E-09	4.1 E-09	3.2 E-09
		S	0.005	1.6 E-08	5.0 E-04	1.2 E-08	7.1 E-09	5.3 E-09	4.8 E-09	3.8 E-09
Ce-143	1.38 d	F	0.005	3.6 E-09	5.0 E-04	2.3 E-09	1.0 E-09	6.2 E-10	3.3 E-10	2.7 E-10
		M	0.005	5.6 E-09	5.0 E-04	3.9 E-09	1.9 E-09	1.3 E-09	9.3 E-10	7.5 E-10
		S	0.005	5.9 E-09	5.0 E-04	4.1 E-09	2.1 E-09	1.4 E-09	1.0 E-09	8.3 E-10
Ce-144	284 d	F	0.005	3.6 E-07	5.0 E-04	2.7 E-07	1.4 E-07	7.8 E-08	4.8 E-08	4.0 E-08
		M	0.005	1.9 E-07	5.0 E-04	1.6 E-07	8.8 E-08	5.5 E-08	4.1 E-08	3.6 E-08
		S	0.005	2.1 E-07	5.0 E-04	1.8 E-07	1.1 E-07	7.3 E-08	5.8 E-08	5.3 E-08
Praseodim										
Pr-136	0.218 h	M	0.005	1.3 E-10	5.0 E-04	8.8 E-11	4.2 E-11	2.6 E-11	1.6 E-11	1.3 E-11
		S	0.005	1.3 E-10	5.0 E-04	9.0 E-11	4.3 E-11	2.7 E-11	1.7 E-11	1.4 E-11
Pr-137	1.28 h	M	0.005	1.8 E-10	5.0 E-04	1.3 E-10	6.1 E-11	3.9 E-11	2.4 E-11	2.0 E-11
		S	0.005	1.9 E-10	5.0 E-04	1.3 E-10	6.4 E-11	4.0 E-11	2.5 E-11	2.1 E-11
Pr-138m	2.10 h	M	0.005	5.9 E-10	5.0 E-04	4.5 E-10	2.3 E-10	1.4 E-10	9.0 E-11	7.2 E-11
		S	0.005	6.0 E-10	5.0 E-04	4.7 E-10	2.4 E-10	1.5 E-10	9.3 E-11	7.4 E-11
Pr-139	4.51 h	M	0.005	1.5 E-10	5.0 E-04	1.1 E-10	5.5 E-11	3.5 E-11	2.3 E-11	1.8 E-11
		S	0.005	1.6 E-10	5.0 E-04	1.2 E-10	5.7 E-11	3.7 E-11	2.4 E-11	2.0 E-11
Pr-142	19.1 h	M	0.005	5.3 E-09	5.0 E-04	3.5 E-09	1.6 E-09	1.0 E-09	6.2 E-10	5.2 E-10
		S	0.005	5.5 E-09	5.0 E-04	3.7 E-09	1.7 E-09	1.1 E-09	6.6 E-10	5.5 E-10
Pr-142m	0.243 h	M	0.005	6.7 E-11	5.0 E-04	4.5 E-11	2.0 E-11	1.3 E-11	7.9 E-12	6.6 E-12
		S	0.005	7.0 E-11	5.0 E-04	4.7 E-11	2.2 E-11	1.4 E-11	8.4 E-12	7.0 E-12
Pr-143	13.6 d	M	0.005	1.2 E-08	5.0 E-04	8.4 E-09	4.6 E-09	3.2 E-09	2.7 E-09	2.2 E-09
		S	0.005	1.3 E-08	5.0 E-04	9.2 E-09	5.1 E-09	3.6 E-09	3.0 E-09	2.4 E-09
Pr-144	0.288 h	M	0.005	1.9 E-10	5.0 E-04	1.2 E-10	5.0 E-11	3.2 E-11	2.1 E-11	1.8 E-11
		S	0.005	1.9 E-10	5.0 E-04	1.2 E-10	5.2 E-11	3.4 E-11	2.1 E-11	1.8 E-11
Pr-145	5.98 h	M	0.005	1.6 E-09	5.0 E-04	1.0 E-09	4.7 E-10	3.0 E-10	1.9 E-10	1.6 E-10
		S	0.005	1.6 E-09	5.0 E-04	1.1 E-09	4.9 E-10	3.2 E-10	2.0 E-10	1.7 E-10
Pr-147	0.227 h	M	0.005	1.5 E-10	5.0 E-04	1.0 E-10	4.8 E-11	3.1 E-11	2.1 E-11	1.8 E-11
		S	0.005	1.6 E-10	5.0 E-04	1.1 E-10	5.0 E-11	3.3 E-11	2.2 E-11	1.8 E-11
Neodim										
Nd-136	0.844 h	M	0.005	4.6 E-10	5.0 E-04	3.2 E-10	1.6 E-10	9.8 E-11	6.3 E-11	5.1 E-11
		S	0.005	4.8 E-10	5.0 E-04	3.3 E-10	1.6 E-10	1.0 E-10	6.6 E-11	5.4 E-11
Nd-138	5.04 h	M	0.005	2.3 E-09	5.0 E-04	1.7 E-09	7.7 E-10	4.8 E-10	2.8 E-10	2.3 E-10
		S	0.005	2.4 E-09	5.0 E-04	1.8 E-09	8.0 E-10	5.0 E-10	3.0 E-10	2.5 E-10
Nd-139	0.495 h	M	0.005	9.0 E-11	5.0 E-04	6.2 E-11	3.0 E-11	1.9 E-11	1.2 E-11	9.9 E-12
		S	0.005	9.4 E-11	5.0 E-04	6.4 E-11	3.1 E-11	2.0 E-11	1.3 E-11	1.0 E-11
Nd-139m	5.50 h	M	0.005	1.1 E-09	5.0 E-04	8.8 E-10	4.5 E-10	2.9 E-10	1.8 E-10	1.5 E-10
		S	0.005	1.2 E-09	5.0 E-04	9.1 E-10	4.6 E-10	3.0 E-10	1.9 E-10	1.5 E-10
Nd-141	2.49 h	M	0.005	4.1 E-11	5.0 E-04	3.1 E-11	1.5 E-11	9.6 E-12	6.0 E-12	4.8 E-12
		S	0.005	4.3 E-11	5.0 E-04	3.2 E-11	1.6 E-11	1.0 E-11	6.2 E-12	5.0 E-12
Nd-147	11.0 d	M	0.005	1.1 E-08	5.0 E-04	8.0 E-09	4.5 E-09	3.2 E-09	2.6 E-09	2.1 E-09
		S	0.005	1.2 E-08	5.0 E-04	8.6 E-09	4.9 E-09	3.5 E-09	3.0 E-09	2.4 E-09
Nd-149	1.73 h	M	0.005	6.8 E-10	5.0 E-04	4.6 E-10	2.2 E-10	1.5 E-10	1.0 E-10	8.4 E-11
		S	0.005	7.1 E-10	5.0 E-04	4.8 E-10	2.3 E-10	1.5 E-10	1.1 E-10	8.9 E-11
Nd-151	0.207 h	M	0.005	1.5 E-10	5.0 E-04	9.9 E-11	4.6 E-11	3.0 E-11	2.0 E-11	1.7 E-11
		S	0.005	1.5 E-10	5.0 E-04	1.0 E-10	4.8 E-11	3.1 E-11	2.1 E-11	1.7 E-11

Promețiu										
Pm-141	0.348 h	M	0.005	1.4 E-10	5.0 E-04	9.4 E-11	4.3 E-11	2.7 E-11	1.7 E-11	1.4 E-11
		S	0.005	1.5 E-10	5.0 E-04	9.7 E-11	4.4 E-11	2.8 E-11	1.8 E-11	1.5 E-11
Pm-143	265 d	M	0.005	6.2 E-09	5.0 E-04	5.4 E-09	3.3 E-09	2.2 E-09	1.7 E-09	1.5 E-09
		S	0.005	5.5 E-09	5.0 E-04	4.8 E-09	3.1 E-09	2.1 E-09	1.7 E-09	1.4 E-09
Pm-144	363 d	M	0.005	3.1 E-08	5.0 E-04	2.8 E-08	1.8 E-08	1.2 E-08	9.3 E-09	8.2 E-09
		S	0.005	2.6 E-08	5.0 E-04	2.4 E-08	1.6 E-08	1.1 E-08	8.9 E-09	7.5 E-09
Pm-145	17.7 a	M	0.005	1.1 E-08	5.0 E-04	9.8 E-09	6.4 E-09	4.3 E-09	3.7 E-09	3.6 E-09
		S	0.005	7.1 E-09	5.0 E-04	6.5 E-09	4.3 E-09	2.9 E-09	2.4 E-09	2.3 E-09
Pm-146	5.53 a	M	0.005	6.4 E-08	5.0 E-04	5.9 E-08	3.9 E-08	2.6 E-08	2.2 E-08	2.1 E-08
		S	0.005	5.3 E-08	5.0 E-04	4.9 E-08	3.3 E-08	2.2 E-08	1.9 E-08	1.7 E-08
Pm-147	2.62 a	M	0.005	2.1 E-08	5.0 E-04	1.8 E-08	1.1 E-08	7.0 E-09	5.7 E-09	5.0 E-09
		S	0.005	1.9 E-08	5.0 E-04	1.6 E-08	1.0 E-08	6.8 E-09	5.8 E-09	4.9 E-09
Pm-148	5.37 d	M	0.005	1.5 E-08	5.0 E-04	1.0 E-08	5.2 E-09	3.4 E-09	2.4 E-09	2.0 E-09
		S	0.005	1.5 E-08	5.0 E-04	1.1 E-08	5.5 E-09	3.7 E-09	2.6 E-09	2.2 E-09
Pm-148m	41.3 d	M	0.005	2.4 E-08	5.0 E-04	1.9 E-08	1.1 E-08	7.7 E-09	6.3 E-09	5.1 E-09
		S	0.005	2.5 E-08	5.0 E-04	2.0 E-08	1.2 E-08	8.3 E-09	7.1 E-09	5.7 E-09
Pm-149	2.21 d	M	0.005	5.0 E-09	5.0 E-04	3.5 E-09	1.7 E-09	1.1 E-09	8.3 E-10	6.7 E-10
		S	0.005	5.3 E-09	5.0 E-04	3.6 E-09	1.8 E-09	1.2 E-09	9.0 E-10	7.3 E-10
Pm-150	2.68 h	M	0.005	1.2 E-09	5.0 E-04	7.9 E-10	3.8 E-10	2.4 E-10	1.5 E-10	1.2 E-10
		S	0.005	1.2 E-09	5.0 E-04	8.2 E-10	3.9 E-10	2.5 E-10	1.6 E-10	1.3 E-10
Pm-151	1.18 d	M	0.005	3.3 E-09	5.0 E-04	2.5 E-09	1.2 E-09	8.3 E-10	5.3 E-10	4.3 E-10
		S	0.005	3.4 E-09	5.0 E-04	2.6 E-09	1.3 E-09	7.9 E-10	5.7 E-10	4.6 E-10
Samariu										
Sm-141	0.170 h	M	0.005	1.5 E-10	5.0 E-04	1.0 E-10	4.7 E-11	2.9 E-11	1.8 E-11	1.5 E-11
Sm-141m	0.377 h	M	0.005	3.0 E-10	5.0 E-04	2.1 E-10	9.7 E-11	6.1 E-11	3.9 E-11	3.2 E-11
Sm-142	1.21 h	M	0.005	7.5 E-10	5.0 E-04	4.8 E-10	2.2 E-10	1.4 E-10	8.5 E-11	7.1 E-11
Sm-145	340 d	M	0.005	8.1 E-09	5.0 E-04	6.8 E-09	4.0 E-09	2.5 E-09	1.9 E-09	1.6 E-09
Sm-146	1.03 E+08 a	M	0.005	2.7 E-05	5.0 E-04	2.6 E-05	1.7 E-05	1.2 E-05	1.1 E-05	1.1 E-05
Sm-147	1.06 E+11 a	M	0.005	2.5 E-05	5.0 E-04	2.3 E-05	1.6 E-05	1.1 E-05	9.6 E-06	9.6 E-06
Sm-151	90.0 a	M	0.005	1.1 E-08	5.0 E-04	1.0 E-08	6.7 E-09	4.5 E-09	4.0 E-09	4.0 E-09
Sm-153	1.95 d	M	0.005	4.2 E-09	5.0 E-04	2.9 E-09	1.5 E-09	1.0 E-09	7.9 E-10	6.3 E-10
Sm-155	0.368 h	M	0.005	1.5 E-10	5.0 E-04	9.9 E-11	4.4 E-11	2.9 E-11	2.0 E-11	1.7 E-11
Sm-156	9.40 h	M	0.005	1.6 E-09	5.0 E-04	1.1 E-09	5.8 E-10	3.5 E-10	2.7 E-10	2.2 E-10
Europiu										
Eu-145	5.94 d	M	0.005	3.6 E-09	5.0 E-04	2.9 E-09	1.6 E-09	1.0 E-09	6.8 E-10	5.5 E-10
Eu-146	4.61 d	M	0.005	5.5 E-09	5.0 E-04	4.4 E-09	2.4 E-09	1.5 E-09	1.0 E-09	8.0 E-10
Eu-147	24.0 d	M	0.005	4.9 E-09	5.0 E-04	3.7 E-09	2.2 E-09	1.6 E-09	1.3 E-09	1.1 E-09
Eu-148	54.5 d	M	0.005	1.4 E-08	5.0 E-04	1.2 E-08	6.8 E-09	4.6 E-09	3.2 E-09	2.6 E-09
Eu-149	93.1 d	M	0.005	1.6 E-09	5.0 E-04	1.3 E-09	7.3 E-10	4.7 E-10	3.5 E-10	2.9 E-10
Eu-150	34.2 a	M	0.005	1.1 E-07	5.0 E-04	1.1 E-07	7.8 E-08	5.7 E-08	5.3 E-08	5.3 E-08
Eu-150	12.6 h	M	0.005	1.6 E-09	5.0 E-04	1.1 E-09	5.2 E-10	3.4 E-10	2.3 E-10	1.9 E-10
Eu-152	13.3 a	M	0.005	1.1 E-07	5.0 E-04	1.0 E-07	7.0 E-08	4.9 E-08	4.3 E-08	4.2 E-08
Eu-152m	9.32 h	M	0.005	1.9 E-09	5.0 E-04	1.3 E-09	6.6 E-10	4.2 E-10	2.4 E-10	2.2 E-10
Eu-154	8.80 a	M	0.005	1.6 E-07	5.0 E-04	1.5 E-07	9.7 E-08	6.5 E-08	5.6 E-08	5.3 E-08
Eu-155	4.96 a	M	0.005	2.6 E-08	5.0 E-04	2.3 E-08	1.4 E-08	9.2 E-09	7.6 E-09	6.9 E-09
Eu-156	15.2 d	M	0.005	1.9 E-08	5.0 E-04	1.4 E-08	7.7 E-09	5.3 E-09	4.2 E-09	3.4 E-09
Eu-157	15.1 h	M	0.005	2.5 E-09	5.0 E-04	1.9 E-09	8.9 E-10	5.9 E-10	3.5 E-10	2.8 E-10
Eu-158	0.765 h	M	0.005	4.3 E-10	5.0 E-04	2.9 E-10	1.3 E-10	8.5 E-11	5.6 E-11	4.7 E-11
Gadolinu										
Gd-145	0.382 h	F	0.005	1.3 E-10	5.0 E-04	9.6 E-11	4.7 E-11	2.9 E-11	1.7 E-11	1.4 E-11
		M	0.005	1.8 E-10	5.0 E-04	1.3 E-10	6.2 E-11	3.9 E-11	2.4 E-11	2.0 E-11
Gd-146	48.3 d	F	0.005	2.9 E-08	5.0 E-04	2.3 E-08	1.2 E-08	7.8 E-09	5.1 E-09	4.4 E-09

		M	0.005	2.8 E-08	5.0 E-04	2.2 E-08	1.3 E-08	9.3 E-09	7.9 E-09	6.4 E-09
Gd-147	1.59 d	F	0.005	2.1 E-09	5.0 E-04	1.7 E-09	8.4 E-10	5.3 E-10	3.1 E-10	2.6 E-10
		M	0.005	2.8 E-09	5.0 E-04	2.2 E-09	1.1 E-09	7.5 E-10	5.1 E-10	4.0 E-10
Gd-148	93.0 a	F	0.005	8.3 E-05	5.0 E-04	7.6 E-05	4.7 E-05	3.2 E-05	2.6 E-05	2.6 E-05
		M	0.005	3.2 E-05	5.0 E-04	2.9 E-05	1.9 E-05	1.3 E-05	1.2 E-05	1.1 E-05
Gd-149	9.40 d	F	0.005	2.6 E-09	5.0 E-04	2.0 E-09	8.0 E-10	5.1 E-10	3.1 E-10	2.6 E-10
		M	0.005	3.6 E-09	5.0 E-04	3.0 E-09	1.5 E-09	1.1 E-09	9.2 E-10	7.3 E-10
Gd-151	120 d	F	0.005	6.3 E-09	5.0 E-04	4.9 E-09	2.5 E-09	1.5 E-09	9.2 E-10	7.8 E-10
		M	0.005	4.5 E-09	5.0 E-04	3.5 E-09	2.0 E-09	1.3 E-09	1.0 E-09	8.6 E-10
Gd-152	1.08 E+14 a	F	0.005	5.9 E-05	5.0 E-04	5.4 E-05	3.4 E-05	2.4 E-05	1.9 E-05	1.9 E-05
		M	0.005	2.1 E-05	5.0 E-04	1.9 E-05	1.3 E-05	8.9 E-06	7.9 E-06	8.0 E-06
Gd-153	242 d	F	0.005	1.5 E-08	5.0 E-04	1.2 E-08	6.5 E-09	3.9 E-09	2.4 E-09	2.1 E-09
		M	0.005	9.9 E-09	5.0 E-04	7.9 E-09	4.8 E-09	3.1 E-09	2.5 E-09	2.1 E-09
Gd-159	18.6 h	F	0.005	1.2 E-09	5.0 E-04	8.9 E-10	3.8 E-10	2.3 E-10	1.2 E-10	1.0 E-10
		M	0.005	2.2 E-09	5.0 E-04	1.5 E-09	7.3 E-10	4.9 E-10	3.4 E-10	2.7 E-10
Terbiu										
Tb-147	1.65 h	M	0.005	6.7 E-10	5.0 E-04	4.8 E-10	2.3 E-10	1.5 E-10	9.3 E-11	7.6 E-11
Tb-149	4.15 h	M	0.005	2.1 E-08	5.0 E-04	1.5 E-08	9.6 E-09	6.6 E-09	5.8 E-09	4.9 E-09
Tb-150	3.27 h	M	0.005	1.0 E-09	5.0 E-04	7.4 E-10	3.5 E-10	2.2 E-10	1.3 E-10	1.1 E-10
Tb-151	17.6 h	M	0.005	1.6 E-09	5.0 E-04	1.2 E-09	6.3 E-10	4.2 E-10	2.8 E-10	2.3 E-10
Tb-153	2.34 d	M	0.005	1.4 E-09	5.0 E-04	1.0 E-09	5.4 E-10	3.6 E-10	2.3 E-10	1.9 E-10
Tb-154	21.4 h	M	0.005	2.7 E-09	5.0 E-04	2.1 E-09	1.1 E-09	7.1 E-10	4.5 E-10	3.6 E-10
Tb-155	5.32 d	M	0.005	1.4 E-09	5.0 E-04	1.0 E-09	5.6 E-10	3.4 E-10	2.7 E-10	2.2 E-10
Tb-156	5.34 d	M	0.005	7.0 E-09	5.0 E-04	5.4 E-09	3.0 E-09	2.0 E-09	1.5 E-09	1.2 E-09
Tb-156m	1.02 d	M	0.005	1.1 E-09	5.0 E-04	9.4 E-10	4.7 E-10	3.3 E-10	2.7 E-10	2.1 E-10
Tb-156m	5.00 h	M	0.005	6.2 E-10	5.0 E-04	4.5 E-10	2.4 E-10	1.7 E-10	1.2 E-10	9.6 E-11
Tb-157	1.50 E+02 a	M	0.005	3.2 E-09	5.0 E-04	3.0 E-09	2.0 E-09	1.4 E-09	1.2 E-09	1.2 E-09
Tb-158	1.50 E+02 a	M	0.005	1.1 E-07	5.0 E-04	1.0 E-07	7.0 E-08	5.1 E-08	4.7 E-08	4.6 E-08
Tb-160	72.3 d	M	0.005	3.2 E-08	5.0 E-04	2.5 E-08	1.5 E-08	1.0 E-08	8.6 E-09	7.0 E-09
Tb-161	6.91 d	M	0.005	6.6 E-09	5.0 E-04	4.7 E-09	2.6 E-09	1.9 E-09	1.6 E-09	1.3 E-09
Disprosiu										
Dy-155	10.0 h	M	0.005	5.6 E-10	5.0 E-04	4.4 E-10	2.3 E-10	1.5 E-10	9.6 E-11	7.7 E-11
Dy-157	8.10 h	M	0.005	2.4 E-10	5.0 E-04	1.9 E-10	9.9 E-11	6.2 E-11	3.8 E-11	3.0 E-11
Dy-159	144 d	M	0.005	2.1 E-09	5.0 E-04	1.7 E-09	9.6 E-10	6.0 E-10	4.4 E-10	3.7 E-10
Dy-165	2.33 h	M	0.005	5.2 E-10	5.0 E-04	3.4 E-10	1.6 E-10	1.1 E-10	7.2 E-11	6.0 E-11
Dy-166	3.40 d	M	0.005	1.2 E-08	5.0 E-04	8.3 E-09	4.4 E-09	3.0 E-09	2.3 E-09	1.9 E-09
Holmiu										
Ho-155	0.800 h	M	0.005	1.7 E-10	5.0 E-04	1.2 E-10	5.8 E-11	3.7 E-11	2.4 E-11	2.0 E-11
Ho-157	0.210 h	M	0.005	3.4 E-11	5.0 E-04	2.5 E-11	1.3 E-11	8.0 E-12	5.1 E-12	4.2 E-12
Ho-159	0.550 h	M	0.005	4.6 E-11	5.0 E-04	3.3 E-11	1.7 E-11	1.1 E-11	7.5 E-12	6.1 E-12
Ho-161	2.50 h	M	0.005	5.7 E-11	5.0 E-04	4.0 E-11	2.0 E-11	1.2 E-11	7.5 E-12	6.0 E-12
Ho-162	0.250 h	M	0.005	2.1 E-11	5.0 E-04	1.5 E-11	7.2 E-12	4.8 E-12	3.4 E-12	2.8 E-12
Ho-162m	1.13 h	M	0.005	1.5 E-10	5.0 E-04	1.1 E-10	5.8 E-11	3.8 E-11	2.6 E-11	2.1 E-11
Ho-164	0.483 h	M	0.005	6.8 E-11	5.0 E-04	4.5 E-11	2.1 E-11	1.4 E-11	9.9 E-12	8.4 E-12
Ho-164m	0.625 h	M	0.005	9.1 E-11	5.0 E-04	5.9 E-11	3.0 E-11	2.0 E-11	1.3 E-11	1.2 E-11
Ho-166	1.12 d	M	0.005	6.0 E-09	5.0 E-04	4.0 E-09	1.9 E-09	1.2 E-09	7.9 E-10	6.5 E-10
Ho-166m	1.20 E+03 a	M	0.005	2.6 E-07	5.0 E-04	2.5 E-07	1.8 E-07	1.3 E-07	1.2 E-07	1.2 E-07
Ho-167	3.10 h	M	0.005	5.2 E-10	5.0 E-04	3.6 E-10	1.8 E-10	1.2 E-10	8.7 E-11	7.1 E-11
Erbiu										
Er-161	3.24 h	M	0.005	3.8 E-10	5.0 E-04	2.9 E-10	1.5 E-10	9.5 E-11	6.0 E-11	4.8 E-11
Er-165	10.4 h	M	0.005	7.2 E-11	5.0 E-04	5.3 E-11	2.6 E-11	1.6 E-11	9.6 E-12	7.9 E-12
Er-169	9.30 d	M	0.005	4.7 E-09	5.0 E-04	3.5 E-09	2.0 E-09	1.5 E-09	1.3 E-09	1.0 E-09
Er-171	7.52 h	M	0.005	1.8 E-09	5.0 E-04	1.2 E-09	5.9 E-10	3.9 E-10	2.7 E-10	2.2 E-10

Er-172	2.05 d	M	0.005	6.6 E-09	5.0 E-04	4.7 E-09	2.5 E-09	1.7 E-09	1.4 E-09	1.1 E-09
Tuliu										
Tm-162	0.362 h	M	0.005	1.3 E-10	5.0 E-04	9.6 E-11	4.7 E-11	3.0 E-11	1.9 E-11	1.6 E-11
Tm-166	7.70 h	M	0.005	1.3 E-09	5.0 E-04	9.9 E-10	5.2 E-10	3.3 E-10	2.2 E-10	1.7 E-10
Tm-167	9.24 d	M	0.005	5.6 E-09	5.0 E-04	4.1 E-09	2.3 E-09	1.7 E-09	1.4 E-09	1.1 E-09
Tm-170	129 d	M	0.005	3.6 E-08	5.0 E-04	2.8 E-08	1.6 E-08	1.1 E-08	8.5 E-09	7.0 E-09
Tm-171	1.92 a	M	0.005	6.8 E-09	5.0 E-04	5.7 E-09	3.4 E-09	2.0 E-09	1.6 E-09	1.4 E-09
Tm-172	2.65 d	M	0.005	8.4 E-09	5.0 E-04	5.8 E-09	2.9 E-09	1.9 E-09	1.4 E-09	1.1 E-09
Tm-173	8.24 h	M	0.005	1.5 E-09	5.0 E-04	1.0 E-09	5.0 E-10	3.3 E-10	2.2 E-10	1.8 E-10
Tm-175	0.253 h	M	0.005	1.6 E-10	5.0 E-04	1.1 E-10	5.0 E-11	3.3 E-11	2.2 E-11	1.8 E-11
Yterbiu										
Yb-162	0.315 h	M	0.005	1.1 E-10	5.0 E-04	7.9 E-11	3.9 E-11	2.5 E-11	1.6 E-11	1.3 E-11
		S	0.005	1.2 E-10	5.0 E-04	8.2 E-11	4.0 E-11	2.6 E-11	1.7 E-11	1.4 E-11
Yb-166	2.36 d	M	0.005	4.7 E-09	5.0 E-04	3.5 E-09	1.9 E-09	1.3 E-09	9.0 E-10	7.2 E-10
		S	0.005	4.9 E-09	5.0 E-04	3.7 E-09	2.0 E-09	1.3 E-09	9.6 E-10	7.7 E-10
Yb-167	0.292 h	M	0.005	4.4 E-11	5.0 E-04	3.1 E-11	1.6 E-11	1.1 E-11	7.9 E-12	6.5 E-12
		S	0.005	4.6 E-11	5.0 E-04	3.2 E-11	1.7 E-11	1.1 E-11	8.4 E-12	6.9 E-12
Yb-169	32.0 d	M	0.005	1.2 E-08	5.0 E-04	8.7 E-09	5.1 E-09	3.7 E-09	3.2 E-09	2.5 E-09
		S	0.005	1.3 E-08	5.0 E-04	9.8 E-09	5.9 E-09	4.2 E-09	3.7 E-09	3.0 E-09
Yb-175	4.19 d	M	0.005	3.5 E-09	5.0 E-04	2.5 E-09	1.4 E-09	9.8 E-10	8.3 E-10	6.5 E-10
		S	0.005	3.7 E-09	5.0 E-04	2.7 E-09	1.5 E-09	1.1 E-09	9.2 E-10	7.3 E-10
Yb-177	1.90 h	M	0.005	5.0 E-10	5.0 E-04	3.3 E-10	1.6 E-10	1.1 E-10	7.8 E-11	6.4 E-11
		S	0.005	5.3 E-10	5.0 E-04	3.5 E-10	1.7 E-10	1.2 E-10	8.4 E-11	6.9 E-11
Yb-178	1.23 h	M	0.005	5.9 E-10	5.0 E-04	3.9 E-10	1.8 E-10	1.2 E-10	8.5 E-11	7.0 E-11
		S	0.005	6.2 E-10	5.0 E-04	4.1 E-10	1.9 E-10	1.3 E-10	9.1 E-11	7.5 E-11

Lutețiu										
Lu-169	1.42 d	M	0.005	2.3 E-09	5.0 E-04	1.8 E-09	9.5 E-10	6.3 E-10	4.4 E-10	3.5 E-10
		S	0.005	2.4 E-09	5.0 E-04	1.9 E-09	1.0 E-09	6.7 E-10	4.8 E-10	3.8 E-10
Lu-170	2.00 d	M	0.005	4.3 E-09	5.0 E-04	3.4 E-09	1.8 E-09	1.2 E-09	7.8 E-10	6.3 E-10
		S	0.005	4.5 E-09	5.0 E-04	3.5 E-09	1.8 E-09	1.2 E-09	8.2 E-10	6.6 E-10
Lu-171	8.22 d	M	0.005	5.0 E-09	5.0 E-04	3.7 E-09	2.1 E-09	1.2 E-09	9.8 E-10	8.0 E-10
		S	0.005	4.7 E-09	5.0 E-04	3.9 E-09	2.0 E-09	1.4 E-09	1.1 E-09	8.8 E-10
Lu-172	6.70 d	M	0.005	8.7 E-09	5.0 E-04	6.7 E-09	3.8 E-09	2.6 E-09	1.8 E-09	1.4 E-09
		S	0.005	9.3 E-09	5.0 E-04	7.1 E-09	4.0 E-09	2.8 E-09	2.0 E-09	1.6 E-09
Lu-173	1.37 a	M	0.005	1.0 E-08	5.0 E-04	8.5 E-09	5.1 E-09	3.2 E-09	2.5 E-09	2.2 E-09
		S	0.005	1.0 E-08	5.0 E-04	8.7 E-09	5.4 E-09	3.6 E-09	2.9 E-09	2.4 E-09
Lu-174	3.31 a	M	0.005	1.7 E-08	5.0 E-04	1.5 E-08	9.1 E-09	5.8 E-09	4.7 E-09	4.2 E-09
		S	0.005	1.6 E-08	5.0 E-04	1.4 E-08	8.9 E-09	5.9 E-09	4.9 E-09	4.2 E-09
Lu-174m	142 d	M	0.005	1.9 E-08	5.0 E-04	1.4 E-08	8.6 E-09	5.4 E-09	4.3 E-09	3.7 E-09
		S	0.005	2.0 E-08	5.0 E-04	1.5 E-08	9.2 E-09	6.1 E-09	5.0 E-09	4.2 E-09
Lu-176	3.60 E+10 a	M	0.005	1.8 E-07	5.0 E-04	1.7 E-07	1.1 E-07	7.8 E-08	7.1 E-08	7.0 E-08
		S	0.005	1.5 E-07	5.0 E-04	1.4 E-07	9.4 E-08	6.5 E-08	5.9 E-08	5.6 E-08
Lu-176m	3.68 h	M	0.005	8.9 E-10	5.0 E-04	5.9 E-10	2.8 E-10	1.9 E-10	1.2 E-10	1.1 E-10
		S	0.005	9.3 E-10	5.0 E-04	6.2 E-10	3.0 E-10	2.0 E-10	1.2 E-10	1.2 E-10
Lu-177	6.71 d	M	0.005	5.3 E-09	5.0 E-04	3.8 E-09	2.2 E-09	1.6 E-09	1.4 E-09	1.1 E-09
		S	0.005	5.7 E-09	5.0 E-04	4.1 E-09	2.4 E-09	1.7 E-09	1.5 E-09	1.2 E-09
Lu-177m	161 d	M	0.005	5.8 E-08	5.0 E-04	4.6 E-08	2.8 E-08	1.9 E-08	1.6 E-08	1.3 E-08
		S	0.005	6.5 E-08	5.0 E-04	5.3 E-08	3.2 E-08	2.3 E-08	2.0 E-08	1.6 E-08
Lu-178	0.473 h	M	0.005	2.3 E-10	5.0 E-04	1.5 E-10	6.6 E-11	4.3 E-11	2.9 E-11	2.4 E-11
		S	0.005	2.4 E-10	5.0 E-04	1.5 E-10	6.9 E-11	4.5 E-11	3.0 E-11	2.6 E-11

Lu-178m	0.378 h	M	0.005	2.6 E-10	5.0 E-04	1.8 E-10	8.3 E-11	5.6 E-11	3.8 E-11	3.2 E-11
		S	0.005	2.7 E-10	5.0 E-04	1.9 E-10	8.7 E-11	5.8 E-11	4.0 E-11	3.3 E-11
Lu-179	4.59 h	M	0.005	9.9 E-10	5.0 E-04	6.5 E-10	3.0 E-10	2.0 E-10	1.2 E-10	1.1 E-10
		S	0.005	1.0 E-09	5.0 E-04	6.8 E-10	3.2 E-10	2.1 E-10	1.3 E-10	1.2 E-10
Hafniu										
Hf-170	16.0 h	F	0.020	1.4 E-09	0.002	1.1 E-09	5.4 E-10	3.4 E-10	2.0 E-10	1.6 E-10
		M	0.020	2.2 E-09	0.002	1.7 E-09	8.7 E-10	5.8 E-10	3.9 E-10	3.2 E-10
Hf-172	1.87 a	F	0.020	1.5 E-07	0.002	1.3 E-07	7.8 E-08	4.9 E-08	3.5 E-08	3.2 E-08
		M	0.020	8.1 E-08	0.002	6.9 E-08	4.3 E-08	2.8 E-08	2.3 E-08	2.0 E-08
Hf-173	24.0 h	F	0.020	6.6 E-10	0.002	5.0 E-10	2.5 E-10	1.5 E-10	8.9 E-11	7.4 E-11
		M	0.020	1.1 E-09	0.002	8.2 E-10	4.3 E-10	2.9 E-10	2.0 E-10	1.6 E-10
Hf-175	70.0 d	F	0.020	5.4 E-09	0.002	4.0 E-09	2.1 E-09	1.3 E-09	8.5 E-10	7.2 E-10
		M	0.020	5.8 E-09	0.002	4.5 E-09	2.6 E-09	1.8 E-09	1.4 E-09	1.2 E-09
Hf-177m	0.856 h	F	0.020	3.9 E-10	0.002	2.8 E-10	1.3 E-10	8.5 E-11	5.2 E-11	4.4 E-11
		M	0.020	6.5 E-10	0.002	4.7 E-10	2.3 E-10	1.5 E-10	1.1 E-10	9.0 E-11
Hf-178m	31.0 a	F	0.020	6.2 E-07	0.002	5.8 E-07	4.0 E-07	3.1 E-07	2.7 E-07	2.6 E-07
		M	0.020	2.6 E-07	0.002	2.4 E-07	1.7 E-07	1.3 E-07	1.2 E-07	1.2 E-07
Hf-179m	25.1 d	F	0.020	9.7 E-09	0.002	6.8 E-09	3.4 E-09	2.1 E-09	1.2 E-09	1.1 E-09
		M	0.020	1.7 E-08	0.002	1.3 E-08	7.6 E-09	5.5 E-09	4.8 E-09	3.8 E-09
Hf-180m	5.50 h	F	0.020	5.4 E-10	0.002	4.1 E-10	2.0 E-10	1.3 E-10	7.2 E-11	5.9 E-11
		M	0.020	9.1 E-10	0.002	6.8 E-10	3.6 E-10	2.4 E-10	1.7 E-10	1.3 E-10
Hf-181	42.4 d	F	0.020	1.3 E-08	0.002	9.6 E-09	4.8 E-09	2.8 E-09	1.7 E-09	1.4 E-09
		M	0.020	2.2 E-08	0.002	1.7 E-08	9.9 E-09	7.1 E-09	6.3 E-09	5.0 E-09
Hf-182	9.00 E+06 a	F	0.020	6.5 E-07	0.002	6.2 E-07	4.4 E-07	3.6 E-07	3.1 E-07	3.1 E-07
		M	0.020	2.4 E-07	0.002	2.3 E-07	1.7 E-07	1.3 E-07	1.3 E-07	1.3 E-07

Hf-182m	1.02 h	F	0.020	1.9 E-10	0.002	1.4 E-10	6.6 E-11	4.2 E-11	2.6 E-11	2.1 E-11
		M	0.020	3.2 E-10	0.002	2.3 E-10	1.2 E-10	7.8 E-11	5.6 E-11	4.6 E-11
Hf-183	1.07 h	F	0.020	2.5 E-10	0.002	1.7 E-10	7.9 E-11	4.9 E-11	2.8 E-11	2.4 E-11
		M	0.020	4.4 E-10	0.002	3.0 E-10	1.5 E-10	9.8 E-11	7.0 E-11	5.7 E-11
Hf-184	4.12 h	F	0.020	1.4 E-09	0.002	9.6 E-10	4.3 E-10	2.7 E-10	1.4 E-10	1.2 E-10
		M	0.020	2.6 E-09	0.002	1.8 E-09	8.9 E-10	5.9 E-10	4.0 E-10	3.3 E-10
Tantal										
Ta-172	0.613 h	M	0.010	2.8 E-10	0.001	1.9 E-10	9.3 E-11	6.0 E-11	4.0 E-11	3.3 E-11
		S	0.010	2.9 E-10	0.001	2.0 E-10	9.8 E-11	6.3 E-11	4.2 E-11	3.5 E-11
Ta-173	3.65 h	M	0.010	8.8 E-10	0.001	6.2 E-10	3.0 E-10	2.0 E-10	1.3 E-10	1.1 E-10
		S	0.010	9.2 E-10	0.001	6.5 E-10	3.2 E-10	2.1 E-10	1.4 E-10	1.1 E-10
Ta-174	1.20 h	M	0.010	3.2 E-10	0.001	2.2 E-10	1.1 E-10	7.1 E-11	5.0 E-11	4.1 E-11
		S	0.010	3.4 E-10	0.001	2.3 E-10	1.1 E-10	7.5 E-11	5.3 E-11	4.3 E-11
Ta-175	10.5 h	M	0.010	9.1 E-10	0.001	7.0 E-10	3.7 E-10	2.4 E-10	1.5 E-10	1.2 E-10
		S	0.010	9.5 E-10	0.001	7.3 E-10	3.8 E-10	2.5 E-10	1.6 E-10	1.3 E-10
Ta-176	8.08 h	M	0.010	1.4 E-09	0.001	1.1 E-09	5.7 E-10	3.7 E-10	2.4 E-10	1.9 E-10
		S	0.010	1.4 E-09	0.001	1.1 E-09	5.9 E-10	3.8 E-10	2.5 E-10	2.0 E-10
Ta-177	2.36 d	M	0.010	6.5 E-10	0.001	4.7 E-10	2.5 E-10	1.5 E-10	1.2 E-10	9.6 E-11
		S	0.010	6.9 E-10	0.001	5.0 E-10	2.7 E-10	1.7 E-10	1.3 E-10	1.1 E-10
Ta-178	2.20 h	M	0.010	4.4 E-10	0.001	3.3 E-10	1.7 E-10	1.1 E-10	8.0 E-11	6.5 E-11
		S	0.010	4.6 E-10	0.001	3.4 E-10	1.8 E-10	1.2 E-10	8.5 E-11	6.8 E-11
Ta-179	1.82 a	M	0.010	1.2 E-09	0.001	9.6 E-10	5.5 E-10	3.5 E-10	2.6 E-10	2.2 E-10
		S	0.010	2.4 E-09	0.001	2.1 E-09	1.3 E-09	8.3 E-10	6.4 E-10	5.6 E-10
Ta-180	1.00 E+13 a	M	0.010	2.7 E-08	0.001	2.2 E-08	1.3 E-08	9.2 E-09	7.9 E-09	6.4 E-09
		S	0.010	7.0 E-08	0.001	6.5 E-08	4.5 E-08	3.1 E-08	2.8 E-08	2.6 E-08
Ta-180m	8.10 h	M	0.010	3.1 E-10	0.001	2.2 E-10	1.1 E-10	7.4 E-11	4.8 E-11	4.4 E-11

		S	0.010	3.3 E-10	0.001	2.3 E-10	1.2 E-10	7.9 E-11	5.2 E-11	4.2 E-11
Ta-182	115 d	M	0.010	3.2 E-08	0.001	2.6 E-08	1.5 E-08	1.1 E-08	9.5 E-09	7.6 E-09
		S	0.010	4.2 E-08	0.001	3.4 E-08	2.1 E-08	1.5 E-08	1.3 E-08	1.0 E-08
Ta-182m	0.264 h	M	0.010	1.6 E-10	0.001	1.1 E-10	4.9 E-11	3.4 E-11	2.4 E-11	2.0 E-11
		S	0.010	1.6 E-10	0.001	1.1 E-10	5.2 E-11	3.6 E-11	2.5 E-11	2.1 E-11
Ta-183	5.10 d	M	0.010	1.0 E-08	0.001	7.4 E-09	4.1 E-09	2.9 E-09	2.4 E-09	1.9 E-09
		S	0.010	1.1 E-08	0.001	8.0 E-09	4.5 E-09	3.2 E-09	2.7 E-09	2.1 E-09
Ta-184	8.70 h	M	0.010	3.2 E-09	0.001	2.3 E-09	1.1 E-09	7.5 E-10	5.0 E-10	4.1 E-10
		S	0.010	3.4 E-09	0.001	2.4 E-09	1.2 E-09	7.9 E-10	5.4 E-10	4.3 E-10
Ta-185	0.816 h	M	0.010	3.8 E-10	0.001	2.5 E-10	1.2 E-10	7.7 E-11	5.4 E-11	4.5 E-11
		S	0.010	4.0 E-10	0.001	2.6 E-10	1.2 E-10	8.2 E-11	5.7 E-11	4.8 E-11
Ta-186	0.175 h	M	0.010	1.6 E-10	0.001	1.1 E-10	4.8 E-11	3.1 E-11	2.0 E-11	1.7 E-11
		S	0.010	1.6 E-10	0.001	1.1 E-10	5.0 E-11	3.2 E-11	2.1 E-11	1.8 E-11

Wolfram

W-176	2.30 h	F	0.600	3.3 E-10	0.300	2.7 E-10	1.4 E-10	8.6 E-11	5.0 E-11	4.1 E-11
W-177	2.25 h	F	0.600	2.0 E-10	0.300	1.6 E-10	8.2 E-11	5.1 E-11	3.0 E-11	2.4 E-11
W-178	21.7 d	F	0.600	7.2 E-10	0.300	5.4 E-10	2.5 E-10	1.6 E-10	8.7 E-11	7.2 E-11
W-179	0.625 h	F	0.600	9.3 E-12	0.300	6.8 E-12	3.3 E-12	2.0 E-12	1.2 E-12	9.2 E-13
W-181	121 d	F	0.600	2.5 E-10	0.300	1.9 E-10	9.2 E-11	5.7 E-11	3.2 E-11	2.7 E-11
W-185	75.1 d	F	0.600	1.4 E-09	0.300	1.0 E-09	4.4 E-10	2.7 E-10	1.4 E-10	1.2 E-10
W-187	23.9 h	F	0.600	2.0 E-09	0.300	1.5 E-09	7.0 E-10	4.3 E-10	2.3 E-10	1.9 E-10
W-188	69.4 d	F	0.600	7.1 E-09	0.300	5.0 E-09	2.2 E-09	1.3 E-09	6.8 E-10	5.7 E-10

Reniu

Re-177	0.233 h	F	1.000	9.4 E-11	0.800	6.7 E-11	3.2 E-11	1.9 E-11	1.2 E-11	9.7 E-12
		M	1.000	1.1 E-10	0.800	7.9 E-11	3.9 E-11	2.5 E-11	1.7 E-11	1.4 E-11

Re-178	0.220 h	F	1.000	9.9 E-11	0.800	6.8 E-11	3.1 E-11	1.9 E-11	1.2 E-11	1.0 E-11
		M	1.000	1.3 E-10	0.800	8.5 E-11	3.9 E-11	2.6 E-11	1.7 E-11	1.4 E-11
Re-181	20.0 h	F	1.000	2.0 E-09	0.800	1.4 E-09	6.7 E-10	3.8 E-10	2.3 E-10	1.8 E-10
		M	1.000	2.1 E-09	0.800	1.5 E-09	7.4 E-10	4.6 E-10	3.1 E-10	2.5 E-10
Re-182	2.67 d	F	1.000	6.5 E-09	0.800	4.7 E-09	2.2 E-09	1.3 E-09	8.0 E-10	6.4 E-10
		M	1.000	8.7 E-09	0.800	6.3 E-09	3.4 E-09	2.2 E-09	1.5 E-09	1.2 E-09
Re-182	12.7 h	F	1.000	1.3 E-09	0.800	1.0 E-09	4.9 E-10	2.8 E-10	1.7 E-10	1.4 E-10
		M	1.000	1.4 E-09	0.800	1.1 E-09	5.7 E-10	3.6 E-10	2.5 E-10	2.0 E-10
Re-184	38.0 d	F	1.000	4.1 E-09	0.800	2.9 E-09	1.4 E-09	8.6 E-10	5.4 E-10	4.4 E-10
		M	1.000	9.1 E-09	0.800	6.8 E-09	4.0 E-09	2.8 E-09	2.4 E-09	1.9 E-09
Re-184m	165 d	F	1.000	6.6 E-09	0.800	4.6 E-09	2.0 E-09	1.2 E-09	7.3 E-10	5.9 E-10
		M	1.000	2.9 E-08	0.800	2.2 E-08	1.3 E-08	9.3 E-09	8.1 E-09	6.5 E-09
Re-186	3.78 d	F	1.000	7.3 E-09	0.800	4.7 E-09	2.0 E-09	1.1 E-09	6.6 E-10	5.2 E-10
		M	1.000	8.7 E-09	0.800	5.7 E-09	2.8 E-09	1.8 E-09	1.4 E-09	1.1 E-09
Re-186m	2.00 E+05 a	F	1.000	1.2 E-08	0.800	7.0 E-09	2.9 E-09	1.7 E-09	1.0 E-09	8.3 E-10
		M	1.000	5.9 E-08	0.800	4.6 E-08	2.7 E-08	1.8 E-08	1.4 E-08	1.2 E-08
Re-187	5.00 E+10 a	F	1.000	2.6 E-11	0.800	1.6 E-11	6.8 E-12	3.8 E-12	2.3 E-12	1.8 E-12
		M	1.000	5.7 E-11	0.800	4.1 E-11	2.0 E-11	1.2 E-11	7.5 E-12	6.3 E-12
Re-188	17.0 h	F	1.000	6.5 E-09	0.800	4.4 E-09	1.9 E-09	1.0 E-09	6.1 E-10	4.6 E-10
		M	1.000	6.0 E-09	0.800	4.0 E-09	1.8 E-09	1.0 E-09	6.8 E-10	5.4 E-10
Re-188m	0.310 h	F	1.000	1.4 E-10	0.800	9.1 E-11	4.0 E-11	2.1 E-11	1.3 E-11	1.0 E-11
		M	1.000	1.3 E-10	0.800	8.6 E-11	4.0 E-11	2.7 E-11	1.6 E-11	1.3 E-11
Re-189	1.01 d	F	1.000	3.7 E-09	0.800	2.5 E-09	1.1 E-09	5.8 E-10	3.5 E-10	2.7 E-10
		M	1.000	3.9 E-09	0.800	2.6 E-09	1.2 E-09	7.6 E-10	5.5 E-10	4.3 E-10

Osmiu

Os-180	0.366 h	F	0.020	7.1 E-11	0.010	5.3 E-11	2.6 E-11	1.6 E-11	1.0 E-11	8.2 E-12
		M	0.020	1.1 E-10	0.010	7.9 E-11	3.9 E-11	2.5 E-11	1.7 E-11	1.4 E-11

		S	0.020	1.1 E-10	0.010	8.2 E-11	4.1 E-11	2.6 E-11	1.8 E-11	1.5 E-11
Os-181	1.75 h	F	0.020	3.0 E-10	0.010	2.3 E-10	1.1 E-10	7.0 E-11	4.1 E-11	3.3 E-11
		M	0.020	4.5 E-10	0.010	3.4 E-10	1.8 E-10	1.1 E-10	7.6 E-11	6.2 E-11
		S	0.020	4.7 E-10	0.010	3.6 E-10	1.8 E-10	1.2 E-10	8.1 E-11	6.5 E-11
Os-182	22.0 h	F	0.020	1.6 E-09	0.010	1.2 E-09	6.0 E-10	3.7 E-10	2.1 E-10	1.7 E-10
		M	0.020	2.5 E-09	0.010	1.9 E-09	1.0 E-09	6.6 E-10	4.5 E-10	3.6 E-10
		S	0.020	2.6 E-09	0.010	2.0 E-09	1.0 E-09	6.9 E-10	4.8 E-10	3.8 E-10
Os-185	94.0 d	F	0.020	7.2 E-09	0.010	5.8 E-09	3.1 E-09	1.9 E-09	1.2 E-09	1.1 E-09
		M	0.020	6.6 E-09	0.010	5.4 E-09	2.9 E-09	2.0 E-09	1.5 E-09	1.3 E-09
		S	0.020	7.0 E-09	0.010	5.8 E-09	3.6 E-09	2.4 E-09	1.9 E-09	1.6 E-09
Os-189m	6.00 h	F	0.020	3.8 E-11	0.010	2.8 E-11	1.2 E-11	7.0 E-12	3.5 E-12	2.5 E-12
		M	0.020	6.5 E-11	0.010	4.1 E-11	1.8 E-11	1.1 E-11	6.0 E-12	5.0 E-12
		S	0.020	6.8 E-11	0.010	4.3 E-11	1.9 E-11	1.2 E-11	6.3 E-12	5.3 E-12
Os-191	15.4 d	F	0.020	2.8 E-09	0.010	1.9 E-09	8.5 E-10	5.3 E-10	3.0 E-10	2.5 E-10
		M	0.020	8.0 E-09	0.010	5.8 E-09	3.4 E-09	2.4 E-09	2.0 E-09	1.7 E-09
		S	0.020	9.0 E-09	0.010	6.5 E-09	3.9 E-09	2.7 E-09	2.3 E-09	1.9 E-09
Os-191m	13.0 h	F	0.020	3.0 E-10	0.010	2.0 E-10	8.8 E-11	5.4 E-11	2.9 E-11	2.4 E-11
		M	0.020	7.8 E-10	0.010	5.4 E-10	3.1 E-10	2.1 E-10	1.7 E-10	1.4 E-10
		S	0.020	8.5 E-10	0.010	6.0 E-10	3.4 E-10	2.4 E-10	2.0 E-10	1.6 E-10
Os-193	1.25 d	F	0.020	1.9 E-09	0.010	1.2 E-09	5.2 E-10	3.2 E-10	1.8 E-10	1.6 E-10
		M	0.020	3.8 E-09	0.010	2.6 E-09	1.3 E-09	8.4 E-10	5.9 E-10	4.8 E-10
		S	0.020	4.0 E-09	0.010	2.7 E-09	1.3 E-09	9.0 E-10	6.4 E-10	5.2 E-10
Os-194	6.00 a	F	0.020	8.7 E-08	0.010	6.8 E-08	3.4 E-08	2.1 E-08	1.3 E-08	1.1 E-08
		M	0.020	9.9 E-08	0.010	8.3 E-08	4.8 E-08	3.1 E-08	2.4 E-08	2.1 E-08
		S	0.020	2.6 E-07	0.010	2.4 E-07	1.6 E-07	1.1 E-07	8.8 E-08	8.5 E-08
Iridiu										
Ir-182	0.250 h	F	0.020	1.4 E-10	0.010	9.8 E-11	4.5 E-11	2.8 E-11	1.7 E-11	1.4 E-11
		M	0.020	2.1 E-10	0.010	1.4 E-10	6.7 E-11	4.3 E-11	2.8 E-11	2.3 E-11
		S	0.020	2.2 E-10	0.010	1.5 E-10	6.9 E-11	4.4 E-11	2.9 E-11	2.4 E-11
Ir-184	3.02 h	F	0.020	5.7 E-10	0.010	4.4 E-10	2.1 E-10	1.3 E-10	7.6 E-11	6.2 E-11
		M	0.020	8.6 E-10	0.010	6.4 E-10	3.2 E-10	2.1 E-10	1.4 E-10	1.1 E-10
		S	0.020	8.9 E-10	0.010	6.6 E-10	3.4 E-10	2.2 E-10	1.4 E-10	1.2 E-10
Ir-185	14.0 h	F	0.020	8.0 E-10	0.010	6.1 E-10	2.9 E-10	1.8 E-10	1.0 E-10	8.2 E-11
		M	0.020	1.3 E-09	0.010	9.7 E-10	4.9 E-10	3.2 E-10	2.2 E-10	1.8 E-10
		S	0.020	1.4 E-09	0.010	1.0 E-09	5.2 E-10	3.4 E-10	2.3 E-10	1.9 E-10
Ir-186	15.8 h	F	0.020	1.5 E-09	0.010	1.2 E-09	5.9 E-10	3.6 E-10	2.1 E-10	1.7 E-10
		M	0.020	2.2 E-09	0.010	1.7 E-09	8.8 E-10	5.8 E-10	3.8 E-10	3.1 E-10
		S	0.020	2.3 E-09	0.010	1.8 E-09	9.2 E-10	6.0 E-10	4.0 E-10	3.2 E-10
Ir-186	1.75 h	F	0.020	2.1 E-10	0.010	1.6 E-10	7.7 E-11	4.8 E-11	2.8 E-11	2.3 E-11
		M	0.020	3.3 E-10	0.010	2.4 E-10	1.2 E-10	7.7 E-11	5.1 E-11	4.2 E-11
		S	0.020	3.4 E-10	0.010	2.5 E-10	1.2 E-10	8.1 E-11	5.4 E-11	4.4 E-11
Ir-187	10.5 h	F	0.020	3.6 E-10	0.010	2.8 E-10	1.4 E-10	8.2 E-11	4.6 E-11	3.7 E-11
		M	0.020	5.8 E-10	0.010	4.3 E-10	2.2 E-10	1.4 E-10	9.2 E-11	7.4 E-11
		S	0.020	6.0 E-10	0.010	4.5 E-10	2.3 E-10	1.5 E-10	9.7 E-11	7.9 E-11
Ir-188	1.73 d	F	0.020	2.0 E-09	0.010	1.6 E-09	8.0 E-10	5.0 E-10	2.9 E-10	2.4 E-10
		M	0.020	2.7 E-09	0.010	2.1 E-09	1.1 E-09	7.5 E-10	5.0 E-10	4.0 E-10
		S	0.020	2.8 E-09	0.010	2.2 E-09	1.2 E-09	7.8 E-10	5.2 E-10	4.2 E-10
Ir-189	13.3 d	F	0.020	1.2 E-09	0.010	8.2 E-10	3.8 E-10	2.4 E-10	1.3 E-10	1.1 E-10
		M	0.020	2.7 E-09	0.010	1.9 E-09	1.1 E-09	7.7 E-10	6.4 E-10	5.2 E-10
		S	0.020	3.0 E-09	0.010	2.2 E-09	1.3 E-09	8.7 E-10	7.3 E-10	6.0 E-10
Ir-190	12.1 d	F	0.020	6.2 E-09	0.010	4.7 E-09	2.4 E-09	1.5 E-09	9.1 E-10	7.7 E-10
		M	0.020	1.1 E-08	0.010	8.6 E-09	4.4 E-09	3.1 E-09	2.7 E-09	2.1 E-09
		S	0.020	1.1 E-08	0.010	9.4 E-09	4.8 E-09	3.5 E-09	3.0 E-09	2.4 E-09

Ir-190m	3.10 h	F	0.020	4.2 E-10	0.010	3.4 E-10	1.7 E-10	1.0 E-10	6.0 E-11	4.9 E-11
		M	0.020	6.0 E-10	0.010	4.7 E-10	2.4 E-10	1.5 E-10	9.9 E-11	7.9 E-11
		S	0.020	6.2 E-10	0.010	4.8 E-10	2.5 E-10	1.6 E-10	1.0 E-10	8.3 E-11
Ir-190m	1.20 h	F	0.020	3.2 E-11	0.010	2.4 E-11	1.2 E-11	7.2 E-12	4.3 E-12	3.6 E-12
		M	0.020	5.7 E-11	0.010	4.2 E-11	2.0 E-11	1.4 E-11	1.2 E-11	9.3 E-12
		S	0.020	5.5 E-11	0.010	4.5 E-11	2.2 E-11	1.6 E-11	1.3 E-11	1.0 E-11
Ir-192	74.0 d	F	0.020	1.5 E-08	0.010	1.1 E-08	5.7 E-09	3.3 E-09	2.1 E-09	1.8 E-09
		M	0.020	2.3 E-08	0.010	1.8 E-08	1.1 E-08	7.6 E-09	6.4 E-09	5.2 E-09
		S	0.020	2.8 E-08	0.010	2.2 E-08	1.3 E-08	9.5 E-09	8.1 E-09	6.6 E-09
Ir-192m	2.41 E+02 a	F	0.020	2.7 E-08	0.010	2.3 E-08	1.4 E-08	8.2 E-09	5.4 E-09	4.8 E-09
		M	0.020	2.3 E-08	0.010	2.1 E-08	1.3 E-08	8.4 E-09	6.6 E-09	5.8 E-09
		S	0.020	9.2 E-08	0.010	9.1 E-08	6.5 E-08	4.5 E-08	4.0 E-08	3.9 E-08
Ir-193m	11.9 d	F	0.020	1.2 E-09	0.010	8.4 E-10	3.7 E-10	2.2 E-10	1.2 E-10	1.0 E-10
		M	0.020	4.8 E-09	0.010	3.5 E-09	2.1 E-09	1.5 E-09	1.4 E-09	1.1 E-09
		S	0.020	5.4 E-09	0.010	4.0 E-09	2.4 E-09	1.8 E-09	1.6 E-09	1.3 E-09
Ir-194	19.1 h	F	0.020	2.9 E-09	0.010	1.9 E-09	8.1 E-10	4.9 E-10	2.5 E-10	2.1 E-10
		M	0.020	5.3 E-09	0.010	3.5 E-09	1.6 E-09	1.0 E-09	6.3 E-10	5.2 E-10
		S	0.020	5.5 E-09	0.010	3.7 E-09	1.7 E-09	1.1 E-09	6.7 E-10	5.6 E-10
Ir-194m	171 d	F	0.020	3.4 E-08	0.010	2.7 E-08	1.4 E-08	9.5 E-09	6.2 E-09	5.4 E-09
		M	0.020	3.9 E-08	0.010	3.2 E-08	1.9 E-08	1.3 E-08	1.1 E-08	9.0 E-09
		S	0.020	5.0 E-08	0.010	4.2 E-08	2.6 E-08	1.8 E-08	1.5 E-08	1.3 E-08
Ir-195	2.50 h	F	0.020	2.9 E-10	0.010	1.9 E-10	8.1 E-11	5.1 E-11	2.9 E-11	2.4 E-11
		M	0.020	5.4 E-10	0.010	3.6 E-10	1.7 E-10	1.1 E-10	8.1 E-11	6.7 E-11
		S	0.020	5.7 E-10	0.010	3.8 E-10	1.8 E-10	1.2 E-10	8.7 E-11	7.1 E-11
Ir-195m	3.80 h	F	0.020	6.9 E-10	0.010	4.8 E-10	2.1 E-10	1.3 E-10	7.2 E-11	6.0 E-11
		M	0.020	1.2 E-09	0.010	8.6 E-10	4.2 E-10	2.7 E-10	1.9 E-10	1.6 E-10
		S	0.020	1.3 E-09	0.010	9.0 E-10	4.4 E-10	2.9 E-10	2.0 E-10	1.7 E-10
Platină										
Pt-186	2.00 h	F	0.020	3.0 E-10	0.010	2.4 E-10	1.2 E-10	7.2 E-11	4.1 E-11	3.3 E-11
Pt-188	10.2 d	F	0.020	3.6 E-09	0.010	2.7 E-09	1.3 E-09	8.4 E-10	5.0 E-10	4.2 E-10
Pt-189	10.9 h	F	0.020	3.8 E-10	0.010	2.9 E-10	1.4 E-10	8.4 E-11	4.7 E-11	3.8 E-11
Pt-191	2.80 d	F	0.020	1.1 E-09	0.010	7.9 E-10	3.7 E-10	2.3 E-10	1.3 E-10	1.1 E-10
Pt-193	50.0 a	F	0.020	2.2 E-10	0.010	1.6 E-10	7.2 E-11	4.3 E-11	2.5 E-11	2.1 E-11
Pt-193m	4.33 d	F	0.020	1.6 E-09	0.010	1.0 E-09	4.5 E-10	2.7 E-10	1.4 E-10	1.2 E-10
Pt-195m	4.02 d	F	0.020	2.2 E-09	0.010	1.5 E-09	6.4 E-10	3.9 E-10	2.1 E-10	1.8 E-10
Pt-197	18.3 h	F	0.020	1.1 E-09	0.010	7.3 E-10	3.1 E-10	1.9 E-10	1.0 E-10	8.5 E-11
Pt-197m	1.57 h	F	0.020	2.8 E-10	0.010	1.8 E-10	7.9 E-11	4.9 E-11	2.8 E-11	2.4 E-11
Pt-199	0.513 h	F	0.020	1.3 E-10	0.010	8.3 E-11	3.6 E-11	2.3 E-11	1.4 E-11	1.2 E-11
Pt-200	12.5 h	F	0.020	2.6 E-09	0.010	1.7 E-09	7.2 E-10	5.1 E-10	2.6 E-10	2.2 E-10
Aur										
Au-193	17.6 h	F	0.200	3.7 E-10	0.100	2.8 E-10	1.3 E-10	7.9 E-11	4.3 E-11	3.6 E-11
		M	0.200	7.5 E-10	0.100	5.6 E-10	2.8 E-10	1.9 E-10	1.4 E-10	1.1 E-10
		S	0.200	7.9 E-10	0.100	5.9 E-10	3.0 E-10	2.0 E-10	1.5 E-10	1.2 E-10
Au-194	1.65 d	F	0.200	1.2 E-09	0.100	9.6 E-10	4.9 E-10	3.0 E-10	1.8 E-10	1.4 E-10
		M	0.200	1.7 E-09	0.100	1.4 E-09	7.1 E-10	4.6 E-10	2.9 E-10	2.3 E-10
		S	0.200	1.7 E-09	0.100	1.4 E-09	7.3 E-10	4.7 E-10	3.0 E-10	2.4 E-10
Au-195	183 d	F	0.200	7.2 E-10	0.100	5.3 E-10	2.5 E-10	1.5 E-10	8.1 E-11	6.6 E-11
		M	0.200	5.2 E-09	0.100	4.1 E-09	2.4 E-09	1.6 E-09	1.4 E-09	1.1 E-09
		S	0.200	8.1 E-09	0.100	6.6 E-09	3.9 E-09	2.6 E-09	2.1 E-09	1.7 E-09
Au-198	2.69 d	F	0.200	2.4 E-09	0.100	1.7 E-09	7.6 E-10	4.7 E-10	2.5 E-10	2.1 E-10
		M	0.200	5.0 E-09	0.100	4.1 E-09	1.9 E-09	1.3 E-09	9.7 E-10	7.8 E-10
		S	0.200	5.4 E-09	0.100	4.4 E-09	2.0 E-09	1.4 E-09	1.1 E-09	8.6 E-10
Au-198m	2.30 d	F	0.200	3.3 E-09	0.100	2.4 E-09	1.1 E-09	6.9 E-10	3.7 E-10	3.2 E-10

		M	0.200	8.7 E-09	0.100	6.5 E-09	3.6 E-09	2.6 E-09	2.2 E-09	1.8 E-09
		S	0.200	9.5 E-09	0.100	7.1 E-09	4.0 E-09	2.9 E-09	2.5 E-09	2.0 E-09
Au-199	3.14 d	F	0.200	1.1 E-09	0.100	7.9 E-10	3.5 E-10	2.2 E-10	1.1 E-10	9.8 E-11
		M	0.200	3.4 E-09	0.100	2.5 E-09	1.4 E-09	1.0 E-09	9.0 E-10	7.1 E-10
		S	0.200	3.8 E-09	0.100	2.8 E-09	1.6 E-09	1.2 E-09	1.0 E-09	7.9 E-10
Au-200	0.807 h	F	0.200	1.9 E-10	0.100	1.2 E-10	5.2 E-11	3.2 E-11	1.9 E-11	1.6 E-11
		M	0.200	3.2 E-10	0.100	2.1 E-10	9.3 E-11	6.0 E-11	4.0 E-11	3.3 E-11
		S	0.200	3.4 E-10	0.100	2.1 E-10	9.8 E-11	6.3 E-11	4.2 E-11	3.5 E-11
Au-200m	18.7 h	F	0.200	2.7 E-09	0.100	2.1 E-09	1.0 E-09	6.4 E-10	3.6 E-10	2.9 E-10
		M	0.200	4.8 E-09	0.100	3.7 E-09	1.9 E-09	1.2 E-09	8.4 E-10	6.8 E-10
		S	0.200	5.1 E-09	0.100	3.9 E-09	2.0 E-09	1.3 E-09	8.9 E-10	7.2 E-10
Au-201	0.440 h	F	0.200	9.0 E-11	0.100	5.7 E-11	2.5 E-11	1.6 E-11	1.0 E-11	8.7 E-12
		M	0.200	1.5 E-10	0.100	9.6 E-11	4.3 E-11	2.9 E-11	2.0 E-11	1.7 E-11
		S	0.200	1.5 E-10	0.100	1.0 E-10	4.5 E-11	3.0 E-11	2.1 E-11	1.7 E-11
Mercur										
Hg-193 (organic)	3.50 h	F	0.800	2.2 E-10	0.400	1.8 E-10	8.2 E-11	5.0 E-11	2.9 E-11	2.4 E-11
Hg-193 (anorganic)	3.50 h	F	0.040	2.7 E-10	0.020	2.0 E-10	8.9 E-11	5.5 E-11	3.1 E-11	2.6 E-11
		M	0.040	5.3 E-10	0.020	3.8 E-10	1.9 E-10	1.3 E-10	9.2 E-11	7.5 E-11
Hg-193m (organic)	11.1 h	F	0.800	8.4 E-10	0.400	7.6 E-10	3.7 E-10	2.2 E-10	1.3 E-10	1.0 E-10
Hg-193m (anorganic)	11.1 h	F	0.040	1.1 E-09	0.020	8.5 E-10	4.1 E-10	2.5 E-10	1.4 E-10	1.1 E-10
		M	0.040	1.9 E-09	0.020	1.4 E-09	7.2 E-10	4.7 E-10	3.2 E-10	2.6 E-10
Hg-194 (organic)	2.60 E+02 a	F	0.800	4.9 E-08	0.400	3.7 E-08	2.4 E-08	1.9 E-08	1.5 E-08	1.4 E-08
Hg-194 (anorganic)	2.60 E+02 a	F	0.040	3.2 E-08	0.020	2.9 E-08	2.0 E-08	1.6 E-08	1.4 E-08	1.3 E-08
		M	0.040	2.1 E-08	0.020	1.9 E-08	1.3 E-08	1.0 E-08	8.9 E-09	8.3 E-09
Hg-195 (organic)	9.90 h	F	0.800	2.0 E-10	0.400	1.8 E-10	8.5 E-11	5.1 E-11	2.8 E-11	2.3 E-11
Hg-195 (anorganic)	9.90 h	F	0.040	2.7 E-10	0.020	2.0 E-10	9.5 E-11	5.7 E-11	3.1 E-11	2.5 E-11
		M	0.040	5.3 E-10	0.020	3.9 E-10	2.0 E-10	1.3 E-10	9.0 E-11	7.3 E-11
Hg-195m (organic)	1.73 d	F	0.800	1.1 E-09	0.400	9.7 E-10	4.4 E-10	2.7 E-10	1.4 E-10	1.2 E-10
Hg-195m (anorganic)	1.73 d	F	0.040	1.6 E-09	0.020	1.1 E-09	5.1 E-10	3.1 E-10	1.7 E-10	1.4 E-10
		M	0.040	3.7 E-09	0.020	2.6 E-09	1.4 E-09	8.5 E-10	6.7 E-10	5.3 E-10
Hg-197 (organic)	2.67 d	F	0.800	4.7 E-10	0.400	4.0 E-10	1.8 E-10	1.1 E-10	5.8 E-11	4.7 E-11
Hg-197 (anorganic)	2.67 d	F	0.040	6.8 E-10	0.020	4.7 E-10	2.1 E-10	1.3 E-10	6.8 E-11	5.6 E-11
		M	0.040	1.7 E-09	0.020	1.2 E-09	6.6 E-10	4.6 E-10	3.8 E-10	3.0 E-10
Hg-197m (organic)	23.8 h	F	0.800	9.3 E-10	0.400	7.8 E-10	3.4 E-10	2.1 E-10	1.1 E-10	9.6 E-11
Hg-197m (anorganic)	23.8 h	F	0.040	1.4 E-09	0.020	9.3 E-10	4.0 E-10	2.5 E-10	1.3 E-10	1.1 E-10
		M	0.040	3.5 E-09	0.020	2.5 E-09	1.1 E-09	8.2 E-10	6.7 E-10	5.3 E-10
Hg-199m (organic)	0.710 h	F	0.800	1.4 E-10	0.400	9.6 E-11	4.2 E-11	2.7 E-11	1.7 E-11	1.5 E-11
Hg-199m (anorganic)	0.710 h	F	0.040	1.4 E-10	0.020	9.6 E-11	4.2 E-11	2.7 E-11	1.7 E-11	1.5 E-11
		M	0.040	2.5 E-10	0.020	1.7 E-10	7.9 E-11	5.4 E-11	3.8 E-11	3.2 E-11
Hg-203 (organic)	46.6 d	F	0.800	5.7 E-09	0.400	3.7 E-09	1.7 E-09	1.1 E-09	6.6 E-10	5.6 E-10
Hg-203 (anorganic)	46.6 d	F	0.040	4.2 E-09	0.020	2.9 E-09	1.4 E-09	9.0 E-10	5.5 E-10	4.6 E-10
		M	0.040	1.0 E-08	0.020	7.9 E-09	4.7 E-09	3.4 E-09	3.0 E-09	2.4 E-09
Taliu										
Tl-194	0.550 h	F	1.000	3.6 E-11	1.000	3.0 E-11	1.5 E-11	9.2 E-12	5.5 E-12	4.4 E-12

Tl-194m	0.546 h	F	1.000	1.7 E-10	1.000	1.2 E-10	6.1 E-11	3.8 E-11	2.3 E-11	1.9 E-11
Tl-195	1.16 h	F	1.000	1.3 E-10	1.000	1.0 E-10	5.3 E-11	3.2 E-11	1.9 E-11	1.5 E-11
Tl-197	2.84 h	F	1.000	1.3 E-10	1.000	9.7 E-11	4.7 E-11	2.9 E-11	1.7 E-11	1.4 E-11
Tl-198	5.30 h	F	1.000	4.7 E-10	1.000	4.0 E-10	2.1 E-10	1.3 E-10	7.5 E-11	6.0 E-11
Tl-198m	1.87 h	F	1.000	3.2 E-10	1.000	2.5 E-10	1.2 E-10	7.5 E-11	4.5 E-11	3.7 E-11
Tl-199	7.42 h	F	1.000	1.7 E-10	1.000	1.3 E-10	6.4 E-11	3.9 E-11	2.3 E-11	1.9 E-11
Tl-200	1.09 d	F	1.000	1.0 E-09	1.000	8.7 E-10	4.6 E-10	2.8 E-10	1.6 E-10	1.3 E-10
Tl-201	3.04 d	F	1.000	4.5 E-10	1.000	3.3 E-10	1.5 E-10	9.4 E-11	5.4 E-11	4.4 E-11
Tl-202	12.2 d	F	1.000	1.5 E-09	1.000	1.2 E-09	5.9 E-10	3.8 E-10	2.3 E-10	1.9 E-10
Tl-204	3.78 a	F	1.000	5.0 E-09	1.000	3.3 E-09	1.5 E-09	8.8 E-10	4.7 E-10	3.9 E-10
Plumb (*)										
Pb-195m	0.263 h	F	0.600	1.3 E-10	0.200	1.0 E-10	4.9 E-11	3.1 E-11	1.9 E-11	1.6 E-11
		M	0.200	2.0 E-10	0.100	1.5 E-10	7.1 E-11	4.6 E-11	3.1 E-11	2.5 E-11
		S	0.020	2.1 E-10	0.010	1.5 E-10	7.4 E-11	4.8 E-11	3.2 E-11	2.7 E-11
Pb-198	2.40 h	F	0.600	3.4 E-10	0.200	2.9 E-10	1.5 E-10	8.9 E-11	5.2 E-11	4.3 E-11
		M	0.200	5.0 E-10	0.100	4.0 E-10	2.1 E-10	1.3 E-10	8.3 E-11	6.6 E-11
		S	0.020	5.4 E-10	0.010	4.2 E-10	2.2 E-10	1.4 E-10	8.7 E-11	7.0 E-11
Pb-199	1.50 h	F	0.600	1.9 E-10	0.200	1.6 E-10	8.2 E-11	4.9 E-11	2.9 E-11	2.3 E-11
		M	0.200	2.8 E-10	0.100	2.2 E-10	1.1 E-10	7.1 E-11	4.5 E-11	3.6 E-11
		S	0.020	2.9 E-10	0.010	2.3 E-10	1.2 E-10	7.4 E-11	4.7 E-11	3.7 E-11

Pb-200	21.5 h	F	0.600	1.1 E-09	0.200	9.3 E-10	4.6 E-10	2.8 E-10	1.6 E-10	1.4 E-10
		M	0.200	2.2 E-09	0.100	1.7 E-09	8.6 E-10	5.7 E-10	4.1 E-10	3.3 E-10
		S	0.020	2.4 E-09	0.010	1.8 E-09	9.2 E-10	6.2 E-10	4.4 E-10	3.5 E-10
Pb-201	9.40 h	F	0.600	4.8 E-10	0.200	4.1 E-10	2.0 E-10	1.2 E-10	7.1 E-11	6.0 E-11
		M	0.200	8.0 E-10	0.100	6.4 E-10	3.3 E-10	2.1 E-10	1.4 E-10	1.1 E-10
		S	0.020	8.8 E-10	0.010	6.7 E-10	3.5 E-10	2.2 E-10	1.5 E-10	1.2 E-10
Pb-202	3.00 E+05 a	F	0.600	1.9 E-08	0.200	1.3 E-08	8.9 E-09	1.3 E-08	1.8 E-08	1.1 E-08
		M	0.200	1.2 E-08	0.100	8.9 E-09	6.2 E-09	6.7 E-09	8.7 E-09	6.3 E-09
		S	0.020	2.8 E-08	0.010	2.8 E-08	2.0 E-08	1.4 E-08	1.3 E-08	1.2 E-08
Pb-202m	3.62 h	F	0.600	4.7 E-10	0.200	4.0 E-10	2.1 E-10	1.3 E-10	7.5 E-11	6.2 E-11
		M	0.200	6.9 E-10	0.100	5.6 E-10	2.9 E-10	1.9 E-10	1.2 E-10	9.5 E-11
		S	0.020	7.3 E-10	0.010	5.8 E-10	3.0 E-10	1.9 E-10	1.3 E-10	1.0 E-10
Pb-203	2.17 d	F	0.600	7.2 E-10	0.200	5.8 E-10	2.8 E-10	1.7 E-10	9.9 E-11	8.5 E-11
		M	0.200	1.3 E-09	0.100	1.0 E-09	5.4 E-10	3.6 E-10	2.5 E-10	2.0 E-10
		S	0.020	1.5 E-09	0.010	1.1 E-09	5.8 E-10	3.8 E-10	2.8 E-10	2.2 E-10
Pb-205	1.43 E+07 a	F	0.600	1.1 E-09	0.200	6.9 E-10	4.0 E-10	4.1 E-10	4.3 E-10	3.3 E-10
		M	0.200	1.1 E-09	0.100	7.7 E-10	4.3 E-10	3.2 E-10	2.9 E-10	2.5 E-10
		S	0.020	2.9 E-09	0.010	2.7 E-09	1.7 E-09	1.1 E-09	9.2 E-10	8.5 E-10
Pb-209	3.25 h	F	0.600	1.8 E-10	0.200	1.2 E-10	5.3 E-11	3.4 E-11	1.9 E-11	1.7 E-11
		M	0.200	4.0 E-10	0.100	2.7 E-10	1.3 E-10	9.2 E-11	6.9 E-11	5.6 E-11
		S	0.020	4.4 E-10	0.010	2.9 E-10	1.4 E-10	9.9 E-11	7.5 E-11	6.1 E-11
Pb-210	22.3 a	F	0.600	4.7 E-06	0.200	2.9 E-06	1.5 E-06	1.4 E-06	1.3 E-06	9.0 E-07
		M	0.200	5.0 E-06	0.100	3.7 E-06	2.2 E-06	1.5 E-06	1.3 E-06	1.1 E-06
		S	0.020	1.8 E-05	0.010	1.8 E-05	1.1 E-05	7.2 E-06	5.9 E-06	5.6 E-06
Pb-211	0.601 h	F	0.600	2.5 E-08	0.200	1.7 E-08	8.7 E-09	6.1 E-09	4.6 E-09	3.9 E-09
		M	0.200	6.2 E-08	0.100	4.5 E-08	2.5 E-08	1.9 E-08	1.4 E-08	1.1 E-08
		S	0.020	6.6 E-08	0.010	4.8 E-08	2.7 E-08	2.0 E-08	1.5 E-08	1.2 E-08
Pb-212	10.6 h	F	0.600	1.9 E-07	0.200	1.2 E-07	5.4 E-08	3.5 E-08	2.0 E-08	1.8 E-08
		M	0.200	6.2 E-07	0.100	4.6 E-07	3.0 E-07	2.2 E-07	2.2 E-07	1.7 E-07
		S	0.020	6.7 E-07	0.010	5.0 E-07	3.3 E-07	2.5 E-07	2.4 E-07	1.9 E-07
Pb-214	0.447 h	F	0.600	2.2 E-08	0.200	1.5 E-08	6.9 E-09	4.8 E-09	3.3 E-09	2.8 E-09

		M	0.200	6.4 E-08	0.100	4.6 E-08	2.6 E-08	1.9 E-08	1.4 E-08	1.4 E-08
		S	0.020	6.9 E-08	0.010	5.0 E-08	2.8 E-08	2.1 E-08	1.5 E-08	1.5 E-08
Bismut										
Bi-200	0.606 h	F	0.100	1.9 E-10	0.050	1.5 E-10	7.4 E-11	4.5 E-11	2.7 E-11	2.2 E-11
		M	0.100	2.5 E-10	0.050	1.9 E-10	9.9 E-11	6.3 E-11	4.1 E-11	3.3 E-11
Bi-201	1.80 h	F	0.100	4.0 E-10	0.050	3.1 E-10	1.5 E-10	9.3 E-11	5.4 E-11	4.4 E-11
		M	0.100	5.5 E-10	0.050	4.1 E-10	2.0 E-10	1.3 E-10	8.3 E-11	6.6 E-11
Bi-202	1.67 h	F	0.100	3.4 E-10	0.050	2.8 E-10	1.5 E-10	9.0 E-11	5.3 E-11	4.3 E-11
		M	0.100	4.2 E-10	0.050	3.4 E-10	1.8 E-10	1.1 E-10	6.9 E-11	5.5 E-11
Bi-203	11.8 h	F	0.100	1.5 E-09	0.050	1.2 E-09	6.4 E-10	4.0 E-10	2.3 E-10	1.9 E-10
		M	0.100	2.0 E-09	0.050	1.6 E-09	8.2 E-10	5.3 E-10	3.3 E-10	2.6 E-10
Bi-205	15.3 d	F	0.100	3.0 E-09	0.050	2.4 E-09	1.3 E-09	8.0 E-10	4.7 E-10	3.8 E-10
		M	0.100	5.5 E-09	0.050	4.4 E-09	2.5 E-09	1.6 E-09	1.2 E-09	9.3 E-10
Bi-206	6.24 d	F	0.100	6.1 E-09	0.050	4.8 E-09	2.5 E-09	1.6 E-09	9.1 E-10	7.4 E-10
		M	0.100	1.0 E-08	0.050	8.0 E-09	4.4 E-09	2.9 E-09	2.1 E-09	1.7 E-09
Bi-207	38.0 a	F	0.100	4.3 E-09	0.050	3.3 E-09	1.7 E-09	1.0 E-09	6.0 E-10	4.9 E-10
		M	0.100	2.3 E-08	0.050	2.0 E-08	1.2 E-08	8.2 E-09	6.5 E-09	5.6 E-09
Bi-210	5.01 d	F	0.100	1.1 E-08	0.050	6.9 E-09	3.2 E-09	2.1 E-09	1.3 E-09	1.1 E-09
		M	0.100	3.9 E-07	0.050	3.0 E-07	1.9 E-07	1.3 E-07	1.1 E-07	9.3 E-08
Bi-210m	3.00 E+06 a	F	0.100	4.1 E-07	0.050	2.6 E-07	1.3 E-07	8.3 E-08	5.6 E-08	4.6 E-08
		M	0.100	1.5 E-05	0.050	1.1 E-05	7.0 E-06	4.8 E-06	4.1 E-06	3.4 E-06
Bi-212	1.01 h	F	0.100	6.5 E-08	0.050	4.5 E-08	2.1 E-08	1.5 E-08	1.0 E-08	9.1 E-09
		M	0.100	1.6 E-07	0.050	1.1 E-07	6.0 E-08	4.4 E-08	3.8 E-08	3.1 E-08
Bi-213	0.761 h	F	0.100	7.7 E-08	0.050	5.3 E-08	2.5 E-08	1.7 E-08	1.2 E-08	1.0 E-08
		M	0.100	1.6 E-07	0.050	1.2 E-07	6.0 E-08	4.4 E-08	3.6 E-08	3.0 E-08
Bi-214	0.332 h	F	0.100	5.0 E-08	0.050	3.5 E-08	1.6 E-08	1.1 E-08	8.2 E-09	7.1 E-09
		M	0.100	8.7 E-08	0.050	6.1 E-08	3.1 E-08	2.2 E-08	1.7 E-08	1.4 E-08
Poloniu										
Po-203	0.612 h	F	0.200	1.9 E-10	0.100	1.5 E-10	7.7 E-11	4.7 E-11	2.8 E-11	2.3 E-11
		M	0.200	2.7 E-10	0.100	2.1 E-10	1.1 E-10	6.7 E-11	4.3 E-11	3.5 E-11
		S	0.020	2.8 E-10	0.010	2.2 E-10	1.1 E-10	7.0 E-11	4.5 E-11	3.6 E-11
Po-205	1.80 h	F	0.200	2.6 E-10	0.100	2.1 E-10	1.1 E-10	6.6 E-11	4.1 E-11	3.3 E-11
		M	0.200	4.0 E-10	0.100	3.1 E-10	1.7 E-10	1.1 E-10	8.1 E-11	6.5 E-11
		S	0.020	4.2 E-10	0.010	3.2 E-10	1.8 E-10	1.2 E-10	8.5 E-11	6.9 E-11
Po-207	5.83 h	F	0.200	4.8 E-10	0.100	4.0 E-10	2.1 E-10	1.3 E-10	7.3 E-11	5.8 E-11
		M	0.200	6.2 E-10	0.100	5.1 E-10	2.6 E-10	1.6 E-10	9.9 E-11	7.8 E-11
		S	0.020	6.6 E-10	0.010	5.3 E-10	2.7 E-10	1.7 E-10	1.0 E-10	8.2 E-11
Po-210	138 d	F	0.200	7.4 E-06	0.100	4.8 E-06	2.2 E-06	1.3 E-06	7.7 E-07	6.1 E-07
		M	0.200	1.5 E-05	0.100	1.1 E-05	6.7 E-06	4.6 E-06	4.0 E-06	3.3 E-06
		S	0.020	1.8 E-05	0.010	1.4 E-05	8.6 E-06	5.9 E-06	5.1 E-06	4.3 E-06
Astatin										
At-207	1.80 h	F	1.000	2.4 E-09	1.000	1.7 E-09	8.9 E-10	5.9 E-10	4.0 E-10	3.3 E-10
		M	1.000	9.2 E-09	1.000	6.7 E-09	4.3 E-09	3.1 E-09	2.9 E-09	2.3 E-09
At-211	7.21 h	F	1.000	1.4 E-07	1.000	9.7 E-08	4.3 E-08	2.8 E-08	1.7 E-08	1.6 E-08
		M	1.000	5.2 E-07	1.000	3.7 E-07	1.9 E-07	1.4 E-07	1.3 E-07	1.1 E-07
Franciu										
Fr-222	0.240 h	F	1.000	9.1 E-08	1.000	6.3 E-08	3.0 E-08	2.1 E-08	1.6 E-08	1.4 E-08
Fr-223	0.363 h	F	1.000	1.1 E-08	1.000	7.3 E-09	3.2 E-09	1.9 E-09	1.0 E-09	8.9 E-10
Radiu (*)										
Ra-223	11.4 d	F	0.600	3.0 E-06	0.200	1.0 E-06	4.9 E-07	4.0 E-07	3.3 E-07	1.2 E-07
		M	0.200	2.8 E-05	0.100	2.1 E-05	1.3 E-05	9.9 E-06	9.4 E-06	7.4 E-06
		S	0.020	3.2 E-05	0.010	2.4 E-05	1.5 E-05	1.1 E-05	1.1 E-05	8.7 E-06
Ra-224	3.66 d	F	0.600	1.5 E-06	0.200	6.0 E-07	2.9 E-07	2.2 E-07	1.7 E-07	7.5 E-08

		M	0.200	1.1 E-05	0.100	8.2 E-06	5.3 E-06	3.9 E-06	3.7 E-06	3.0 E-06
		S	0.020	1.2 E-05	0.010	9.2 E-06	5.9 E-06	4.4 E-06	4.2 E-06	3.4 E-06
Ra-225	14.8 d	F	0.600	4.0 E-06	0.200	1.2 E-06	5.6 E-07	4.6 E-07	3.8 E-07	1.3 E-07
		M	0.200	2.4 E-05	0.100	1.8 E-05	1.1 E-05	8.4 E-06	7.9 E-06	6.3 E-06
		S	0.020	2.8 E-05	0.010	2.2 E-05	1.4 E-05	1.0 E-05	9.8 E-06	7.7 E-06
Ra-226	1.60 E+03 a	F	0.600	2.6 E-06	0.200	9.4 E-07	5.5 E-07	7.2 E-07	1.3 E-06	3.6 E-07
		M	0.200	1.5 E-05	0.100	1.1 E-05	7.0 E-06	4.9 E-06	4.5 E-06	3.5 E-06
		S	0.020	3.4 E-05	0.010	2.9 E-05	1.9 E-05	1.2 E-05	1.0 E-05	9.5 E-06
Ra-227	0.703 h	F	0.600	1.5 E-09	0.200	1.2 E-09	7.8 E-10	6.1 E-10	5.3 E-10	4.6 E-10
		M	0.200	8.0 E-10	0.100	6.7 E-10	4.4 E-10	3.2 E-10	2.9 E-10	2.8 E-10
		S	0.020	1.0 E-09	0.010	8.5 E-10	4.4 E-10	2.9 E-10	2.4 E-10	2.2 E-10
Ra-228	5.75 a	F	0.600	1.7 E-05	0.200	5.7 E-06	3.1 E-06	3.6 E-06	4.6 E-06	9.0 E-07
		M	0.200	1.5 E-05	0.100	1.0 E-05	6.3 E-06	4.6 E-06	4.4 E-06	2.6 E-06
		S	0.020	4.9 E-05	0.010	4.8 E-05	3.2 E-05	2.0 E-05	1.6 E-05	1.6 E-05
Actiniu										
Ac-224	2.90 h	F	0.005	1.3 E-07	5.0 E-04	8.9 E-08	4.7 E-08	3.1 E-08	1.4 E-08	1.1 E-08
		M	0.005	4.2 E-07	5.0 E-04	3.2 E-07	2.0 E-07	1.5 E-07	1.4 E-07	1.1 E-07
		S	0.005	4.6 E-07	5.0 E-04	3.5 E-07	2.2 E-07	1.7 E-07	1.6 E-07	1.3 E-07

Ac-225	10.0 d	F	0.005	1.1 E-05	5.0 E-04	7.7 E-06	4.0 E-06	2.6 E-06	1.1 E-06	8.8 E-07
		M	0.005	2.8 E-05	5.0 E-04	2.1 E-05	1.3 E-05	1.0 E-05	9.3 E-06	7.4 E-06
		S	0.005	3.1 E-05	5.0 E-04	2.3 E-05	1.5 E-05	1.1 E-05	1.1 E-05	8.5 E-06
Ac-226	1.21 d	F	0.005	1.5 E-06	5.0 E-04	1.1 E-06	4.0 E-07	2.6 E-07	1.2 E-07	9.6 E-08
		M	0.005	4.3 E-06	5.0 E-04	3.2 E-06	2.1 E-06	1.5 E-06	1.5 E-06	1.2 E-06
		S	0.005	4.7 E-06	5.0 E-04	3.5 E-06	2.3 E-06	1.7 E-06	1.6 E-06	1.3 E-06
Ac-227	21.8 a	F	0.005	1.7 E-03	5.0 E-04	1.6 E-03	1.0 E-03	7.2 E-04	5.6 E-04	5.5 E-04
		M	0.005	5.7 E-04	5.0 E-04	5.5 E-04	3.9 E-04	2.6 E-04	2.3 E-04	2.2 E-04
		S	0.005	2.2 E-04	5.0 E-04	2.0 E-04	1.3 E-04	8.7 E-05	7.6 E-05	7.2 E-05
Ac-228	6.13 h	F	0.005	1.8 E-07	5.0 E-04	1.6 E-07	9.7 E-08	5.7 E-08	2.9 E-08	2.5 E-08
		M	0.005	8.4 E-08	5.0 E-04	7.3 E-08	4.7 E-08	2.9 E-08	2.0 E-08	1.7 E-08
		S	0.005	6.4 E-08	5.0 E-04	5.3 E-08	3.3 E-08	2.2 E-08	1.9 E-08	1.6 E-08

Toriu										
Th-226	0.515 h	F	0.005	1.4 E-07	5.0 E-04	1.0 E-07	4.8 E-08	3.4 E-08	2.5 E-08	2.2 E-08
		M	0.005	3.0 E-07	5.0 E-04	2.1 E-07	1.1 E-07	8.3 E-08	7.0 E-08	5.8 E-08
		S	0.005	3.1 E-07	5.0 E-04	2.2 E-07	1.2 E-07	8.8 E-08	7.5 E-08	6.1 E-08
Th-227	18.7 d	F	0.005	8.4 E-06	5.0 E-04	5.2 E-06	2.6 E-06	1.6 E-06	1.0 E-06	6.7 E-07
		M	0.005	3.2 E-05	5.0 E-04	2.5 E-05	1.6 E-05	1.1 E-05	1.1 E-05	8.5 E-06
		S	0.005	3.9 E-05	5.0 E-04	3.0 E-05	1.9 E-05	1.4 E-05	1.3 E-05	1.0 E-05
Th-228	1.91 a	F	0.005	1.8 E-04	5.0 E-04	1.5 E-04	8.3 E-05	5.2 E-05	3.6 E-05	2.9 E-05
		M	0.005	1.3 E-04	5.0 E-04	1.1 E-04	6.8 E-05	4.6 E-05	3.9 E-05	3.2 E-05
		S	0.005	1.6 E-04	5.0 E-04	1.3 E-04	8.2 E-05	5.5 E-05	4.7 E-05	4.0 E-05
Th-229	7.34 E+03 a	F	0.005	5.4 E-04	5.0 E-04	5.1 E-04	3.6 E-04	2.9 E-04	2.4 E-04	2.4 E-04
		M	0.005	2.3 E-04	5.0 E-04	2.1 E-04	1.6 E-04	1.2 E-04	1.1 E-04	1.1 E-04
		S	0.005	2.1 E-04	5.0 E-04	1.9 E-04	1.3 E-04	8.7 E-05	7.6 E-05	7.1 E-05
Th-230	7.70 E+04 a	F	0.005	2.1 E-04	5.0 E-04	2.0 E-04	1.4 E-04	1.1 E-04	9.9 E-05	1.0 E-04
		M	0.005	7.7 E-05	5.0 E-04	7.4 E-05	5.5 E-05	4.3 E-05	4.2 E-05	4.3 E-05
		S	0.005	4.0 E-05	5.0 E-04	3.5 E-05	2.4 E-05	1.6 E-05	1.5 E-05	1.4 E-05
Th-231	1.06 d	F	0.005	1.1 E-09	5.0 E-04	7.2 E-10	2.6 E-10	1.6 E-10	9.2 E-11	7.8 E-11
		M	0.005	2.2 E-09	5.0 E-04	1.6 E-09	8.0 E-10	4.8 E-10	3.8 E-10	3.1 E-10
		S	0.005	2.4 E-09	5.0 E-04	1.7 E-09	7.6 E-10	5.2 E-10	4.1 E-10	3.3 E-10
Th-232	1.40 E+10 a	F	0.005	2.3 E-04	5.0 E-04	2.2 E-04	1.6 E-04	1.3 E-04	1.2 E-04	1.1 E-04
		M	0.005	8.3 E-05	5.0 E-04	8.1 E-05	6.3 E-05	5.0 E-05	4.7 E-05	4.5 E-05

		S	0.005	5.4 E-05	5.0 E-04	5.0 E-05	3.7 E-05	2.6 E-05	2.5 E-05	2.5 E-05
Th-234	24.1 d	F	0.005	4.0 E-08	5.0 E-04	2.5 E-08	1.1 E-08	6.1 E-09	3.5 E-09	2.5 E-09
		M	0.005	3.9 E-08	5.0 E-04	2.9 E-08	1.5 E-08	1.0 E-08	7.9 E-09	6.6 E-09
		S	0.005	4.1 E-08	5.0 E-04	3.1 E-08	1.7 E-08	1.1 E-08	9.1 E-09	7.7 E-09
Protactiniu										
Pa-227	0.638 h	M	0.005	3.6 E-07	5.0 E-04	2.6 E-07	1.4 E-07	1.0 E-07	9.0 E-08	7.4 E-08
		S	0.005	3.8 E-07	5.0 E-04	2.8 E-07	1.5 E-07	1.1 E-07	8.1 E-08	8.0 E-08
Pa-228	22.0 h	M	0.005	2.6 E-07	5.0 E-04	2.1 E-07	1.3 E-07	8.8 E-08	7.7 E-08	6.4 E-08
		S	0.005	2.9 E-07	5.0 E-04	2.4 E-07	1.5 E-07	1.0 E-07	9.1 E-08	7.5 E-08
Pa-230	17.4 d	M	0.005	2.4 E-06	5.0 E-04	1.8 E-06	1.1 E-06	8.3 E-07	7.6 E-07	6.1 E-07
		S	0.005	2.9 E-06	5.0 E-04	2.2 E-06	1.4 E-06	1.0 E-06	9.6 E-07	7.6 E-07
Pa-231	3.27 E+04 a	M	0.005	2.2 E-04	5.0 E-04	2.3 E-04	1.9 E-04	1.5 E-04	1.5 E-04	1.4 E-04
		S	0.005	7.4 E-05	5.0 E-04	6.9 E-05	5.2 E-05	3.9 E-05	3.6 E-05	3.4 E-05
Pa-232	1.31 d	M	0.005	1.9 E-08	5.0 E-04	1.8 E-08	1.4 E-08	1.1 E-08	1.0 E-08	1.0 E-08
		S	0.005	1.0 E-08	5.0 E-04	8.7 E-09	5.9 E-09	4.1 E-09	3.7 E-09	3.5 E-09
Pa-233	27.0 d	M	0.005	1.5 E-08	5.0 E-04	1.1 E-08	6.5 E-09	4.7 E-09	4.1 E-09	3.3 E-09
		S	0.005	1.7 E-08	5.0 E-04	1.3 E-08	7.5 E-09	5.5 E-09	4.9 E-09	3.9 E-09
Pa-234	6.70 h	M	0.005	2.8 E-09	5.0 E-04	2.0 E-09	1.0 E-09	6.8 E-10	4.7 E-10	3.8 E-10
		S	0.005	2.9 E-09	5.0 E-04	2.1 E-09	1.1 E-09	7.1 E-10	5.0 E-10	4.0 E-10

Uranium										
U-230	20.8 d	F	0.040	3.2 E-06	0.020	1.5 E-06	7.2 E-07	5.4 E-07	4.1 E-07	3.8 E-07
		M	0.040	4.9 E-05	0.020	3.7 E-05	2.4 E-05	1.8 E-05	1.7 E-05	1.3 E-05
		S	0.020	5.8 E-05	0.002	4.4 E-05	2.8 E-05	2.1 E-05	2.0 E-05	1.6 E-05
U-231	4.20 d	F	0.040	8.9 E-10	0.020	6.2 E-10	3.1 E-10	1.4 E-10	1.0 E-10	6.2 E-11
		M	0.040	2.4 E-09	0.020	1.7 E-09	9.4 E-10	5.5 E-10	4.6 E-10	3.8 E-10
		S	0.020	2.6 E-09	0.002	1.9 E-09	9.0 E-10	6.1 E-10	4.9 E-10	4.0 E-10
U-232	72.0 a	F	0.040	1.6 E-05	0.020	1.0 E-05	6.9 E-06	6.8 E-06	7.5 E-06	4.0 E-06
		M	0.040	3.0 E-05	0.020	2.4 E-05	1.6 E-05	1.1 E-05	1.0 E-05	7.8 E-06
		S	0.020	1.0 E-04	0.002	9.7 E-05	6.6 E-05	4.3 E-05	3.8 E-05	3.7 E-05
U-233	1.58 E+05 a	F	0.040	2.2 E-06	0.020	1.4 E-06	9.4 E-07	8.4 E-07	8.6 E-07	5.8 E-07
		M	0.040	1.5 E-05	0.020	1.1 E-05	7.2 E-06	4.9 E-06	4.3 E-06	3.6 E-06
		S	0.020	3.4 E-05	0.002	3.0 E-05	1.9 E-05	1.2 E-05	1.1 E-05	9.6 E-06
U-234	2.44 E+05 a	F	0.040	2.1 E-06	0.020	1.4 E-06	9.0 E-07	8.0 E-07	8.2 E-07	5.6 E-07
		M	0.040	1.5 E-05	0.020	1.1 E-05	7.0 E-06	4.8 E-06	4.2 E-06	3.5 E-06
		S	0.020	3.3 E-05	0.002	2.9 E-05	1.9 E-05	1.2 E-05	1.0 E-05	9.4 E-06
U-235	7.04 E+08 a	F	0.040	2.0 E-06	0.020	1.3 E-06	8.5 E-07	7.5 E-07	7.7 E-07	5.2 E-07
		M	0.040	1.3 E-05	0.020	1.0 E-05	6.3 E-06	4.3 E-06	3.7 E-06	3.1 E-06
		S	0.020	3.0 E-05	0.002	2.6 E-05	1.7 E-05	1.1 E-05	9.2 E-06	8.5 E-06
U-236	2.34 E+07 a	F	0.040	2.0 E-06	0.020	1.3 E-06	8.5 E-07	7.5 E-07	7.8 E-07	5.3 E-07
		M	0.040	1.4 E-05	0.020	1.0 E-05	6.5 E-06	4.5 E-06	3.9 E-06	3.2 E-06
		S	0.020	3.1 E-05	0.002	2.7 E-05	1.8 E-05	1.1 E-05	9.5 E-06	8.7 E-06
U-237	6.75 d	F	0.040	1.8 E-09	0.020	1.5 E-09	6.6 E-10	4.2 E-10	1.9 E-10	1.8 E-10
		M	0.040	7.8 E-09	0.020	5.7 E-09	3.3 E-09	2.4 E-09	2.1 E-09	1.7 E-09
		S	0.020	8.7 E-09	0.002	6.4 E-09	3.7 E-09	2.7 E-09	2.4 E-09	1.9 E-09
U-238	4.47 E+09 a	F	0.040	1.9 E-06	0.020	1.3 E-06	8.2 E-07	7.3 E-07	7.4 E-07	5.0 E-07
		M	0.040	1.2 E-05	0.020	9.4 E-06	5.9 E-06	4.0 E-06	3.4 E-06	2.9 E-06
		S	0.020	2.9 E-05	0.002	2.5 E-05	1.6 E-05	1.0 E-05	8.7 E-06	8.0 E-06
U-239	0.392 h	F	0.040	1.0 E-10	0.020	6.6 E-11	2.9 E-11	1.9 E-11	1.2 E-11	1.0 E-11
		M	0.040	1.8 E-10	0.020	1.2 E-10	5.6 E-11	3.8 E-11	2.7 E-11	2.2 E-11
		S	0.020	1.9 E-10	0.002	1.2 E-10	5.9 E-11	4.0 E-11	2.9 E-11	2.4 E-11
U-240	14.1 h	F	0.040	2.4 E-09	0.020	1.6 E-09	7.1 E-10	4.5 E-10	2.3 E-10	2.0 E-10
		M	0.040	4.6 E-09	0.020	3.1 E-09	1.7 E-09	1.1 E-09	6.5 E-10	5.3 E-10

		S	0.020	4.9 E-09	0.002	3.3 E-09	1.6 E-09	1.1 E-09	7.0 E-10	5.8 E-10
Neptuniu										
Np-232	0.245 h	F	0.005	2.0 E-10	5.0 E-04	1.9 E-10	1.2 E-10	1.1 E-10	1.1 E-10	1.2 E-10
		M	0.005	8.9 E-11	5.0 E-04	8.1 E-11	5.5 E-11	4.5 E-11	4.7 E-11	5.0 E-11
		S	0.005	1.2 E-10	5.0 E-04	9.7 E-11	5.8 E-11	3.9 E-11	2.5 E-11	2.4 E-11
Np-233	0.603 h	F	0.005	1.1 E-11	5.0 E-04	8.7 E-12	4.2 E-12	2.5 E-12	1.4 E-12	1.1 E-12
		M	0.005	1.5 E-11	5.0 E-04	1.1 E-11	5.5 E-12	3.3 E-12	2.1 E-12	1.6 E-12
		S	0.005	1.5 E-11	5.0 E-04	1.2 E-11	5.7 E-12	3.4 E-12	2.1 E-12	1.7 E-12
Np-234	4.40 d	F	0.005	2.9 E-09	5.0 E-04	2.2 E-09	1.1 E-09	7.2 E-10	4.3 E-10	3.5 E-10
		M	0.005	3.8 E-09	5.0 E-04	3.0 E-09	1.6 E-09	1.0 E-09	6.5 E-10	5.3 E-10
		S	0.005	3.9 E-09	5.0 E-04	3.1 E-09	1.6 E-09	1.0 E-09	6.8 E-10	5.5 E-10
Np-235	1.08 a	F	0.005	4.2 E-09	5.0 E-04	3.5 E-09	1.9 E-09	1.1 E-09	7.5 E-10	6.3 E-10
		M	0.005	2.3 E-09	5.0 E-04	1.9 E-09	1.1 E-09	6.8 E-10	5.1 E-10	4.2 E-10
		S	0.005	2.6 E-09	5.0 E-04	2.2 E-09	1.3 E-09	8.3 E-10	6.3 E-10	5.2 E-10
Np-236	1.15E+05 a	F	0.005	8.9 E-06	5.0 E-04	9.1 E-06	7.2 E-06	7.5 E-06	7.9 E-06	8.0 E-06
		M	0.005	3.0 E-06	5.0 E-04	3.1 E-06	2.7 E-06	2.7 E-06	3.1 E-06	3.2 E-06
		S	0.005	1.6 E-06	5.0 E-04	1.6 E-06	1.3 E-06	1.0 E-06	1.0 E-06	1.0 E-06

Np-236	22.5 h	F	0.005	2.8 E-08	5.0 E-04	2.6 E-08	1.5 E-08	1.1 E-08	8.9 E-09	9.0 E-09
		M	0.005	1.6 E-08	5.0 E-04	1.4 E-08	8.9 E-09	6.2 E-09	5.6 E-09	5.3 E-09
		S	0.005	1.6 E-08	5.0 E-04	1.3 E-08	8.5 E-09	5.7 E-09	4.8 E-09	4.2 E-09
Np-237	2.14E+06 a	F	0.005	9.8 E-05	5.0 E-04	9.3 E-05	6.0 E-05	5.0 E-05	4.7 E-05	5.0 E-05
		M	0.005	4.4 E-05	5.0 E-04	4.0 E-05	2.8 E-05	2.2 E-05	2.2 E-05	2.3 E-05
		S	0.005	3.7 E-05	5.0 E-04	3.2 E-05	2.1 E-05	1.4 E-05	1.3 E-05	1.2 E-05
Np-238	2.12 d	F	0.005	9.0 E-09	5.0 E-04	7.9 E-09	4.8 E-09	3.7 E-09	3.3 E-09	3.5 E-09
		M	0.005	7.3 E-09	5.0 E-04	5.8 E-09	3.4 E-09	2.5 E-09	2.2 E-09	2.1 E-09
		S	0.005	8.1 E-09	5.0 E-04	6.2 E-09	3.2 E-09	2.1 E-09	1.7 E-09	1.5 E-09
Np-239	2.36 d	F	0.005	2.6 E-09	5.0 E-04	1.4 E-09	6.3 E-10	3.8 E-10	2.1 E-10	1.7 E-10
		M	0.005	5.9 E-09	5.0 E-04	4.2 E-09	2.0 E-09	1.4 E-09	1.2 E-09	9.3 E-10
		S	0.005	5.6 E-09	5.0 E-04	4.0 E-09	2.2 E-09	1.6 E-09	1.3 E-09	1.0 E-09
Np-240	1.08 h	F	0.005	3.6 E-10	5.0 E-04	2.6 E-10	1.2 E-10	7.7 E-11	4.7 E-11	4.0 E-11
		M	0.005	6.3 E-10	5.0 E-04	4.4 E-10	2.2 E-10	1.4 E-10	1.0 E-10	8.5 E-11
		S	0.005	6.5 E-10	5.0 E-04	4.6 E-10	2.3 E-10	1.5 E-10	1.1 E-10	9.0 E-11

Plutoniu										
Pu-234	8.80 h	F	0.005	3.0 E-08	5.0 E-04	2.0 E-08	9.8 E-09	5.7 E-09	3.6 E-09	3.0 E-09
		M	0.005	7.8 E-08	5.0 E-04	5.9 E-08	3.7 E-08	2.8 E-08	2.6 E-08	2.1 E-08
		S	1.0 E-04	8.7 E-08	1.0 E-05	6.6 E-08	4.2 E-08	3.1 E-08	3.0 E-08	2.4 E-08
Pu-235	0.422 h	F	0.005	1.0 E-11	5.0 E-04	7.9 E-12	3.9 E-12	2.2 E-12	1.3 E-12	1.0 E-12
		M	0.005	1.3 E-11	5.0 E-04	1.0 E-11	5.0 E-12	2.9 E-12	1.9 E-12	1.4 E-12
		S	1.0 E-04	1.3 E-11	1.0 E-05	1.0 E-11	5.1 E-12	3.0 E-12	1.9 E-12	1.5 E-12
Pu-236	2.85 a	F	0.005	1.0 E-04	5.0 E-04	9.5 E-05	6.1 E-05	4.4 E-05	3.7 E-05	4.0 E-05
		M	0.005	4.8 E-05	5.0 E-04	4.3 E-05	2.9 E-05	2.1 E-05	1.9 E-05	2.0 E-05
		S	1.0 E-04	3.6 E-05	1.0 E-05	3.1 E-05	2.0 E-05	1.4 E-05	1.2 E-05	1.0 E-05
Pu-237	45.3 d	F	0.005	2.2 E-09	5.0 E-04	1.6 E-09	7.9 E-10	4.8 E-10	2.9 E-10	2.6 E-10
		M	0.005	1.9 E-09	5.0 E-04	1.4 E-09	8.2 E-10	5.4 E-10	4.3 E-10	3.5 E-10
		S	1.0 E-04	2.0 E-09	1.0 E-05	1.5 E-09	8.8 E-10	5.9 E-10	4.8 E-10	3.9 E-10
Pu-238	87.7 a	F	0.005	2.0 E-04	5.0 E-04	1.9 E-04	1.4 E-04	1.1 E-04	1.0 E-04	1.1 E-04
		M	0.005	7.8 E-05	5.0 E-04	7.4 E-05	5.6 E-05	4.4 E-05	4.3 E-05	4.6 E-05

		S	1.0 E-04	4.5 E-05	1.0 E-05	4.0 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05
Pu-239	2.41 E+04 a	F	0.005	2.1 E-04	5.0 E-04	2.0 E-04	1.5 E-04	1.2 E-04	1.1 E-04	1.2 E-04
		M	0.005	8.0 E-05	5.0 E-04	7.7 E-05	6.0 E-05	4.8 E-05	4.7 E-05	5.0 E-05
		S	1.0 E-04	4.3 E-05	1.0 E-05	3.9 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05
Pu-240	6.54 E+03 a	F	0.005	2.1 E-04	5.0 E-04	2.0 E-04	1.5 E-04	1.2 E-04	1.1 E-04	1.2 E-04
		M	0.005	8.0 E-05	5.0 E-04	7.7 E-05	6.0 E-05	4.8 E-05	4.7 E-05	5.0 E-05
		S	1.0 E-04	4.3 E-05	1.0 E-05	3.9 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05
Pu-241	14.4 a	F	0.005	2.8 E-06	5.0 E-04	2.9 E-06	2.6 E-06	2.4 E-06	2.2 E-06	2.3 E-06
		M	0.005	9.1 E-07	5.0 E-04	9.7 E-07	9.2 E-07	8.3 E-07	8.6 E-07	9.0 E-07
		S	1.0 E-04	2.2 E-07	1.0 E-05	2.3 E-07	2.0 E-07	1.7 E-07	1.7 E-07	1.7 E-07

Pu-242	3.76 E+05 a	F	0.005	2.0 E-04	5.0 E-04	1.9 E-04	1.4 E-04	1.2 E-04	1.1 E-04	1.1 E-04
		M	0.005	7.6 E-05	5.0 E-04	7.3 E-05	5.7 E-05	4.5 E-05	4.5 E-05	4.8 E-05
		S	1.0 E-04	4.0 E-05	1.0 E-05	3.6 E-05	2.5 E-05	1.7 E-05	1.6 E-05	1.5 E-05
Pu-243	4.95 h	F	0.005	2.7 E-10	5.0 E-04	1.9 E-10	8.8 E-11	5.7 E-11	3.5 E-11	3.2 E-11
		M	0.005	5.6 E-10	5.0 E-04	3.9 E-10	1.9 E-10	1.3 E-10	8.7 E-11	8.3 E-11
		S	1.0 E-04	6.0 E-10	1.0 E-05	4.1 E-10	2.0 E-10	1.4 E-10	9.2 E-11	8.6 E-11
Pu-244	8.26 E+07 a	F	0.005	2.0 E-04	5.0 E-04	1.9 E-04	1.4 E-04	1.2 E-04	1.1 E-04	1.1 E-04
		M	0.005	7.4 E-05	5.0 E-04	7.2 E-05	5.6 E-05	4.5 E-05	4.4 E-05	4.7 E-05
		S	1.0 E-04	3.9 E-05	1.0 E-05	3.5 E-05	2.4 E-05	1.7 E-05	1.5 E-05	1.5 E-05
Pu-245	10.5 h	F	0.005	1.8 E-09	5.0 E-04	1.3 E-09	5.6 E-10	3.5 E-10	1.9 E-10	1.6 E-10
		M	0.005	3.6 E-09	5.0 E-04	2.5 E-09	1.2 E-09	8.0 E-10	5.0 E-10	4.0 E-10
		S	1.0 E-04	3.8 E-09	1.0 E-05	2.6 E-09	1.3 E-09	8.5 E-10	5.4 E-10	4.3 E-10
Pu-246	10.9 d	F	0.005	2.0 E-08	5.0 E-04	1.4 E-08	7.0 E-09	4.4 E-09	2.8 E-09	2.5 E-09
		M	0.005	3.5 E-08	5.0 E-04	2.6 E-08	1.5 E-08	1.1 E-08	9.1 E-09	7.4 E-09
		S	1.0 E-04	3.8 E-08	1.0 E-05	2.8 E-08	1.6 E-08	1.2 E-08	1.0 E-08	8.0 E-09

Americiu										
Am-237	1.22 h	F	0.005	9.8 E-11	5.0 E-04	7.3 E-11	3.5 E-11	2.2 E-11	1.3 E-11	1.1 E-11
		M	0.005	1.7 E-10	5.0 E-04	1.2 E-10	6.2 E-11	4.1 E-11	3.0 E-11	2.5 E-11
		S	0.005	1.7 E-10	5.0 E-04	1.3 E-10	6.5 E-11	4.3 E-11	3.2 E-11	2.6 E-11
Am-238	1.63 h	F	0.005	4.1 E-10	5.0 E-04	3.8 E-10	2.5 E-10	2.0 E-10	1.8 E-10	1.9 E-10
		M	0.005	3.1 E-10	5.0 E-04	2.6 E-10	1.3 E-10	9.6 E-11	8.8 E-11	9.0 E-11
		S	0.005	2.7 E-10	5.0 E-04	2.2 E-10	1.3 E-10	8.2 E-11	6.1 E-11	5.4 E-11
Am-239	11.9 h	F	0.005	8.1 E-10	5.0 E-04	5.8 E-10	2.6 E-10	1.6 E-10	9.1 E-11	7.6 E-11
		M	0.005	1.5 E-09	5.0 E-04	1.1 E-09	5.6 E-10	3.7 E-10	2.7 E-10	2.2 E-10
		S	0.005	1.6 E-09	5.0 E-04	1.1 E-09	5.9 E-10	4.0 E-10	2.5 E-10	2.4 E-10
Am-240	2.12 d	F	0.005	2.0 E-09	5.0 E-04	1.7 E-09	8.8 E-10	5.7 E-10	3.6 E-10	2.3 E-10
		M	0.005	2.9 E-09	5.0 E-04	2.2 E-09	1.2 E-09	7.7 E-10	5.3 E-10	4.3 E-10
		S	0.005	3.0 E-09	5.0 E-04	2.3 E-09	1.2 E-09	7.8 E-10	5.3 E-10	4.3 E-10
Am-241	4.32 E+02 a	F	0.005	1.8 E-04	5.0 E-04	1.8 E-04	1.2 E-04	1.0 E-04	9.2 E-05	9.6 E-05
		M	0.005	7.3 E-05	5.0 E-04	6.9 E-05	5.1 E-05	4.0 E-05	4.0 E-05	4.2 E-05
		S	0.005	4.6 E-05	5.0 E-04	4.0 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05

Am-242	16.0 h	F	0.005	9.2 E-08	5.0 E-04	7.1 E-08	3.5 E-08	2.1 E-08	1.4 E-08	1.1 E-08
		M	0.005	7.6 E-08	5.0 E-04	5.9 E-08	3.6 E-08	2.4 E-08	2.1 E-08	1.7 E-08
		S	0.005	8.0 E-08	5.0 E-04	6.2 E-08	3.9 E-08	2.7 E-08	2.4 E-08	2.0 E-08
Am-242m	1.52 E+02 a	F	0.005	1.6 E-04	5.0 E-04	1.5 E-04	1.1 E-04	9.4 E-05	8.8 E-05	9.2 E-05
		M	0.005	5.2 E-05	5.0 E-04	5.3 E-05	4.1 E-05	3.4 E-05	3.5 E-05	3.7 E-05
		S	0.005	2.5 E-05	5.0 E-04	2.4 E-05	1.7 E-05	1.2 E-05	1.1 E-05	1.1 E-05
Am-243	7.38 E+03 a	F	0.005	1.8 E-04	5.0 E-04	1.7 E-04	1.2 E-04	1.0 E-04	9.1 E-05	9.6 E-05
		M	0.005	7.2 E-05	5.0 E-04	6.8 E-05	5.0 E-05	4.0 E-05	4.0 E-05	4.1 E-05
		S	0.005	4.4 E-05	5.0 E-04	3.9 E-05	2.6 E-05	1.8 E-05	1.6 E-05	1.5 E-05
Am-244	10.1 h	F	0.005	1.0 E-08	5.0 E-04	9.2 E-09	5.6 E-09	4.1 E-09	3.5 E-09	3.7 E-09
		M	0.005	6.0 E-09	5.0 E-04	5.0 E-09	3.2 E-09	2.2 E-09	2.0 E-09	2.0 E-09
		S	0.005	6.1 E-09	5.0 E-04	4.8 E-09	2.4 E-09	1.6 E-09	1.4 E-09	1.2 E-09
Am-244m	0.433 h	F	0.005	4.6 E-10	5.0 E-04	4.0 E-10	2.4 E-10	1.8 E-10	1.5 E-10	1.6 E-10
		M	0.005	3.3 E-10	5.0 E-04	2.1 E-10	1.3 E-10	9.2 E-11	8.3 E-11	8.4 E-11
		S	0.005	3.0 E-10	5.0 E-04	2.2 E-10	1.2 E-10	8.1 E-11	5.5 E-11	5.7 E-11
Am-245	2.05 h	F	0.005	2.1 E-10	5.0 E-04	1.4 E-10	6.2 E-11	4.0 E-11	2.4 E-11	2.1 E-11
		M	0.005	3.9 E-10	5.0 E-04	2.6 E-10	1.3 E-10	8.7 E-11	6.4 E-11	5.3 E-11
		S	0.005	4.1 E-10	5.0 E-04	2.8 E-10	1.3 E-10	9.2 E-11	6.8 E-11	5.6 E-11
Am-246	0.650 h	F	0.005	3.0 E-10	5.0 E-04	2.0 E-10	9.3 E-11	6.1 E-11	3.8 E-11	3.3 E-11
		M	0.005	5.0 E-10	5.0 E-04	3.4 E-10	1.6 E-10	1.1 E-10	7.9 E-11	6.6 E-11
		S	0.005	5.3 E-10	5.0 E-04	3.6 E-10	1.7 E-10	1.2 E-10	8.3 E-11	6.9 E-11
Am-246m	0.417 h	F	0.005	1.3 E-10	5.0 E-04	8.9 E-11	4.2 E-11	2.6 E-11	1.6 E-11	1.4 E-11
		M	0.005	1.9 E-10	5.0 E-04	1.3 E-10	6.1 E-11	4.0 E-11	2.6 E-11	2.2 E-11
		S	0.005	2.0 E-10	5.0 E-04	1.4 E-10	6.4 E-11	4.1 E-11	2.7 E-11	2.3 E-11
Curiu										
Cm-238	2.40 h	F	0.005	7.7 E-09	5.0 E-04	5.4 E-09	2.6 E-09	1.8 E-09	9.2 E-10	7.8 E-10
		M	0.005	2.1 E-08	5.0 E-04	1.5 E-08	7.9 E-09	5.9 E-09	5.6 E-09	4.5 E-09
		S	0.005	2.2 E-08	5.0 E-04	1.6 E-08	8.6 E-09	6.4 E-09	6.1 E-09	4.9 E-09
Cm-240	27.0 d	F	0.005	8.3 E-06	5.0 E-04	6.3 E-06	3.2 E-06	2.0 E-06	1.5 E-06	1.3 E-06
		M	0.005	1.2 E-05	5.0 E-04	9.1 E-06	5.8 E-06	4.2 E-06	3.8 E-06	3.2 E-06
		S	0.005	1.3 E-05	5.0 E-04	9.9 E-06	6.4 E-06	4.6 E-06	4.3 E-06	3.5 E-06
Cm-241	32.8 d	F	0.005	1.1 E-07	5.0 E-04	8.9 E-08	4.9 E-08	3.5 E-08	2.8 E-08	2.7 E-08
		M	0.005	1.3 E-07	5.0 E-04	1.0 E-07	6.6 E-08	4.8 E-08	4.4 E-08	3.7 E-08
		S	0.005	1.4 E-07	5.0 E-04	1.1 E-07	6.9 E-08	4.9 E-08	4.5 E-08	3.7 E-08
Cm-242	163 d	F	0.005	2.7 E-05	5.0 E-04	2.1 E-05	1.0 E-05	6.1 E-06	4.0 E-06	3.3 E-06
		M	0.005	2.2 E-05	5.0 E-04	1.8 E-05	1.1 E-05	7.3 E-06	6.4 E-06	5.2 E-06
		S	0.005	2.4 E-05	5.0 E-04	1.9 E-05	1.2 E-05	8.2 E-06	7.3 E-06	5.9 E-06
Cm-243	28.5 a	F	0.005	1.6 E-04	5.0 E-04	1.5 E-04	9.5 E-05	7.3 E-05	6.5 E-05	6.9 E-05
		M	0.005	6.7 E-05	5.0 E-04	6.1 E-05	4.2 E-05	3.1 E-05	3.0 E-05	3.1 E-05
		S	0.005	4.6 E-05	5.0 E-04	4.0 E-05	2.6 E-05	1.8 E-05	1.6 E-05	1.5 E-05
Cm-244	18.1 a	F	0.005	1.5 E-04	5.0 E-04	1.3 E-04	8.3 E-05	6.1 E-05	5.3 E-05	5.7 E-05
		M	0.005	6.2 E-05	5.0 E-04	5.7 E-05	3.7 E-05	2.7 E-05	2.6 E-05	2.7 E-05
		S	0.005	4.4 E-05	5.0 E-04	3.8 E-05	2.5 E-05	1.7 E-05	1.5 E-05	1.3 E-05
Cm-245	8.50 E+03 a	F	0.005	1.9 E-04	5.0 E-04	1.8 E-04	1.2 E-04	1.0 E-04	9.4 E-05	9.9 E-05
		M	0.005	7.3 E-05	5.0 E-04	6.9 E-05	5.1 E-05	4.1 E-05	4.1 E-05	4.2 E-05
		S	0.005	4.5 E-05	5.0 E-04	4.0 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05
Cm-246	4.73 E+03 a	F	0.005	1.9 E-04	5.0 E-04	1.8 E-04	1.2 E-04	1.0 E-04	9.4 E-05	9.8 E-05
		M	0.005	7.3 E-05	5.0 E-04	6.9 E-05	5.1 E-05	4.1 E-05	4.1 E-05	4.2 E-05
		S	0.005	4.6 E-05	5.0 E-04	4.0 E-05	2.7 E-05	1.9 E-05	1.7 E-05	1.6 E-05
Cm-247	1.56 E+07 a	F	0.005	1.7 E-04	5.0 E-04	1.6 E-04	1.1 E-04	9.4 E-05	8.6 E-05	9.0 E-05
		M	0.005	6.7 E-05	5.0 E-04	6.3 E-05	4.7 E-05	3.7 E-05	3.7 E-05	3.9 E-05
		S	0.005	4.1 E-05	5.0 E-04	3.6 E-05	2.4 E-05	1.7 E-05	1.5 E-05	1.4 E-05
Cm-248	3.39 E+05 a	F	0.005	6.8 E-04	5.0 E-04	6.5 E-04	4.5 E-04	3.7 E-04	3.4 E-04	3.6 E-04

		M	0.005	2.5 E-04	5.0 E-04	2.4 E-04	1.8 E-04	1.4 E-04	1.4 E-04	1.5 E-04
		S	0.005	1.4 E-04	5.0 E-04	1.2 E-04	8.2 E-05	5.6 E-05	5.0 E-05	4.8 E-05
Cm-249	1.07 h	F	0.005	1.8 E-10	5.0 E-04	9.8 E-11	5.9 E-11	4.6 E-11	4.0 E-11	4.0 E-11
		M	0.005	2.4 E-10	5.0 E-04	1.6 E-10	8.2 E-11	5.8 E-11	3.7 E-11	3.3 E-11
		S	0.005	2.4 E-10	5.0 E-04	1.6 E-10	7.8 E-11	5.3 E-11	3.9 E-11	3.3 E-11
Cm-250	6.90 E+03 a	F	0.005	3.9 E-03	5.0 E-04	3.7 E-03	2.6 E-03	2.1 E-03	2.0 E-03	2.1 E-03
		M	0.005	1.4 E-03	5.0 E-04	1.3 E-03	9.9 E-04	7.9 E-04	7.9 E-04	8.4 E-04
		S	0.005	7.2 E-04	5.0 E-04	6.5 E-04	4.4 E-04	3.0 E-04	2.7 E-04	2.6 E-04
Berkeliu										
Bk-245	4.94 d	M	0.005	8.8 E-09	5.0 E-04	6.6 E-09	4.0 E-09	2.9 E-09	2.6 E-09	2.1 E-09
Bk-246	1.83 d	M	0.005	2.1 E-09	5.0 E-04	1.7 E-09	9.3 E-10	6.0 E-10	4.0 E-10	3.3 E-10
Bk-247	1.38 E+03 a	M	0.005	1.5 E-04	5.0 E-04	1.5 E-04	1.1 E-04	7.9 E-05	7.2 E-05	6.9 E-05
Bk-249	320 d	M	0.005	3.3 E-07	5.0 E-04	3.3 E-07	2.4 E-07	1.8 E-07	1.6 E-07	1.6 E-07
Bk-250	3.22 h	M	0.005	3.4 E-09	5.0 E-04	3.1 E-09	2.0 E-09	1.3 E-09	1.1 E-09	1.0 E-09
Californiu										
Cf-244	0.323 h	M	0.005	7.6 E-08	5.0 E-04	5.4 E-08	2.8 E-08	2.0 E-08	1.6 E-08	1.4 E-08
Cf-246	1.49 d	M	0.005	1.7 E-06	5.0 E-04	1.3 E-06	8.3 E-07	6.1 E-07	5.7 E-07	4.5 E-07
Cf-248	334 d	M	0.005	3.8 E-05	5.0 E-04	3.2 E-05	2.1 E-05	1.4 E-05	1.0 E-05	8.8 E-06
Cf-249	3.50 E+02 a	M	0.005	1.6 E-04	5.0 E-04	1.5 E-04	1.1 E-04	8.0 E-05	7.2 E-05	7.0 E-05
Cf-250	13.1 a	M	0.005	1.1 E-04	5.0 E-04	9.8 E-05	6.6 E-05	4.2 E-05	3.5 E-05	3.4 E-05
Cf-251	8.98 E+02 a	M	0.005	1.6 E-04	5.0 E-04	1.5 E-04	1.1 E-04	8.1 E-05	7.3 E-05	7.1 E-05
Cf-252	2.64 a	M	0.005	9.7 E-05	5.0 E-04	8.7 E-05	5.6 E-05	3.2 E-05	2.2 E-05	2.0 E-05
Cf-253	17.8 d	M	0.005	5.4 E-06	5.0 E-04	4.2 E-06	2.6 E-06	1.9 E-06	1.7 E-06	1.3 E-06
Cf-254	60.5 d	M	0.005	2.5 E-04	5.0 E-04	1.9 E-04	1.1 E-04	7.0 E-05	4.8 E-05	4.1 E-05
Einsteiniu										
Es-250	2.10 h	M	0.005	2.0 E-09	5.0 E-04	1.8 E-09	1.2 E-09	7.8 E-10	6.4 E-10	6.3 E-10
Es-251	1.38 d	M	0.005	7.9 E-09	5.0 E-04	6.0 E-09	3.9 E-09	2.8 E-09	2.6 E-09	2.1 E-09
Es-253	20.5 d	M	0.005	1.1 E-05	5.0 E-04	8.0 E-06	5.1 E-06	3.7 E-06	3.4 E-06	2.7 E-06
Es-254	276 d	M	0.005	3.7 E-05	5.0 E-04	3.1 E-05	2.0 E-05	1.3 E-05	1.0 E-05	8.6 E-06
Es-254m	1.64 d	M	0.005	1.7 E-06	5.0 E-04	1.3 E-06	8.4 E-07	6.3 E-07	5.9 E-07	4.7 E-07
Fermiu										
Fm-252	22.7 h	M	0.005	1.2 E-06	5.0 E-04	9.0 E-07	5.8 E-07	4.3 E-07	4.0 E-07	3.2 E-07
Fm-253	3.00 d	M	0.005	1.5 E-06	5.0 E-04	1.2 E-06	7.3 E-07	5.4 E-07	5.0 E-07	4.0 E-07
Fm-254	3.24 h	M	0.005	3.2 E-07	5.0 E-04	2.3 E-07	1.3 E-07	9.8 E-08	7.6 E-08	6.1 E-08
Fm-255	20.1 h	M	0.005	1.2 E-06	5.0 E-04	7.3 E-07	4.7 E-07	3.5 E-07	3.4 E-07	2.7 E-07
Fm-257	101 d	M	0.005	3.3 E-05	5.0 E-04	2.6 E-05	1.6 E-05	1.1 E-05	8.8 E-06	7.1 E-06
Mendeleviu										
Md-257	5.20 h	M	0.005	1.0 E-07	5.0 E-04	8.2 E-08	5.1 E-08	3.6 E-08	3.1 E-08	2.5 E-08
Md-258	55.0 d	M	0.005	2.4 E-05	5.0 E-04	1.9 E-05	1.2 E-05	8.6 E-06	7.3 E-06	5.9 E-06

NOTĂ:

(1). Coloana "Tip" conține caracterizarea vitezei de absorbție din plămâni, literele F, M și S au respectiv semnificația de viteză de absorbție rapidă, moderată și lentă.

(2). Pentru radionuclizii marcați (*) și pentru intervalul de vârstă de la 1 an la 15 ani și tipul F, coeficientul f_1 are următoarele valori:

- pentru calciu este 0,4;
- pentru fier este 0,2;
- pentru cobalt este 0,3;
- pentru stonțiu este 0,4;
- pentru bariu este 0,3;
- pentru plumb este 0,4;
- pentru radiu este 0,3.

TABELUL 4-C1

Coeficienții de doză efectivă (Sv Bq⁻¹)

Nucleu	Timp de înjumătățire	Inhalare				Ingestie	
		Tip	f ₁	h(g) _{1μm}	h(g) _{5μm}	f ₁	h(g)
Hidrogen							
Apă tritiată	12.3 a		Vezi Tabelul C2			1.000	1.8 E-11
Tritiu legat organic	12.3 a		Vezi Tabelul C2			1.000	4.2 E-11
Beriliu							
Be-7	53.3 d	M	0.005	4.8 E-11	4.3 E-11	0.005	2.8 E-11
		S	0.005	5.2 E-11	4.6 E-11		
Be-10	1.60E+06 a	M	0.005	9.1 E-09	6.7 E-09	0.005	1.1 E-09
		S	0.005	3.2 E-08	1.9 E-08		
Carbon							
C-11	0.340 h		Vezi Tabelul C2				2.4 E-11
C-14	5.73E+03 a		Vezi Tabelul C2			1.000	5.8 E-10
Fluor							
F-18	1.83 h	F	1.000	3.0 E-11	5.4 E-11	1.000	4.9 E-11
		M	1.000	5.7 E-11	8.9 E-11		
		S	1.000	6.0 E-11	9.3 E-11		
Sodiu							
Na-22	2.60 a	F	1.000	1.3 E-09	2.0 E-09	1.000	3.2 E-09
Na-24	15.0 h	F	1.000	2.9 E-10	5.3 E-10	1.000	4.3 E-10
Magneziu							
Mg-28	20.9 h	F	0.500	6.4 E-10	1.1 E-09	0.500	2.2 E-09
		M	0.500	1.2 E-09	1.7 E-09		
Aluminiu							
Al-26	7.16E+05 a	F	0.010	1.1 E-08	1.4 E-08	0.010	3.5 E-09
		M	0.010	1.8 E-08	1.2 E-08		
Siliciu							
Si-31	2.62 h	F	0.010	2.9 E-11	5.1 E-11	0.010	1.6 E-10
		M	0.010	7.5 E-11	1.1 E-10		
		S	0.010	8.0 E-11	1.1 E-10		
Si-32	4.50E+02 a	F	0.010	3.2 E-09	3.7 E-09	0.010	5.6 E-10
		M	0.010	1.5 E-08	9.6 E-09		
		S	0.010	1.1 E-07	5.5 E-08		
Fosfor							
P-32	14.3 d	F	0.800	8.0 E-10	1.1 E-09	0.800	2.4 E-09
		M	0.800	3.2 E-09	2.9 E-09		
P-33	25.4 d	F	0.800	9.6 E-11	1.4 E-10	0.800	2.4 E-10

		M	0.800	1.4 E-09	1.3 E-09		
Sulf							
S-35 (anorganic)	87.4 d	F	0.800	5.3 E-11	8.0 E-11	0.800	1.4 E-10
		M	0.800	1.3 E-09	1.1 E-09	0.100	1.9 E-10
S-35 (organic)	87.4 d		Vezi Tabelul C2			1.000	7.7 E-10
Clor							
Cl-36	3.01E+05 a	F	1.000	3.4 E-10	4.9 E-10	1.000	9.3 E-10
		M	1.000	6.9 E-09	5.1 E-09		
Cl-38	0.620 h	F	1.000	2.7 E-11	4.6 E-11	1.000	1.2 E-10
		M	1.000	4.7 E-11	7.3 E-11		
Cl-39	0.927 h	F	1.000	2.7 E-11	4.8 E-11	1.000	8.5 E-11
		M	1.000	4.8 E-11	7.6 E-11		
Potasiu							
K-40	1.28E+09 a	F	1.000	2.1 E-09	3.0 E-09	1.000	6.2 E-09
K-42	12.4 h	F	1.000	1.3 E-10	2.0 E-10	1.000	4.3 E-10
K-43	22.6 h	F	1.000	1.5 E-10	2.6 E-10	1.000	2.5 E-10
K-44	0.369 h	F	1.000	2.1 E-11	3.7 E-11	1.000	8.4 E-11
K-45	0.333 h	F	1.000	1.6 E-11	2.8 E-11	1.000	5.4 E-11
Calciu							
Ca-41	1.40E+05 a	M	0.300	1.7 E-10	1.9 E-10	0.300	2.9 E-10
Ca-45	163 d	M	0.300	2.7 E-09	2.3 E-09	0.300	7.6 E-10
Ca-47	4.53 d	M	0.300	1.8 E-09	2.1 E-09	0.300	1.6 E-09
Scandiu							
Sc-43	3.89 h	S	1.0 E-04	1.2 E-10	1.8 E-10	1.0 E-04	1.9 E-10
Sc-44	3.93 h	S	1.0 E-04	1.9 E-10	3.0 E-10	1.0 E-04	3.5 E-10
Sc-44m	2.44 d	S	1.0 E-04	1.5 E-09	2.0 E-09	1.0 E-04	2.4 E-09
Sc-46	83.8 d	S	1.0 E-04	6.4 E-09	4.8 E-09	1.0 E-04	1.5 E-09
Sc-47	3.35 d	S	1.0 E-04	7.0 E-10	7.3 E-10	1.0 E-04	5.4 E-10
Sc-48	1.82 d	S	1.0 E-04	1.1 E-09	1.6 E-09	1.0 E-04	1.7 E-09
Sc-49	0.956 h	S	1.0 E-04	4.1 E-11	6.1 E-11	1.0 E-04	8.2 E-11
Titan							
Ti-44	47.3 a	F	0.010	6.1 E-08	7.2 E-08	0.010	5.8 E-09
		M	0.010	4.0 E-08	2.7 E-08		
		S	0.010	1.2 E-07	6.2 E-08		
Ti-45	3.08 h	F	0.010	4.6 E-11	8.3 E-11	0.010	1.5 E-10
		M	0.010	9.1 E-11	1.4 E-10		
		S	0.010	9.6 E-11	1.5 E-10		
Vanadiu							
V-47	0.543 h	F	0.010	1.9 E-11	3.2 E-11	0.010	6.3 E-11
		M	0.010	3.1 E-11	5.0 E-11		
V-48	16.2 d	F	0.010	1.1 E-09	1.7 E-09	0.010	2.0 E-09
		M	0.010	2.3 E-09	2.7 E-09		
V-49	330 d	F	0.010	2.1 E-11	2.6 E-11	0.010	1.8 E-11
		M	0.010	3.2 E-11	2.3 E-11		

Crom							
Cr-48	23.0 h	F	0.100	1.0 E-10	1.7 E-10	0.100	2.0 E-10
		M	0.100	2.0 E-10	2.3 E-10	0.010	2.0 E-10
		S	0.100	2.2 E-10	2.5 E-10		
Cr-49	0.702 h	F	0.100	2.0 E-11	3.5 E-11	0.100	6.1 E-11
		M	0.100	3.5 E-11	5.6 E-11	0.010	6.1 E-11
		S	0.100	3.7 E-11	5.9 E-11		
Cr-51	27.7 d	F	0.100	2.1 E-11	3.0 E-11	0.100	3.8 E-11
		M	0.100	3.1 E-11	3.4 E-11	0.010	3.7 E-11
		S	0.100	3.6 E-11	3.6 E-11		
Mangan							
Mn-51	0.770 h	F	0.100	2.4 E-11	4.2 E-11	0.100	9.3 E-11
		M	0.100	4.3 E-11	6.8 E-11		
Mn-52	5.59 d	F	0.100	9.9 E-10	1.6 E-09	0.100	1.8 E-09
		M	0.100	1.4 E-09	1.8 E-09		
Mn-52m	0.352 h	F	0.100	2.0 E-11	3.5 E-11	0.100	6.9 E-11
		M	0.100	3.0 E-11	5.0 E-11		
Mn-53	3.70E+06 a	F	0.100	2.9 E-11	3.6 E-11	0.100	3.0 E-11
		M	0.100	5.2 E-11	3.6 E-11		
Mn-54	312 d	F	0.100	8.7 E-10	1.1 E-09	0.100	7.1 E-10
		M	0.100	1.5 E-09	1.2 E-09		
Mn-56	2.58 h	F	0.100	6.9 E-11	1.2 E-10	0.100	2.5 E-10
		M	0.100	1.3 E-10	2.0 E-10		
Fier							
Fe-52	8.28 h	F	0.100	4.1 E-10	6.9 E-10	0.100	1.4 E-09
		M	0.100	6.3 E-10	9.5 E-10		
Fe-55	2.70 a	F	0.100	7.7 E-10	9.2 E-10	0.100	3.3 E-10
		M	0.100	3.7 E-10	3.3 E-10		
Fe-59	44.5 d	F	0.100	2.2 E-09	3.0 E-09	0.100	1.8 E-09
		M	0.100	3.5 E-09	3.2 E-09		
Fe-60	1.00E+05 a	F	0.100	2.8 E-07	3.3 E-07	0.100	1.1 E-07
		M	0.100	1.3 E-07	1.2 E-07		
Cobalt							
Co-55	17.5 h	M	0.100	5.1 E-10	7.8 E-10	0.100	1.0 E-09
		S	0.050	5.5 E-10	8.3 E-10	0.050	1.1 E-09
Co-56	78.7 d	M	0.100	4.6 E-09	4.0 E-09	0.100	2.5 E-09
		S	0.050	6.3 E-09	4.9 E-09	0.050	2.3 E-09
Co-57	271 d	M	0.100	5.2 E-10	3.9 E-10	0.100	2.1 E-10
		S	0.050	9.4 E-10	6.0 E-10	0.050	1.9 E-10
Co-58	70.8 d	M	0.100	1.5 E-09	1.4 E-09	0.100	7.4 E-10
		S	0.050	2.0 E-09	1.7 E-09	0.050	7.0 E-10
Co-58m	9.15 h	M	0.100	1.3 E-11	1.5 E-11	0.100	2.4 E-11
		S	0.050	1.6 E-11	1.7 E-11	0.050	2.4 E-11
Co-60	5.27 a	M	0.100	9.6 E-09	7.1 E-09	0.100	3.4 E-09
		S	0.050	2.9 E-08	1.7 E-08	0.050	2.5 E-09
Co-60m	0.174 h	M	0.100	1.1 E-12	1.2 E-12	0.100	1.7 E-12
		S	0.050	1.3 E-12	1.2 E-12	0.050	1.7 E-12
Co-61	1.65 h	M	0.100	4.8 E-11	7.1 E-11	0.100	7.4 E-11
		S	0.050	5.1 E-11	7.5 E-11	0.050	7.4 E-11

Co-62m	0.232 h	M	0.100	2.1 E-11	3.6 E-11	0.100	4.7 E-11
		S	0.050	2.2 E-11	3.7 E-11	0.050	4.7 E-11
Nichel							
Ni-56	6.10 d	F	0.050	5.1 E-10	7.9 E-10	0.050	8.6 E-10
		M	0.050	8.6 E-10	9.6 E-10		
Ni-57	1.50 d	F	0.050	2.8 E-10	5.0 E-10	0.050	8.7 E-10
		M	0.050	5.1 E-10	7.6 E-10		
Ni-59	7.50E+04 a	F	0.050	1.8 E-10	2.2 E-10	0.050	6.3 E-11
		M	0.050	1.3 E-10	9.4 E-11		
Ni-63	96.0 a	F	0.050	4.4 E-10	5.2 E-10	0.050	1.5 E-10
		M	0.050	4.4 E-10	3.1 E-10		
Ni-65	2.52 h	F	0.050	4.4 E-11	7.5 E-11	0.050	1.8 E-10
		M	0.050	8.7 E-11	1.3 E-10		
Ni-66	2.27 d	F	0.050	4.5 E-10	7.6 E-10	0.050	3.0 E-09
		M	0.050	1.6 E-09	1.9 E-09		
Cupru							
Cu-60	0.387 h	F	0.500	2.4 E-11	4.4 E-11	0.500	7.0 E-11
		M	0.500	3.5 E-11	6.0 E-11		
		S	0.500	3.6 E-11	6.2 E-11		
Cu-61	3.41 h	F	0.500	4.0 E-11	7.3 E-11	0.500	1.2 E-10
		M	0.500	7.6 E-11	1.2 E-10		
		S	0.500	8.0 E-11	1.2 E-10		
Cu-64	12.7 h	F	0.500	3.8 E-11	6.8 E-11	0.500	1.2 E-10
		M	0.500	1.1 E-10	1.5 E-10		
		S	0.500	1.2 E-10	1.5 E-10		
Cu-67	2.58 d	F	0.500	1.1 E-10	1.8 E-10	0.500	3.4 E-10
		M	0.500	5.2 E-10	5.3 E-10		
		S	0.500	5.8 E-10	5.8 E-10		
Zinc							
Zn-62	9.26 h	S	0.500	4.7 E-10	6.6 E-10	0.500	9.4 E-10
Zn-63	0.635 h	S	0.500	3.8 E-11	6.1 E-11	0.500	7.9 E-11
Zn-65	244 d	S	0.500	2.9 E-09	2.8 E-09	0.500	3.9 E-09
Zn-69	0.950 h	S	0.500	2.8 E-11	4.3 E-11	0.500	3.1 E-11
Zn-69m	13.8 h	S	0.500	2.6 E-10	3.3 E-10	0.500	3.3 E-10
Zn-71m	3.92 h	S	0.500	1.6 E-10	2.4 E-10	0.500	2.4 E-10
Zn-72	1.94 d	S	0.500	1.2 E-09	1.5 E-09	0.500	1.4 E-09
Galiu							
Ga-65	0.253 h	F	0.001	1.2 E-11	2.0 E-11	0.001	3.7 E-11
		M	0.001	1.8 E-11	2.9 E-11		
Ga-66	9.40 h	F	0.001	2.7 E-10	4.7 E-10	0.001	1.2 E-09
		M	0.001	4.6 E-10	7.1 E-10		
Ga-67	3.26 d	F	0.001	6.8 E-11	1.1 E-10	0.001	1.9 E-10
		M	0.001	2.3 E-10	2.8 E-10		
Ga-68	1.13 h	F	0.001	2.8 E-11	4.9 E-11	0.001	1.0 E-10
		M	0.001	5.1 E-11	8.1 E-11		
Ga-70	0.353 h	F	0.001	9.3 E-12	1.6 E-11	0.001	3.1 E-11
		M	0.001	1.6 E-11	2.6 E-11		
Ga-72	14.1 h	F	0.001	3.1 E-10	5.6 E-10	0.001	1.1 E-09

		M	0.001	5.5 E-10	8.4 E-10		
Ga-73	4.91 h	F	0.001	5.8 E-11	1.0 E-10	0.001	2.6 E-10
		M	0.001	1.5 E-10	2.0 E-10		
Germaniu							
Ge-66	2.27 h	F	1.000	5.7 E-11	9.9 E-11	1.000	1.0 E-10
		M	1.000	9.2 E-11	1.3 E-10		
Ge-67	0.312 h	F	1.000	1.6 E-11	2.8 E-11	1.000	6.5 E-11
		M	1.000	2.6 E-11	4.2 E-11		
Ge-68	288 d	F	1.000	5.4 E-10	8.3 E-10	1.000	1.3 E-09
		M	1.000	1.3 E-08	7.9 E-09		
Ge-69	1.63 d	F	1.000	1.4 E-10	2.5 E-10	1.000	2.4 E-10
		M	1.000	2.9 E-10	3.7 E-10		
Ge-71	11.8 d	F	1.000	5.0 E-12	7.8 E-12	1.000	1.2 E-11
		M	1.000	1.0 E-11	1.1 E-11		
Ge-75	1.38 h	F	1.000	1.6 E-11	2.7 E-11	1.000	4.6 E-11
		M	1.000	3.7 E-11	5.4 E-11		
Ge-77	11.3 h	F	1.000	1.5 E-10	2.5 E-10	1.000	3.3 E-10
		M	1.000	3.6 E-10	4.5 E-10		
Ge-78	1.45 h	F	1.000	4.8 E-11	8.1 E-11	1.000	1.2 E-10
		M	1.000	9.7 E-11	1.4 E-10		
Arsen							
As-69	0.253 h	M	0.500	2.2 E-11	3.5 E-11	0.500	5.7 E-11
As-70	0.876 h	M	0.500	7.2 E-11	1.2 E-10	0.500	1.3 E-10
As-71	2.70 d	M	0.500	4.0 E-10	5.0 E-10	0.500	4.6 E-10
As-72	1.08 d	M	0.500	9.2 E-10	1.3 E-09	0.500	1.8 E-09
As-73	80.3 d	M	0.500	9.3 E-10	6.5 E-10	0.500	2.6 E-10
As-74	17.8 d	M	0.500	2.1 E-09	1.8 E-09	0.500	1.3 E-09
As-76	1.10 d	M	0.500	7.4 E-10	9.2 E-10	0.500	1.6 E-09
As-77	1.62 d	M	0.500	3.8 E-10	4.2 E-10	0.500	4.0 E-10
As-78	1.51 h	M	0.500	9.2 E-11	1.4 E-10	0.500	2.1 E-10
Seleniu							
Se-70	0.683 h	F	0.800	4.5 E-11	8.2 E-11	0.800	1.2 E-10
		M	0.800	7.3 E-11	1.2 E-10	0.050	1.4 E-10
Se-73	7.15 h	F	0.800	8.6 E-11	1.5 E-10	0.800	2.1 E-10
		M	0.800	1.6 E-10	2.4 E-10	0.050	3.9 E-10
Se-73m	0.650 h	F	0.800	9.9 E-12	1.7 E-11	0.800	2.8 E-11
		M	0.800	1.8 E-11	2.7 E-11	0.050	4.1 E-11
Se-75	120 d	F	0.800	1.0 E-09	1.4 E-09	0.800	2.6 E-09
		M	0.800	1.4 E-09	1.7 E-09	0.050	4.1 E-10
Se-79	6.50E+04 a	F	0.800	1.2 E-09	1.6 E-09	0.800	2.9 E-09
		M	0.800	2.9 E-09	3.1 E-09	0.050	3.9 E-10
Se-81	0.308 h	F	0.800	8.6 E-12	1.4 E-11	0.800	2.7 E-11
		M	0.800	1.5 E-11	2.4 E-11	0.050	2.7 E-11
Se-81m	0.954 h	F	0.800	1.7 E-11	3.0 E-11	0.800	5.3 E-11
		M	0.800	4.7 E-11	6.8 E-11	0.050	5.9 E-11
Se-83	0.375 h	F	0.800	1.9 E-11	3.4 E-11	0.800	4.7 E-11
		M	0.800	3.3 E-11	5.3 E-11	0.050	5.1 E-11
Brom							

Br-74	0.422 h	F	1.000	2.8 E-11	5.0 E-11	1.000	8.4 E-11
		M	1.000	4.1 E-11	6.8 E-11		
Br-74m	0.691 h	F	1.000	4.2 E-11	7.5 E-11	1.000	1.4 E-10
		M	1.000	6.5 E-11	1.1 E-10		
Br-75	1.63 h	F	1.000	3.1 E-11	5.6 E-11	1.000	7.9 E-11
		M	1.000	5.5 E-11	8.5 E-11		
Br-76	16.2 h	F	1.000	2.6 E-10	4.5 E-10	1.000	4.6 E-10
		M	1.000	4.2 E-10	5.8 E-10		
Br-77	2.33 d	F	1.000	6.7 E-11	1.2 E-10	1.000	9.6 E-11
		M	1.000	8.7 E-11	1.3 E-10		
Br-80	0.290 h	F	1.000	6.3 E-12	1.1 E-11	1.000	3.1 E-11
		M	1.000	1.0 E-11	1.7 E-11		
Br-80m	4.42 h	F	1.000	3.5 E-11	5.8 E-11	1.000	1.1 E-10
		M	1.000	7.6 E-11	1.0 E-10		
Br-82	1.47 d	F	1.000	3.7 E-10	6.4 E-10	1.000	5.4 E-10
		M	1.000	6.4 E-10	8.8 E-10		
Br-83	2.39 h	F	1.000	1.7 E-11	2.9 E-11	1.000	4.3 E-11
		M	1.000	4.8 E-11	6.7 E-11		
Br-84	0.530 h	F	1.000	2.3 E-11	4.0 E-11	1.000	8.8 E-11
		M	1.000	3.9 E-11	6.2 E-11		

Rubidiu

Rb-79	0.382 h	F	1.000	1.7 E-11	3.0 E-11	1.000	5.0 E-11
Rb-81	4.58 h	F	1.000	3.7 E-11	6.8 E-11	1.000	5.4 E-11
Rb-81m	0.533 h	F	1.000	7.3 E-12	1.3 E-11	1.000	9.7 E-12
Rb-82m	6.20 h	F	1.000	1.2 E-10	2.2 E-10	1.000	1.3 E-10
Rb-83	86.2 d	F	1.000	7.1 E-10	1.0 E-09	1.000	1.9 E-09
Rb-84	32.8 d	F	1.000	1.1 E-09	1.5 E-09	1.000	2.8 E-09
Rb-86	18.6 d	F	1.000	9.6 E-10	1.3 E-09	1.000	2.8 E-09
Rb-87	4.70E+10 a	F	1.000	5.1 E-10	7.6 E-10	1.000	1.5 E-09
Rb-88	0.297 h	F	1.000	1.7 E-11	2.8 E-11	1.000	9.0 E-11
Rb-89	0.253 h	F	1.000	1.4 E-11	2.5 E-11	1.000	4.7 E-11

Stronțiu

Sr-80	1.67 h	F	0.300	7.6 E-11	1.3 E-10	0.300	3.4 E-10
		S	0.010	1.4 E-10	2.1 E-10	0.010	3.5 E-10
Sr-81	0.425 h	F	0.300	2.2 E-11	3.9 E-11	0.300	7.7 E-11
		S	0.010	3.8 E-11	6.1 E-11	0.010	7.8 E-11
Sr-82	25.0 d	F	0.300	2.2 E-09	3.3 E-09	0.300	6.1 E-09
		S	0.010	1.0 E-08	7.7 E-09	0.010	6.0 E-09
Sr-83	1.35 d	F	0.300	1.7 E-10	3.0 E-10	0.300	4.9 E-10
		S	0.010	3.4 E-10	4.9 E-10	0.010	5.8 E-10
Sr-85	64.8 d	F	0.300	3.9 E-10	5.6 E-10	0.300	5.6 E-10
		S	0.010	7.7 E-10	6.4 E-10	0.010	3.3 E-10

Sr-85m	1.16 h	F	0.300	3.1 E-12	5.6 E-12	0.300	6.1 E-12
		S	0.010	4.5 E-12	7.4 E-12	0.010	6.1 E-12
Sr-87m	2.80 h	F	0.300	1.2 E-11	2.2 E-11	0.300	3.0 E-11
		S	0.010	2.2 E-11	3.5 E-11	0.010	3.3 E-11
Sr-89	50.5 d	F	0.300	1.0 E-09	1.4 E-09	0.300	2.6 E-09
		S	0.010	7.5 E-09	5.6 E-09	0.010	2.3 E-09
Sr-90	29.1 a	F	0.300	2.4 E-08	3.0 E-08	0.300	2.8 E-08

		S	0.010	1.5 E-07	7.7 E-08	0.010	2.7 E-09
Sr-91	9.50 h	F	0.300	1.7 E-10	2.9 E-10	0.300	6.5 E-10
		S	0.010	4.1 E-10	5.7 E-10	0.010	7.6 E-10
Sr-92	2.71 h	F	0.300	1.1 E-10	1.8 E-10	0.300	4.3 E-10
		S	0.010	2.3 E-10	3.4 E-10	0.010	4.9 E-10
Ytriu							
Y-86	14.7 h	M	1.0 E-04	4.8 E-10	8.0 E-10	1.0 E-04	9.6 E-10
		S	1.0 E-04	4.9 E-10	8.1 E-10		
Y-86m	0.800 h	M	1.0 E-04	2.9 E-11	4.8 E-11	1.0 E-04	5.6 E-11
		S	1.0 E-04	3.0 E-11	4.9 E-11		
Y-87	3.35 d	M	1.0 E-04	3.8 E-10	5.2 E-10	1.0 E-04	5.5 E-10
		S	1.0 E-04	4.0 E-10	5.3 E-10		
Y-88	107 d	M	1.0 E-04	3.9 E-09	3.3 E-09	1.0 E-04	1.3 E-09
		S	1.0 E-04	4.1 E-09	3.0 E-09		
Y-90	2.67 d	M	1.0 E-04	1.4 E-09	1.6 E-09	1.0 E-04	2.7 E-09
		S	1.0 E-04	1.5 E-09	1.7 E-09		
Y-90m	3.19 h	M	1.0 E-04	9.6 E-11	1.3 E-10	1.0 E-04	1.7 E-10
		S	1.0 E-04	1.0 E-10	1.3 E-10		
Y-91	58.5 d	M	1.0 E-04	6.7 E-09	5.2 E-09	1.0 E-04	2.4 E-09
		S	1.0 E-04	8.4 E-09	6.1 E-09		
Y-91m	0.828 h	M	1.0 E-04	1.0 E-11	1.4 E-11	1.0 E-04	1.1 E-11
		S	1.0 E-04	1.1 E-11	1.5 E-11		
Y-92	3.54 h	M	1.0 E-04	1.9 E-10	2.7 E-10	1.0 E-04	4.9 E-10
		S	1.0 E-04	2.0 E-10	2.8 E-10		
Y-93	10.1 h	M	1.0 E-04	4.1 E-10	5.7 E-10	1.0 E-04	1.2 E-09
		S	1.0 E-04	4.3 E-10	6.0 E-10		
Y-94	0.318 h	M	1.0 E-04	2.8 E-11	4.4 E-11	1.0 E-04	8.1 E-11
		S	1.0 E-04	2.9 E-11	4.6 E-11		
Y-95	0.178 h	M	1.0 E-04	1.6 E-11	2.5 E-11	1.0 E-04	4.6 E-11
		S	1.0 E-04	1.7 E-11	2.6 E-11		
Zirconiu							
Zr-86	16.5 h	F	0.002	3.0 E-10	5.2 E-10	0.002	8.6 E-10
		M	0.002	4.3 E-10	6.8 E-10		
		S	0.002	4.5 E-10	7.0 E-10		
Zr-88	83.4 d	F	0.002	3.5 E-09	4.1 E-09	0.002	3.3 E-10
		M	0.002	2.5 E-09	1.7 E-09		
		S	0.002	3.3 E-09	1.8 E-09		
Zr-89	3.27 d	F	0.002	3.1 E-10	5.2 E-10	0.002	7.9 E-10
		M	0.002	5.3 E-10	7.2 E-10		
		S	0.002	5.5 E-10	7.5 E-10		
Zr-93	1.53E+06 a	F	0.002	2.5 E-08	2.9 E-08	0.002	2.8 E-10
		M	0.002	9.6 E-09	6.6 E-09		
		S	0.002	3.1 E-09	1.7 E-09		
Zr-95	64.0 d	F	0.002	2.5 E-09	3.0 E-09	0.002	8.8 E-10
		M	0.002	4.5 E-09	3.6 E-09		
		S	0.002	5.5 E-09	4.2 E-09		
Zr-97	16.9 h	F	0.002	4.2 E-10	7.4 E-10	0.002	2.1 E-09
		M	0.002	9.4 E-10	1.3 E-09		
		S	0.002	1.0 E-09	1.4 E-09		
Niobiu							

Nb-88	0.238 h	M	0.010	2.9 E-11	4.8 E-11	0.010	6.3 E-11
		S	0.010	3.0 E-11	5.0 E-11		
Nb-89	2.03 h	M	0.010	1.2 E-10	1.8 E-10	0.010	3.0 E-10
		S	0.010	1.3 E-10	1.9 E-10		
Nb-89	1.10 h	M	0.010	7.1 E-11	1.1 E-10	0.010	1.4 E-10
		S	0.010	7.4 E-11	1.2 E-10		
Nb-90	14.6 h	M	0.010	6.6 E-10	1.0 E-09	0.010	1.2 E-09
		S	0.010	6.9 E-10	1.1 E-09		
Nb-93m	13.6 a	M	0.010	4.6 E-10	2.9 E-10	0.010	1.2 E-10
		S	0.010	1.6 E-09	8.6 E-10		
Nb-94	2.03E+04 a	M	0.010	1.0 E-08	7.2 E-09	0.010	1.7 E-09
		S	0.010	4.5 E-08	2.5 E-08		
Nb-95	35.1 d	M	0.010	1.4 E-09	1.3 E-09	0.010	5.8 E-10
		S	0.010	1.6 E-09	1.3 E-09		
Nb-95m	3.61 d	M	0.010	7.6 E-10	7.7 E-10	0.010	5.6 E-10
		S	0.010	8.5 E-10	8.5 E-10		
Nb-96	23.3 h	M	0.010	6.5 E-10	9.7 E-10	0.010	1.1 E-09
		S	0.010	6.8 E-10	1.0 E-09		
Nb-97	1.20 h	M	0.010	4.4 E-11	6.9 E-11	0.010	6.8 E-11
		S	0.010	4.7 E-11	7.2 E-11		
Nb-98	0.858 h	M	0.010	5.9 E-11	9.6 E-11	0.010	1.1 E-10
		S	0.010	6.1 E-11	9.9 E-11		
Molibden							
Mo-90	5.67 h	F	0.800	1.7 E-10	2.9 E-10	0.800	3.1 E-10
		S	0.050	3.7 E-10	5.6 E-10	0.050	6.2 E-10
Mo-93	3.50E+03 a	F	0.800	1.0 E-09	1.4 E-09	0.800	2.6 E-09
		S	0.050	2.2 E-09	1.2 E-09	0.050	2.0 E-10
Mo-93m	6.85 h	F	0.800	1.0 E-10	1.9 E-10	0.800	1.6 E-10
		S	0.050	1.8 E-10	3.0 E-10	0.050	2.8 E-10
Mo-99	2.75 d	F	0.800	2.3 E-10	3.6 E-10	0.800	7.4 E-10
		S	0.050	9.7 E-10	1.1 E-09	0.050	1.2 E-09
Mo-101	0.244 h	F	0.800	1.5 E-11	2.7 E-11	0.800	4.2 E-11
		S	0.050	2.7 E-11	4.5 E-11	0.050	4.2 E-11
Tehnețiu							
Tc-93	2.75 h	F	0.800	3.4 E-11	6.2 E-11	0.800	4.9 E-11
		M	0.800	3.6 E-11	6.5 E-11		
Tc-93m	0.725 h	F	0.800	1.5 E-11	2.6 E-11	0.800	2.4 E-11
		M	0.800	1.7 E-11	3.1 E-11		
Tc-94	4.88 h	F	0.800	1.2 E-10	2.1 E-10	0.800	1.8 E-10
		M	0.800	1.3 E-10	2.2 E-10		

Tc-94m	0.867 h	F	0.800	4.3 E-11	6.9 E-11	0.800	1.1 E-10
		M	0.800	4.9 E-11	8.0 E-11		
Tc-95	20.0 h	F	0.800	1.0 E-10	1.8 E-10	0.800	1.6 E-10
		M	0.800	1.0 E-10	1.8 E-10		
Tc-95m	61.0 d	F	0.800	3.1 E-10	4.8 E-10	0.800	6.2 E-10
		M	0.800	8.7 E-10	8.6 E-10		
Tc-96	4.28 d	F	0.800	6.0 E-10	9.8 E-10	0.800	1.1 E-09
		M	0.800	7.1 E-10	1.0 E-09		
Tc-96m	0.858 h	F	0.800	6.5 E-12	1.1 E-11	0.800	1.3 E-11

		M	0.800	7.7 E-12	1.1 E-11		
Tc-97	2.60E+06 a	F	0.800	4.5 E-11	7.2 E-11	0.800	8.3 E-11
		M	0.800	2.1 E-10	1.6 E-10		
Tc-97m	87.0 d	F	0.800	2.8 E-10	4.0 E-10	0.800	6.6 E-10
		M	0.800	3.1 E-09	2.7 E-09		
Tc-98	4.20E+06 a	F	0.800	1.0 E-09	1.5 E-09	0.800	2.3 E-09
		M	0.800	8.1 E-09	6.1 E-09		
Tc-99	2.13E+05 a	F	0.800	2.9 E-10	4.0 E-10	0.800	7.8 E-10
		M	0.800	3.9 E-09	3.2 E-09		
Tc-99m	6.02 h	F	0.800	1.2 E-11	2.0 E-11	0.800	2.2 E-11
		M	0.800	1.9 E-11	2.9 E-11		
Tc-101	0.237 h	F	0.800	8.7 E-12	1.5 E-11	0.800	1.9 E-11
		M	0.800	1.3 E-11	2.1 E-11		
Tc-104	0.303 h	F	0.800	2.4 E-11	3.9 E-11	0.800	8.1 E-11
		M	0.800	3.0 E-11	4.8 E-11		
Ruteniu							
Ru-94	0.863 h	F	0.050	2.7 E-11	4.9 E-11	0.050	9.4 E-11
		M	0.050	4.4 E-11	7.2 E-11		
		S	0.050	4.6 E-11	7.4 E-11		
Ru-97	2.90 d	F	0.050	6.7 E-11	1.2 E-10	0.050	1.5 E-10
		M	0.050	1.1 E-10	1.6 E-10		
		S	0.050	1.1 E-10	1.6 E-10		
Ru-103	39.3 d	F	0.050	4.9 E-10	6.8 E-10	0.050	7.3 E-10
		M	0.050	2.3 E-09	1.9 E-09		
		S	0.050	2.8 E-09	2.2 E-09		
Ru-105	4.44 h	F	0.050	7.1 E-11	1.3 E-10	0.050	2.6 E-10
		M	0.050	1.7 E-10	2.4 E-10		
		S	0.050	1.8 E-10	2.5 E-10		
Ru-106	1.01 a	F	0.050	8.0 E-09	9.8 E-09	0.050	7.0 E-09
		M	0.050	2.6 E-08	1.7 E-08		
		S	0.050	6.2 E-08	3.5 E-08		
Rodiu							
Rh-99	16.0 d	F	0.050	3.3 E-10	4.9 E-10	0.050	5.1 E-10
		M	0.050	7.3 E-10	8.2 E-10		
		S	0.050	8.3 E-10	8.9 E-10		
Rh-99m	4.70 h	F	0.050	3.0 E-11	5.7 E-11	0.050	6.6 E-11
		M	0.050	4.1 E-11	7.2 E-11		
		S	0.050	4.3 E-11	7.3 E-11		
Rh-100	20.8 h	F	0.050	2.8 E-10	5.1 E-10	0.050	7.1 E-10
		M	0.050	3.6 E-10	6.2 E-10		
		S	0.050	3.7 E-10	6.3 E-10		
Rh-101	3.20 a	F	0.050	1.4 E-09	1.7 E-09	0.050	5.5 E-10
		M	0.050	2.2 E-09	1.7 E-09		
		S	0.050	5.0 E-09	3.1 E-09		
Rh-101m	4.34 d	F	0.050	1.0 E-10	1.7 E-10	0.050	2.2 E-10
		M	0.050	2.0 E-10	2.5 E-10		
		S	0.050	2.1 E-10	2.7 E-10		
Rh-102	2.90 a	F	0.050	7.3 E-09	8.9 E-09	0.050	2.6 E-09
		M	0.050	6.5 E-09	5.0 E-09		
		S	0.050	1.6 E-08	9.0 E-09		
Rh-102m	207 d	F	0.050	1.5 E-09	1.9 E-09	0.050	1.2 E-09

		M	0.050	3.8 E-09	2.7 E-09		
		S	0.050	6.7 E-09	4.2 E-09		
Rh-103m	0.935 h	F	0.050	8.6 E-13	1.2 E-12	0.050	3.8 E-12
		M	0.050	2.3 E-12	2.4 E-12		
		S	0.050	2.5 E-12	2.5 E-12		
Rh-105	1.47 d	F	0.050	8.7 E-11	1.5 E-10	0.050	3.7 E-10
		M	0.050	3.1 E-10	4.1 E-10		
		S	0.050	3.4 E-10	4.4 E-10		
Rh-106m	2.20 h	F	0.050	7.0 E-11	1.3 E-10	0.050	1.6 E-10
		M	0.050	1.1 E-10	1.8 E-10		
		S	0.050	1.2 E-10	1.9 E-10		
Rh-107	0.362 h	F	0.050	9.6 E-12	1.6 E-11	0.050	2.4 E-11
		M	0.050	1.7 E-11	2.7 E-11		
		S	0.050	1.7 E-11	2.8 E-11		
Paladiu							
Pd-100	3.63 d	F	0.005	4.9 E-10	7.6 E-10	0.005	9.4 E-10
		M	0.005	7.9 E-10	9.5 E-10		
		S	0.005	8.3 E-10	9.7 E-10		
Pd-101	8.27 h	F	0.005	4.2 E-11	7.5 E-11	0.005	9.4 E-11
		M	0.005	6.2 E-11	9.8 E-11		
		S	0.005	6.4 E-11	1.0 E-10		
Pd-103	17.0 d	F	0.005	9.0 E-11	1.2 E-10	0.005	1.9 E-10
		M	0.005	3.5 E-10	3.0 E-10		
		S	0.005	4.0 E-10	2.9 E-10		
Pd-107	6.50E+06 a	F	0.005	2.6 E-11	3.3 E-11	0.005	3.7 E-11
		M	0.005	8.0 E-11	5.2 E-11		
		S	0.005	5.5 E-10	2.9 E-10		
Pd-109	13.4 h	F	0.005	1.2 E-10	2.1 E-10	0.005	5.5 E-10
		M	0.005	3.4 E-10	4.7 E-10		
		S	0.005	3.6 E-10	5.0 E-10		
Argint							
Ag-102	0.215 h	F	0.050	1.4 E-11	2.4 E-11	0.050	4.0 E-11
		M	0.050	1.8 E-11	3.2 E-11		
		S	0.050	1.9 E-11	3.2 E-11		
Ag-103	1.09 h	F	0.050	1.6 E-11	2.8 E-11	0.050	4.3 E-11
		M	0.050	2.7 E-11	4.3 E-11		
		S	0.050	2.8 E-11	4.5 E-11		
Ag-104	1.15 h	F	0.050	3.0 E-11	5.7 E-11	0.050	6.0 E-11
		M	0.050	3.9 E-11	6.9 E-11		
		S	0.050	4.0 E-11	7.1 E-11		
Ag-104m	0.558 h	F	0.050	1.7 E-11	3.1 E-11	0.050	5.4 E-11
		M	0.050	2.6 E-11	4.4 E-11		
		S	0.050	2.7 E-11	4.5 E-11		
Ag-105	41.0 d	F	0.050	5.4 E-10	8.0 E-10	0.050	4.7 E-10
		M	0.050	6.9 E-10	7.0 E-10		
		S	0.050	7.8 E-10	7.3 E-10		
Ag-106	0.399 h	F	0.050	9.8 E-12	1.7 E-11	0.050	3.2 E-11
		M	0.050	1.6 E-11	2.6 E-11		
		S	0.050	1.6 E-11	2.7 E-11		
Ag-106m	8.41 d	F	0.050	1.1 E-09	1.6 E-09	0.050	1.5 E-09
		M	0.050	1.1 E-09	1.5 E-09		

		S	0.050	1.1 E-09	1.4 E-09		
Ag-108m	1.27E+02 a	F	0.050	6.1 E-09	7.3 E-09	0.050	2.3 E-09
		M	0.050	7.0 E-09	5.2 E-09		
		S	0.050	3.5 E-08	1.9 E-08		
Ag-110m	250 d	F	0.050	5.5 E-09	6.7 E-09	0.050	2.8 E-09
		M	0.050	7.2 E-09	5.9 E-09		
		S	0.050	1.2 E-08	7.3 E-09		
Ag-111	7.45 d	F	0.050	4.1 E-10	5.7 E-10	0.050	1.3 E-09
		M	0.050	1.5 E-09	1.5 E-09		
		S	0.050	1.7 E-09	1.6 E-09		
Ag-112	3.12 h	F	0.050	8.2 E-11	1.4 E-10	0.050	4.3 E-10
		M	0.050	1.7 E-10	2.5 E-10		
		S	0.050	1.8 E-10	2.6 E-10		
Ag-115	0.333 h	F	0.050	1.6 E-11	2.6 E-11	0.050	6.0 E-11
		M	0.050	2.8 E-11	4.3 E-11		
		S	0.050	3.0 E-11	4.4 E-11		

Cadmiu							
Cd-104	0.961 h	F	0.050	2.7 E-11	5.0 E-11	0.050	5.8 E-11
		M	0.050	3.6 E-11	6.2 E-11		
		S	0.050	3.7 E-11	6.3 E-11		
Cd-107	6.49 h	F	0.050	2.3 E-11	4.2 E-11	0.050	6.2 E-11
		M	0.050	8.1 E-11	1.0 E-10		
		S	0.050	8.7 E-11	1.1 E-10		
Cd-109	1.27 a	F	0.050	8.1 E-09	9.6 E-09	0.050	2.0 E-09
		M	0.050	6.2 E-09	5.1 E-09		
		S	0.050	5.8 E-09	4.4 E-09		
Cd-113	9.30E+15 a	F	0.050	1.2 E-07	1.4 E-07	0.050	2.5 E-08
		M	0.050	5.3 E-08	4.3 E-08		
		S	0.050	2.5 E-08	2.1 E-08		
Cd-113m	13.6 a	F	0.050	1.1 E-07	1.3 E-07	0.050	2.3 E-08
		M	0.050	5.0 E-08	4.0 E-08		
		S	0.050	3.0 E-08	2.4 E-08		
Cd-115	2.23 d	F	0.050	3.7 E-10	5.4 E-10	0.050	1.4 E-09
		M	0.050	9.7 E-10	1.2 E-09		
		S	0.050	1.1 E-09	1.3 E-09		
Cd-115m	44.6 d	F	0.050	5.3 E-09	6.4 E-09	0.050	3.3 E-09
		M	0.050	5.9 E-09	5.5 E-09		
		S	0.050	7.3 E-09	5.5 E-09		

Cd-117	2.49 h	F	0.050	7.3 E-11	1.3 E-10	0.050	2.8 E-10
		M	0.050	1.6 E-10	2.4 E-10		
		S	0.050	1.7 E-10	2.5 E-10		
Cd-117m	3.36 h	F	0.050	1.0 E-10	1.9 E-10	0.050	2.8 E-10
		M	0.050	2.0 E-10	3.1 E-10		
		S	0.050	2.1 E-10	3.2 E-10		

Indiu							
In-109	4.20 h	F	0.020	3.2 E-11	5.7 E-11	0.020	6.6 E-11
		M	0.020	4.4 E-11	7.3 E-11		
In-110	4.90 h	F	0.020	1.2 E-10	2.2 E-10	0.020	2.4 E-10
		M	0.020	1.4 E-10	2.5 E-10		

In-110	1.15 h	F	0.020	3.1 E-11	5.5 E-11	0.020	1.0 E-10
		M	0.020	5.0 E-11	8.1 E-11		
In-111	2.83 d	F	0.020	1.3 E-10	2.2 E-10	0.020	2.9 E-10
		M	0.020	2.3 E-10	3.1 E-10		
In-112	0.240 h	F	0.020	5.0 E-12	8.6 E-12	0.020	1.0 E-11
		M	0.020	7.8 E-12	1.3 E-11		
In-113m	1.66 h	F	0.020	1.0 E-11	1.9 E-11	0.020	2.8 E-11
		M	0.020	2.0 E-11	3.2 E-11		
In-114m	49.5 d	F	0.020	9.3 E-09	1.1 E-08	0.020	4.1 E-09
		M	0.020	5.9 E-09	5.9 E-09		
In-115	5.10E+15 a	F	0.020	3.9 E-07	4.5 E-07	0.020	3.2 E-08
		M	0.020	1.5 E-07	1.1 E-07		
In-115m	4.49 h	F	0.020	2.5 E-11	4.5 E-11	0.020	8.6 E-11
		M	0.020	6.0 E-11	8.7 E-11		
In-116m	0.902 h	F	0.020	3.0 E-11	5.5 E-11	0.020	6.4 E-11
		M	0.020	4.8 E-11	8.0 E-11		
In-117	0.730 h	F	0.020	1.6 E-11	2.8 E-11	0.020	3.1 E-11
		M	0.020	3.0 E-11	4.8 E-11		
In-117m	1.94 h	F	0.020	3.1 E-11	5.5 E-11	0.020	1.2 E-10
		M	0.020	7.3 E-11	1.1 E-10		
In-119m	0.300 h	F	0.020	1.1 E-11	1.8 E-11	0.020	4.7 E-11
		M	0.020	1.8 E-11	2.9 E-11		
Staniu							
Sn-110	4.00 h	F	0.020	1.1 E-10	1.9 E-10	0.020	3.5 E-10
		M	0.020	1.6 E-10	2.6 E-10		
Sn-111	0.588 h	F	0.020	8.3 E-12	1.5 E-11	0.020	2.3 E-11
		M	0.020	1.4 E-11	2.2 E-11		
Sn-113	115 d	F	0.020	5.4 E-10	7.9 E-10	0.020	7.3 E-10
		M	0.020	2.5 E-09	1.9 E-09		
Sn-117m	13.6 d	F	0.020	2.9 E-10	3.9 E-10	0.020	7.1 E-10
		M	0.020	2.3 E-09	2.2 E-09		
Sn-119m	293 d	F	0.020	2.9 E-10	3.6 E-10	0.020	3.4 E-10
		M	0.020	2.0 E-09	1.5 E-09		
Sn-121	1.13 d	F	0.020	6.4 E-11	1.0 E-10	0.020	2.3 E-10
		M	0.020	2.2 E-10	2.8 E-10		
Sn-121m	55.0 a	F	0.020	8.0 E-10	9.7 E-10	0.020	3.8 E-10
		M	0.020	4.2 E-09	3.3 E-09		
Sn-123	129 d	F	0.020	1.2 E-09	1.6 E-09	0.020	2.1 E-09
		M	0.020	7.7 E-09	5.6 E-09		
Sn-123m	0.668 h	F	0.020	1.4 E-11	2.4 E-11	0.020	3.8 E-11
		M	0.020	2.8 E-11	4.4 E-11		
Sn-125	9.64 d	F	0.020	9.2 E-10	1.3 E-09	0.020	3.1 E-09
		M	0.020	3.0 E-09	2.8 E-09		
Sn-126	1.00E+05 a	F	0.020	1.1 E-08	1.4 E-08	0.020	4.7 E-09
		M	0.020	2.7 E-08	1.8 E-08		
Sn-127	2.10 h	F	0.020	6.9 E-11	1.2 E-10	0.020	2.0 E-10
		M	0.020	1.3 E-10	2.0 E-10		
Sn-128	0.985 h	F	0.020	5.4 E-11	9.5 E-11	0.020	1.5 E-10
		M	0.020	9.6 E-11	1.5 E-10		
Stibiu							
Sb-115	0.530 h	F	0.100	9.2 E-12	1.7 E-11	0.100	2.4 E-11

		M	0.010	1.4 E-11	2.3 E-11		
Sb-116	0.263 h	F	0.100	9.9 E-12	1.8 E-11	0.100	2.6 E-11
		M	0.010	1.4 E-11	2.3 E-11		
Sb-116m	1.00 h	F	0.100	3.5 E-11	6.4 E-11	0.100	6.7 E-11
		M	0.010	5.0 E-11	8.5 E-11		
Sb-117	2.80 h	F	0.100	9.3 E-12	1.7 E-11	0.100	1.8 E-11
		M	0.010	1.7 E-11	2.7 E-11		
Sb-118m	5.00 h	F	0.100	1.0 E-10	1.9 E-10	0.100	2.1 E-10
		M	0.010	1.3 E-10	2.3 E-10		
Sb-119	1.59 d	F	0.100	2.5 E-11	4.5 E-11	0.100	8.1 E-11
		M	0.010	3.7 E-11	5.9 E-11		
Sb-120	5.76 d	F	0.100	5.9 E-10	9.8 E-10	0.100	1.2 E-09
		M	0.010	1.0 E-09	1.3 E-09		
Sb-120	0.265 h	F	0.100	4.9 E-12	8.5 E-12	0.100	1.4 E-11
		M	0.010	7.4 E-12	1.2 E-11		
Sb-122	2.70 d	F	0.100	3.9 E-10	6.3 E-10	0.100	1.7 E-09
		M	0.010	1.0 E-09	1.2 E-09		
Sb-124	60.2 d	F	0.100	1.3 E-09	1.9 E-09	0.100	2.5 E-09
		M	0.010	6.1 E-09	4.7 E-09		
Sb-124m	0.337 h	F	0.100	3.0 E-12	5.3 E-12	0.100	8.0E-12
		M	0.010	5.5 E-12	8.3 E-12		
Sb-125	2.77 a	F	0.100	1.4 E-09	1.7 E-09	0.100	1.1 E-09
		M	0.010	4.5 E-09	3.3 E-09		
Sb-126	12.4 d	F	0.100	1.1 E-09	1.7 E-09	0.100	2.4 E-09
		M	0.010	2.7 E-09	3.2 E-09		
Sb-126m	0.317 h	F	0.100	1.3 E-11	2.3 E-11	0.100	3.6 E-11
		M	0.010	2.0 E-11	3.3 E-11		
Sb-127	3.85 d	F	0.100	4.6 E-10	7.4 E-10	0.100	1.7 E-09
		M	0.010	1.6 E-09	1.7 E-09		
Sb-128	9.01 h	F	0.100	2.5 E-10	4.6 E-10	0.100	7.6 E-10
		M	0.010	4.2 E-10	6.7 E-10		
Sb-128	0.173 h	F	0.100	1.1 E-11	1.9 E-11	0.100	3.3 E-11
		M	0.010	1.5 E-11	2.6 E-11		
Sb-129	4.32 h	F	0.100	1.1 E-10	2.0 E-10	0.100	4.2 E-10
		M	0.010	2.4 E-10	3.5 E-10		
Sb-130	0.667 h	F	0.100	3.5 E-11	6.3 E-11	0.100	9.1 E-11
		M	0.010	5.4 E-11	9.1 E-11		
Sb-131	0.383 h	F	0.100	3.7 E-11	5.9 E-11	0.100	1.0 E-10
		M	0.010	5.2 E-11	8.3 E-11		
Telur							
Te-116	2.49 h	F	0.300	6.3 E-11	1.2 E-10	0.300	1.7 E-10
		M	0.300	1.1 E-10	1.7 E-10		
Te-121	17.0 d	F	0.300	2.5 E-10	3.9 E-10	0.300	4.3 E-10
		M	0.300	3.9 E-10	4.4 E-10		
Te-121m	154 d	F	0.300	1.8 E-09	2.3 E-09	0.300	2.3 E-09
		M	0.300	4.2 E-09	3.6 E-09		
Te-123	1.00E+13 a	F	0.300	4.0 E-09	5.0 E-09	0.300	4.4 E-09
		M	0.300	2.6 E-09	2.8 E-09		
Te-123m	120 d	F	0.300	9.7 E-10	1.2 E-09	0.300	1.4 E-09
		M	0.300	3.9 E-09	3.4 E-09		
Te-125m	58.0 d	F	0.300	5.1 E-10	6.7 E-10	0.300	8.7 E-10
		M	0.300	3.3 E-09	2.9 E-09		

Te-127	9.35 h	F	0.300	4.2 E-11	7.2 E-11	0.300	1.7 E-10
		M	0.300	1.2 E-10	1.8 E-10		
Te-127m	109 d	F	0.300	1.6 E-09	2.0 E-09	0.300	2.3 E-09
		M	0.300	7.2 E-09	6.2 E-09		
Te-129	1.16 h	F	0.300	1.7 E-11	2.9 E-11	0.300	6.3 E-11
		M	0.300	3.8 E-11	5.7 E-11		
Te-129m	33.6 d	F	0.300	1.3 E-09	1.8 E-09	0.300	3.0 E-09
		M	0.300	6.3 E-09	5.4 E-09		
Te-131	0.417 h	F	0.300	2.3 E-11	4.6 E-11	0.300	8.7 E-11
		M	0.300	3.8 E-11	6.1 E-11		
Te-131m	1.25 d	F	0.300	8.7 E-10	1.2 E-09	0.300	1.9 E-09
		M	0.300	1.1 E-09	1.6 E-09		
Te-132	3.26 d	F	0.300	1.8 E-09	2.4 E-09	0.300	3.7 E-09
		M	0.300	2.2 E-09	3.0 E-09		
Te-133	0.207 h	F	0.300	2.0 E-11	3.8 E-11	0.300	7.2 E-11
		M	0.300	2.7 E-11	4.4 E-11		
Te-133m	0.923 h	F	0.300	8.4 E-11	1.2 E-10	0.300	2.8 E-10
		M	0.300	1.2 E-10	1.9 E-10		
Te-134	0.696 h	F	0.300	5.0 E-11	8.3 E-11	0.300	1.1 E-10
		M	0.300	7.1 E-11	1.1 E-10		
Iod							
I-120	1.35 h	F	1.000	1.0 E-10	1.9 E-10	1.000	3.4 E-10
I-120m	0.883 h	F	1.000	8.7 E-11	1.4 E-10	1.000	2.1 E-10
I-121	2.12 h	F	1.000	2.8 E-11	3.9 E-11	1.000	8.2 E-11
I-123	13.2 h	F	1.000	7.6 E-11	1.1 E-10	1.000	2.1 E-10
I-124	4.18 d	F	1.000	4.5 E-09	6.3 E-09	1.000	1.3 E-08
I-125	60.1 d	F	1.000	5.3 E-09	7.3 E-09	1.000	1.5 E-08
I-126	13.0 d	F	1.000	1.0 E-08	1.4 E-08	1.000	2.9 E-08
I-128	0.416 h	F	1.000	1.4 E-11	2.2 E-11	1.000	4.6 E-11
I-129	1.57E+07 a	F	1.000	3.7 E-08	5.1 E-08	1.000	1.1 E-07
I-130	12.4 h	F	1.000	6.9 E-10	9.6 E-10	1.000	2.0 E-09
I-131	8.04 d	F	1.000	7.6 E-09	1.1 E-08	1.000	2.2 E-08
I-132	2.30 h	F	1.000	9.6 E-11	2.0 E-10	1.000	2.9 E-10
I-132m	1.39 h	F	1.000	8.1 E-11	1.1 E-10	1.000	2.2 E-10
I-133	20.8 h	F	1.000	1.5 E-09	2.1 E-09	1.000	4.3 E-09
I-134	0.876 h	F	1.000	4.8 E-11	7.9 E-11	1.000	1.1 E-10
I-135	6.61 h	F	1.000	3.3 E-10	4.6 E-10	1.000	9.3 E-10
Cesiu							
Cs-125	0.750 h	F	1.000	1.3 E-11	2.3 E-11	1.000	3.5 E-11
Cs-127	6.25 h	F	1.000	2.2 E-11	4.0 E-11	1.000	2.4 E-11
Cs-129	1.34 d	F	1.000	4.5 E-11	8.1 E-11	1.000	6.0 E-11
Cs-130	0.498 h	F	1.000	8.4 E-12	1.5 E-11	1.000	2.8 E-11
Cs-131	9.69 d	F	1.000	2.8 E-11	4.5 E-11	1.000	5.8 E-11
Cs-132	6.48 d	F	1.000	2.4 E-10	3.8 E-10	1.000	5.0 E-10
Cs-134	2.06 a	F	1.000	6.8 E-09	9.6 E-09	1.000	1.9 E-08
Cs-134m	2.90 h	F	1.000	1.5 E-11	2.6 E-11	1.000	2.0 E-11
Cs-135	2.30E+06 a	F	1.000	7.1 E-10	9.9 E-10	1.000	2.0 E-09
Cs-135m	0.883 h	F	1.000	1.3 E-11	2.4 E-11	1.000	1.9 E-11
Cs-136	13.1 d	F	1.000	1.3 E-09	1.9 E-09	1.000	3.0 E-09
Cs-137	30.0 a	F	1.000	4.8 E-09	6.7 E-09	1.000	1.3 E-08
Cs-138	0.536 h	F	1.000	2.6 E-11	4.6 E-11	1.000	9.2 E-11

Bariu							
Ba-126	1.61 h	F	0.100	7.8 E-11	1.2 E-10	0.100	2.6 E-10
Ba-128	2.43 d	F	0.100	8.0 E-10	1.3 E-09	0.100	2.7 E-09
Ba-131	11.8 d	F	0.100	2.3 E-10	3.5 E-10	0.100	4.5 E-10
Ba-131m	0.243 h	F	0.100	4.1 E-12	6.4 E-12	0.100	4.9 E-12
Ba-133	10.7 a	F	0.100	1.5 E-09	1.8 E-09	0.100	1.0 E-09
Ba-133m	1.62 d	F	0.100	1.9 E-10	2.8 E-10	0.100	5.5 E-10
Ba-135m	1.20 d	F	0.100	1.5 E-10	2.3 E-10	0.100	4.5 E-10
Ba-139	1.38 h	F	0.100	3.5 E-11	5.5 E-11	0.100	1.2 E-10
Ba-140	12.7 d	F	0.100	1.0 E-09	1.6 E-09	0.100	2.5 E-09
Ba-141	0.305 h	F	0.100	2.2 E-11	3.5 E-11	0.100	7.0 E-11
Ba-142	0.177 h	F	0.100	1.6 E-11	2.7 E-11	0.100	3.5 E-11
Lantan							
La-131	0.983 h	F	5.0 E-04	1.4 E-11	2.4 E-11	5.0 E-04	3.5 E-11
		M	5.0 E-04	2.3 E-11	3.6 E-11		
La-132	4.80 h	F	5.0 E-04	1.1 E-10	2.0 E-10	5.0 E-04	3.9 E-10
		M	5.0 E-04	1.7 E-10	2.8 E-10		
La-135	19.5 h	F	5.0 E-04	1.1 E-11	2.0 E-11	5.0 E-04	3.0 E-11
		M	5.0 E-04	1.5 E-11	2.5 E-11		
La-137	6.00E+04 a	F	5.0 E-04	8.6 E-09	1.0 E-08	5.0 E-04	8.1 E-11
		M	5.0 E-04	3.4 E-09	2.3 E-09		
La-138	1.35E+11 a	F	5.0 E-04	1.5 E-07	1.8 E-07	5.0 E-04	1.1 E-09
		M	5.0 E-04	6.1 E-08	4.2 E-08		
La-140	1.68 d	F	5.0 E-04	6.0 E-10	1.0 E-09	5.0 E-04	2.0 E-09
		M	5.0 E-04	1.1 E-09	1.5 E-09		
La-141	3.93 h	F	5.0 E-04	6.7 E-11	1.1 E-10	5.0 E-04	3.6 E-10
		M	5.0 E-04	1.5 E-10	2.2 E-10		
La-142	1.54 h	F	5.0 E-04	5.6 E-11	1.0 E-10	5.0 E-04	1.8 E-10
		M	5.0 E-04	9.3 E-11	1.5 E-10		
La-143	0.237 h	F	5.0 E-04	1.2 E-11	2.0 E-11	5.0 E-04	5.6 E-11
		M	5.0 E-04	2.2 E-11	3.3 E-11		
Ceriu							
Ce-134	3.00 d	M	5.0 E-04	1.3 E-09	1.5 E-09	5.0 E-04	2.5 E-09
		S	5.0 E-04	1.3 E-09	1.6 E-09		
Ce-135	17.6 h	M	5.0 E-04	4.9 E-10	7.3 E-10	5.0 E-04	7.9 E-10
		S	5.0 E-04	5.1 E-10	7.6 E-10		
Ce-137	9.00 h	M	5.0 E-04	1.0 E-11	1.8 E-11	5.0 E-04	2.5 E-11
		S	5.0 E-04	1.1 E-11	1.9 E-11		
Ce-137m	1.43 d	M	5.0 E-04	4.0 E-10	5.5 E-10	5.0 E-04	5.4 E-10
		S	5.0 E-04	4.3 E-10	5.9 E-10		
Ce-139	138 d	M	5.0 E-04	1.6 E-09	1.3 E-09	5.0 E-04	2.6 E-10
		S	5.0 E-04	1.8 E-09	1.4 E-09		
Ce-141	32.5 d	M	5.0 E-04	3.1 E-09	2.7 E-09	5.0 E-04	7.1 E-10
		S	5.0 E-04	3.6 E-09	3.1 E-09		
Ce-143	1.38 d	M	5.0 E-04	7.4 E-10	9.5 E-10	5.0 E-04	1.1 E-09
		S	5.0 E-04	8.1 E-10	1.0 E-09		
Ce-144	284 d	M	5.0 E-04	3.4 E-08	2.3 E-08	5.0 E-04	5.2 E-09
		S	5.0 E-04	4.9 E-08	2.9 E-08		
Praseodim							
Pr-136	0.218 h	M	5.0 E-04	1.4 E-11	2.4 E-11	5.0 E-04	3.3 E-11

		S	5.0 E-04	1.5 E-11	2.5 E-11		
Pr-137	1.28 h	M	5.0 E-04	2.1 E-11	3.4 E-11	5.0 E-04	4.0 E-11
		S	5.0 E-04	2.2 E-11	3.5 E-11		
Pr-138m	2.10 h	M	5.0 E-04	7.6 E-11	1.3 E-10	5.0 E-04	1.3 E-10
		S	5.0 E-04	7.9 E-11	1.3 E-10		
Pr-139	4.51 h	M	5.0 E-04	1.9 E-11	2.9 E-11	5.0 E-04	3.1 E-11
		S	5.0 E-04	2.0 E-11	3.0 E-11		
Pr-142	19.1 h	M	5.0 E-04	5.3 E-10	7.0 E-10	5.0 E-04	1.3 E-09
		S	5.0 E-04	5.6 E-10	7.4 E-10		
Pr-142m	0.243 h	M	5.0 E-04	6.7 E-12	8.9 E-12	5.0 E-04	1.7 E-11
		S	5.0 E-04	7.1 E-12	9.4 E-12		
Pr-143	13.6 d	M	5.0 E-04	2.1 E-09	1.9 E-09	5.0 E-04	1.2 E-09
		S	5.0 E-04	2.3 E-09	2.2 E-09		
Pr-144	0.288 h	M	5.0 E-04	1.8 E-11	2.9 E-11	5.0 E-04	5.0 E-11
		S	5.0 E-04	1.9 E-11	3.0 E-11		
Pr-145	5.98 h	M	5.0 E-04	1.6 E-10	2.5 E-10	5.0 E-04	3.9 E-10
		S	5.0 E-04	1.7 E-10	2.6 E-10		
Pr-147	0.227 h	M	5.0 E-04	1.8 E-11	2.9 E-11	5.0 E-04	3.3 E-11
		S	5.0 E-04	1.9 E-11	3.0 E-11		
Neodim							
Nd-136	0.844 h	M	5.0 E-04	5.3 E-11	8.5 E-11	5.0 E-04	9.9 E-11
		S	5.0 E-04	5.6 E-11	8.9 E-11		
Nd-138	5.04 h	M	5.0 E-04	2.4 E-10	3.7 E-10	5.0 E-04	6.4 E-10
		S	5.0 E-04	2.6 E-10	3.8 E-10		
Nd-139	0.495 h	M	5.0 E-04	1.0 E-11	1.7 E-11	5.0 E-04	2.0 E-11
		S	5.0 E-04	1.1 E-11	1.7 E-11		
Nd-139m	5.50 h	M	5.0 E-04	1.5 E-10	2.5 E-10	5.0 E-04	2.5 E-10
		S	5.0 E-04	1.6 E-10	2.5 E-10		
Nd-141	2.49 h	M	5.0 E-04	5.1 E-12	8.5 E-12	5.0 E-04	8.3 E-12
		S	5.0 E-04	5.3 E-12	8.8 E-12		
Nd-147	11.0 d	M	5.0 E-04	2.0 E-09	1.9 E-09	5.0 E-04	1.1 E-09
		S	5.0 E-04	2.3 E-09	2.1 E-09		
Nd-149	1.73 h	M	5.0 E-04	8.5 E-11	1.2 E-10	5.0 E-04	1.2 E-10
		S	5.0 E-04	9.0 E-11	1.3 E-10		
Nd-151							
Nd-151	0.207 h	M	5.0 E-04	1.7 E-11	2.8 E-11	5.0 E-04	3.0 E-11
		S	5.0 E-04	1.8 E-11	2.9 E-11		
Prometiū							
Pm-141	0.348 h	M	5.0 E-04	1.5 E-11	2.4 E-11	5.0 E-04	3.6 E-11
		S	5.0 E-04	1.6 E-11	2.5 E-11		
Pm-143	265 d	M	5.0 E-04	1.4 E-09	9.6 E-10	5.0 E-04	2.3 E-10
		S	5.0 E-04	1.3 E-09	8.3 E-10		
Pm-144	363 d	M	5.0 E-04	7.8 E-09	5.4 E-09	5.0 E-04	9.7 E-10
		S	5.0 E-04	7.0 E-09	3.9 E-09		
Pm-145	17.7 a	M	5.0 E-04	3.4 E-09	2.4 E-09	5.0 E-04	1.1 E-10
		S	5.0 E-04	2.1 E-09	1.2 E-09		
Pm-146	5.53 a	M	5.0 E-04	1.9 E-08	1.3 E-08	5.0 E-04	9.0 E-10
		S	5.0 E-04	1.6 E-08	9.0 E-09		
Pm-147	2.62 a	M	5.0 E-04	4.7 E-09	3.5 E-09	5.0 E-04	2.6 E-10
		S	5.0 E-04	4.6 E-09	3.2 E-09		
Pm-148	5.37 d	M	5.0 E-04	2.0 E-09	2.1 E-09	5.0 E-04	2.7 E-09

		S	5.0 E-04	2.1 E-09	2.2 E-09		
Pm-148m	41.3 d	M	5.0 E-04	4.9 E-09	4.1 E-09	5.0 E-04	1.8 E-09
		S	5.0 E-04	5.4 E-09	4.3 E-09		
Pm-149	2.21 d	M	5.0 E-04	6.6 E-10	7.6 E-10	5.0 E-04	9.9 E-10
		S	5.0 E-04	7.2 E-10	8.2 E-10		
Pm-150	2.68 h	M	5.0 E-04	1.3 E-10	2.0 E-10	5.0 E-04	2.6 E-10
		S	5.0 E-04	1.4 E-10	2.1 E-10		
Pm-151	1.18 d	M	5.0 E-04	4.2 E-10	6.1 E-10	5.0 E-04	7.3 E-10
		S	5.0 E-04	4.5 E-10	6.4 E-10		
Samariu							
Sm-141	0.170 h	M	5.0 E-04	1.6 E-11	2.7 E-11	5.0 E-04	3.9 E-11
Sm-141m	0.377 h	M	5.0 E-04	3.4 E-11	5.6 E-11	5.0 E-04	6.5 E-11
Sm-142	1.21 h	M	5.0 E-04	7.4 E-11	1.1 E-10	5.0 E-04	1.9 E-10
Sm-145	340 d	M	5.0 E-04	1.5 E-09	1.1 E-09	5.0 E-04	2.1 E-10
Sm-146	1.03E+08 a	M	5.0 E-04	9.9 E-06	6.7 E-06	5.0 E-04	5.4 E-08
Sm-147	1.06E+11 a	M	5.0 E-04	8.9 E-06	6.1 E-06	5.0 E-04	4.9 E-08
Sm-151	90.0 a	M	5.0 E-04	3.7 E-09	2.6 E-09	5.0 E-04	9.8 E-11
Sm-153	1.95 d	M	5.0 E-04	6.1 E-10	6.8 E-10	5.0 E-04	7.4 E-10
Sm-155	0.368 h	M	5.0 E-04	1.7 E-11	2.8 E-11	5.0 E-04	2.9 E-11
Sm-156	9.40 h	M	5.0 E-04	2.1 E-10	2.8 E-10	5.0 E-04	2.5 E-10
Europiu							
Eu-145	5.94 d	M	5.0 E-04	5.6 E-10	7.3 E-10	5.0 E-04	7.5 E-10
Eu-146	4.61 d	M	5.0 E-04	8.2 E-10	1.2 E-09	5.0 E-04	1.3 E-09
Eu-147	24.0 d	M	5.0 E-04	1.0 E-09	1.0 E-09	5.0 E-04	4.4 E-10
Eu-148	54.5 d	M	5.0 E-04	2.7 E-09	2.3 E-09	5.0 E-04	1.3 E-09
Eu-149	93.1 d	M	5.0 E-04	2.7 E-10	2.3 E-10	5.0 E-04	1.0 E-10
Eu-150	34.2 a	M	5.0 E-04	5.0 E-08	3.4 E-08	5.0 E-04	1.3 E-09
Eu-150	12.6 h	M	5.0 E-04	1.9 E-10	2.8 E-10	5.0 E-04	3.8 E-10
Eu-152	13.3 a	M	5.0 E-04	3.9 E-08	2.7 E-08	5.0 E-04	1.4 E-09
Eu-152m	9.32 h	M	5.0 E-04	2.2 E-10	3.2 E-10	5.0 E-04	5.0 E-10
Eu-154	8.80 a	M	5.0 E-04	5.0 E-08	3.5 E-08	5.0 E-04	2.0 E-09
Eu-155	4.96 a	M	5.0 E-04	6.5 E-09	4.7 E-09	5.0 E-04	3.2 E-10
Eu-156	15.2 d	M	5.0 E-04	3.3 E-09	3.0 E-09	5.0 E-04	2.2 E-09
Eu-157	15.1 h	M	5.0 E-04	3.2 E-10	4.4 E-10	5.0 E-04	6.0 E-10
Eu-158	0.765 h	M	5.0 E-04	4.8 E-11	7.5 E-11	5.0 E-04	9.4 E-11
Gadoliniu							
Gd-145	0.382 h	F	5.0 E-04	1.5 E-11	2.6 E-11	5.0 E-04	4.4 E-11
		M	5.0 E-04	2.1 E-11	3.5 E-11		
Gd-146	48.3 d	F	5.0 E-04	4.4 E-09	5.2 E-09	5.0 E-04	9.6 E-10
		M	5.0 E-04	6.0 E-09	4.6 E-09		
Gd-147	1.59 d	F	5.0 E-04	2.7 E-10	4.5 E-10	5.0 E-04	6.1 E-10
		M	5.0 E-04	4.1 E-10	5.9 E-10		
Gd-148	93.0 a	F	5.0 E-04	2.5 E-05	3.0 E-05	5.0 E-04	5.5 E-08
		M	5.0 E-04	1.1 E-05	7.2 E-06		
Gd-149	9.40 d	F	5.0 E-04	2.6 E-10	4.5 E-10	5.0 E-04	4.5 E-10
		M	5.0 E-04	7.0 E-10	7.9 E-10		
Gd-151	120 d	F	5.0 E-04	7.8 E-10	9.3 E-10	5.0 E-04	2.0 E-10
		M	5.0 E-04	8.1 E-10	6.5 E-10		
Gd-152	1.08E+14 a	F	5.0 E-04	1.9 E-05	2.2 E-05	5.0 E-04	4.1 E-08
		M	5.0 E-04	7.4 E-06	5.0 E-06		

Gd-153	242 d	F	5.0 E-04	2.1 E-09	2.5 E-09	5.0 E-04	2.7 E-10
		M	5.0 E-04	1.9 E-09	1.4 E-09		
Gd-159	18.6 h	F	5.0 E-04	1.1 E-10	1.8 E-10	5.0 E-04	4.9 E-10
		M	5.0 E-04	2.7 E-10	3.9 E-10		
Terbiu							
Tb-147	1.65 h	M	5.0 E-04	7.9 E-11	1.2 E-10	5.0 E-04	1.6 E-10
Tb-149	4.15 h	M	5.0 E-04	4.3 E-09	3.1 E-09	5.0 E-04	2.5 E-10
Tb-150	3.27 h	M	5.0 E-04	1.1 E-10	1.8 E-10	5.0 E-04	2.5 E-10
Tb-151	17.6 h	M	5.0 E-04	2.3 E-10	3.3 E-10	5.0 E-04	3.4 E-10
Tb-153	2.34 d	M	5.0 E-04	2.0 E-10	2.4 E-10	5.0 E-04	2.5 E-10
Tb-154	21.4 h	M	5.0 E-04	3.8 E-10	6.0 E-10	5.0 E-04	6.5 E-10
Tb-155	5.32 d	M	5.0 E-04	2.1 E-10	2.5 E-10	5.0 E-04	2.1 E-10
Tb-156	5.34 d	M	5.0 E-04	1.2 E-09	1.4 E-09	5.0 E-04	1.2 E-09
Tb-156m	1.02 d	M	5.0 E-04	2.0 E-10	2.3 E-10	5.0 E-04	1.7 E-10
Tb-156m	5.00 h	M	5.0 E-04	9.2 E-11	1.3 E-10	5.0 E-04	8.1 E-11
Tb-157	1.50E+02 a	M	5.0 E-04	1.1 E-09	7.9 E-10	5.0 E-04	3.4 E-11
Tb-158	1.50E+02 a	M	5.0 E-04	4.3 E-08	3.0 E-08	5.0 E-04	1.1 E-09
Tb-160	72.3 d	M	5.0 E-04	6.6 E-09	5.4 E-09	5.0 E-04	1.6 E-09
Tb-161	6.91 d	M	5.0 E-04	1.2 E-09	1.2 E-09	5.0 E-04	7.2 E-10
Disprosiu							
Dy-155	10.0 h	M	5.0 E-04	8.0 E-11	1.2 E-10	5.0 E-04	1.3 E-10
Dy-157	8.10 h	M	5.0 E-04	3.2 E-11	5.5 E-11	5.0 E-04	6.1 E-11
Dy-159	144 d	M	5.0 E-04	3.5 E-10	2.5 E-10	5.0 E-04	1.0 E-10
Dy-165	2.33 h	M	5.0 E-04	6.1 E-11	8.7 E-11	5.0 E-04	1.1 E-10
Dy-166	3.40 d	M	5.0 E-04	1.8 E-09	1.8 E-09	5.0 E-04	1.6 E-09
Holmiu							
Ho-155	0.800 h	M	5.0 E-04	2.0 E-11	3.2 E-11	5.0 E-04	3.7 E-11
Ho-157	0.210 h	M	5.0 E-04	4.5 E-12	7.6 E-12	5.0 E-04	6.5 E-12
Ho-159	0.550 h	M	5.0 E-04	6.3 E-12	1.0 E-11	5.0 E-04	7.9 E-12
Ho-161	2.50 h	M	5.0 E-04	6.3 E-12	1.0 E-11	5.0 E-04	1.3 E-11
Ho-162	0.250 h	M	5.0 E-04	2.9 E-12	4.5 E-12	5.0 E-04	3.3 E-12
Ho-162m	1.13 h	M	5.0 E-04	2.2 E-11	3.3 E-11	5.0 E-04	2.6 E-11
Ho-164	0.483 h	M	5.0 E-04	8.6 E-12	1.3 E-11	5.0 E-04	9.5 E-12
Ho-164m	0.625 h	M	5.0 E-04	1.2 E-11	1.6 E-11	5.0 E-04	1.6 E-11
Ho-166	1.12 d	M	5.0 E-04	6.6 E-10	8.3 E-10	5.0 E-04	1.4 E-09
Ho-166m	1.20E+03 a	M	5.0 E-04	1.1 E-07	7.8 E-08	5.0 E-04	2.0 E-09
Ho-167	3.10 h	M	5.0 E-04	7.1 E-11	1.0 E-10	5.0 E-04	8.3 E-11
Erbium							
Er-161	3.24 h	M	5.0 E-04	5.1 E-11	8.5 E-11	5.0 E-04	8.0 E-11
Er-165	10.4 h	M	5.0 E-04	8.3 E-12	1.4 E-11	5.0 E-04	1.9 E-11
Er-169	9.30 d	M	5.0 E-04	9.8 E-10	9.2 E-10	5.0 E-04	3.7 E-10
Er-171	7.52 h	M	5.0 E-04	2.2 E-10	3.0 E-10	5.0 E-04	3.6 E-10
Er-172	2.05 d	M	5.0 E-04	1.1 E-09	1.2 E-09	5.0 E-04	1.0 E-09
Tuliu							
Tm-162	0.362 h	M	5.0 E-04	1.6 E-11	2.7 E-11	5.0 E-04	2.9 E-11
Tm-166	7.70 h	M	5.0 E-04	1.8 E-10	2.8 E-10	5.0 E-04	2.8 E-10
Tm-167	9.24 d	M	5.0 E-04	1.1 E-09	1.0 E-09	5.0 E-04	5.6 E-10
Tm-170	129 d	M	5.0 E-04	6.6 E-09	5.2 E-09	5.0 E-04	1.3 E-09

Tm-171	1.92 a	M	5.0 E-04	1.3 E-09	9.1 E-10	5.0 E-04	1.1 E-10
Tm-172	2.65 d	M	5.0 E-04	1.1 E-09	1.4 E-09	5.0 E-04	1.7 E-09
Tm-173	8.24 h	M	5.0 E-04	1.8 E-10	2.6 E-10	5.0 E-04	3.1 E-10
Tm-175	0.253 h	M	5.0 E-04	1.9 E-11	3.1 E-11	5.0 E-04	2.7 E-11
Yterbiu							
Yb-162	0.315 h	M	5.0 E-04	1.4 E-11	2.2 E-11	5.0 E-04	2.3 E-11
		S	5.0 E-04	1.4 E-11	2.3 E-11		
Yb-166	2.36 d	M	5.0 E-04	7.2 E-10	9.1 E-10	5.0 E-04	9.5 E-10
		S	5.0 E-04	7.6 E-10	9.5 E-10		
Yb-167	0.292 h	M	5.0 E-04	6.5 E-12	9.0 E-12	5.0 E-04	6.7 E-12
		S	5.0 E-04	6.9 E-12	9.5 E-12		
Yb-169	32.0 d	M	5.0 E-04	2.4 E-09	2.1 E-09	5.0 E-04	7.1 E-10
		S	5.0 E-04	2.8 E-09	2.4 E-09		
Yb-175	4.19 d	M	5.0 E-04	6.3 E-10	6.4 E-10	5.0 E-04	4.4 E-10
		S	5.0 E-04	7.0 E-10	7.0 E-10		
Yb-177	1.90 h	M	5.0 E-04	6.4 E-11	8.8 E-11	5.0 E-04	9.7 E-11
		S	5.0 E-04	6.9 E-11	9.4 E-11		
Yb-178	1.23 h	M	5.0 E-04	7.1 E-11	1.0 E-10	5.0 E-04	1.2 E-10
		S	5.0 E-04	7.6 E-11	1.1 E-10		
Lutețiu							
Lu-169	1.42 d	M	5.0 E-04	3.5 E-10	4.7 E-10	5.0 E-04	4.6 E-10
		S	5.0 E-04	3.8 E-10	4.9 E-10		
Lu-170	2.00 d	M	5.0 E-04	6.4 E-10	9.3 E-10	5.0 E-04	9.9 E-10
		S	5.0 E-04	6.7 E-10	9.5 E-10		
Lu-171	8.22 d	M	5.0 E-04	7.6 E-10	8.8 E-10	5.0 E-04	6.7 E-10
		S	5.0 E-04	8.3 E-10	9.3 E-10		
Lu-172	6.70 d	M	5.0 E-04	1.4 E-09	1.7 E-09	5.0 E-04	1.3 E-09
		S	5.0 E-04	1.5 E-09	1.8 E-09		

Lu-173	1.37 a	M	5.0 E-04	2.0 E-09	1.5 E-09	5.0 E-04	2.6 E-10
		S	5.0 E-04	2.3 E-09	1.4 E-09		
Lu-174	3.31 a	M	5.0 E-04	4.0 E-09	2.9 E-09	5.0 E-04	2.7 E-10
		S	5.0 E-04	3.9 E-09	2.5 E-09		
Lu-174m	142 d	M	5.0 E-04	3.4 E-09	2.4 E-09	5.0 E-04	5.3 E-10
		S	5.0 E-04	3.8 E-09	2.6 E-09		
Lu-176	3.60E+10 a	M	5.0 E-04	6.6 E-08	4.6 E-08	5.0 E-04	1.8 E-09
		S	5.0 E-04	5.2 E-08	3.0 E-08		
Lu-176m	3.68 h	M	5.0 E-04	1.1 E-10	1.5 E-10	5.0 E-04	1.7 E-10
		S	5.0 E-04	1.2 E-10	1.6 E-10		
Lu-177	6.71 d	M	5.0 E-04	1.0 E-09	1.0 E-09	5.0 E-04	5.3 E-10
		S	5.0 E-04	1.1 E-09	1.1 E-09		
Lu-177m	161 d	M	5.0 E-04	1.2 E-08	1.0 E-08	5.0 E-04	1.7 E-09
		S	5.0 E-04	1.5 E-08	1.2 E-08		
Lu-178	0.473 h	M	5.0 E-04	2.5 E-11	3.9 E-11	5.0 E-04	4.7 E-11
		S	5.0 E-04	2.6 E-11	4.1 E-11		
Lu-178m	0.378 h	M	5.0 E-04	3.3 E-11	5.4 E-11	5.0 E-04	3.8 E-11
		S	5.0 E-04	3.5 E-11	5.6 E-11		
Lu-179	4.59 h	M	5.0 E-04	1.1 E-10	1.6 E-10	5.0 E-04	2.1 E-10
		S	5.0 E-04	1.2 E-10	1.6 E-10		

Hafniu							
Hf-170	16.0 h	F	0.002	1.7 E-10	2.9 E-10	0.002	4.8 E-10
		M	0.002	3.2 E-10	4.3 E-10		
Hf-172	1.87 a	F	0.002	3.2 E-08	3.7 E-08	0.002	1.0 E-09
		M	0.002	1.9 E-08	1.3 E-08		
Hf-173	24.0 h	F	0.002	7.9 E-11	1.3 E-10	0.002	2.3 E-10
		M	0.002	1.6 E-10	2.2 E-10		
Hf-175	70.0 d	F	0.002	7.2 E-10	8.7 E-10	0.002	4.1 E-10
		M	0.002	1.1 E-09	8.8 E-10		
Hf-177m	0.856 h	F	0.002	4.7 E-11	8.4 E-11	0.002	8.1 E-11
		M	0.002	9.2 E-11	1.5 E-10		
Hf-178m	31.0 a	F	0.002	2.6 E-07	3.1 E-07	0.002	4.7 E-09
		M	0.002	1.1 E-07	7.8 E-08		
Hf-179m	25.1 d	F	0.002	1.1 E-09	1.4 E-09	0.002	1.2 E-09
		M	0.002	3.6 E-09	3.2 E-09		
Hf-180m	5.50 h	F	0.002	6.4 E-11	1.2 E-10	0.002	1.7 E-10
		M	0.002	1.4 E-10	2.0 E-10		
Hf-181	42.4 d	F	0.002	1.4 E-09	1.8 E-09	0.002	1.1 E-09
		M	0.002	4.7 E-09	4.1 E-09		
Hf-182	9.00E+06 a	F	0.002	3.0 E-07	3.6 E-07	0.002	3.0 E-09
		M	0.002	1.2 E-07	8.3 E-08		
Hf-182m	1.02 h	F	0.002	2.3 E-11	4.0 E-11	0.002	4.2 E-11
		M	0.002	4.7 E-11	7.1 E-11		
Hf-183	1.07 h	F	0.002	2.6 E-11	4.4 E-11	0.002	7.3 E-11
		M	0.002	5.8 E-11	8.3 E-11		
Hf-184	4.12 h	F	0.002	1.3 E-10	2.3 E-10	0.002	5.2 E-10
		M	0.002	3.3 E-10	4.5 E-10		
Tantal							
Ta-172	0.613 h	M	0.001	3.4 E-11	5.5 E-11	0.001	5.3 E-11
		S	0.001	3.6 E-11	5.7 E-11		
Ta-173	3.65 h	M	0.001	1.1 E-10	1.6 E-10	0.001	1.9 E-10
		S	0.001	1.2 E-10	1.6 E-10		
Ta-174	1.20 h	M	0.001	4.2 E-11	6.3 E-11	0.001	5.7 E-11
		S	0.001	4.4 E-11	6.6 E-11		
Ta-175	10.5 h	M	0.001	1.3 E-10	2.0 E-10	0.001	2.1 E-10
		S	0.001	1.4 E-10	2.0 E-10		
Ta-176	8.08 h	M	0.001	2.0 E-10	3.2 E-10	0.001	3.1 E-10
		S	0.001	2.1 E-10	3.3 E-10		
Ta-177	2.36 d	M	0.001	9.3 E-11	1.2 E-10	0.001	1.1 E-10
		S	0.001	1.0 E-10	1.3 E-10		
Ta-178	2.20 h	M	0.001	6.6 E-11	1.0 E-10	0.001	7.8 E-11
		S	0.001	6.9 E-11	1.1 E-10		
Ta-179	1.82 a	M	0.001	2.0 E-10	1.3 E-10	0.001	6.5 E-11
		S	0.001	5.2 E-10	2.9 E-10		
Ta-180	1.00E+13 a	M	0.001	6.0 E-09	4.6 E-09	0.001	8.4 E-10
		S	0.001	2.4 E-08	1.4 E-08		
Ta-180m	8.10 h	M	0.001	4.4 E-11	5.8 E-11	0.001	5.4 E-11
		S	0.001	4.7 E-11	6.2 E-11		
Ta-182	115 d	M	0.001	7.2 E-09	5.8 E-09	0.001	1.5 E-09
		S	0.001	9.7 E-09	7.4 E-09		
Ta-182m	0.264 h	M	0.001	2.1 E-11	3.4 E-11	0.001	1.2 E-11
		S	0.001	2.2 E-11	3.6 E-11		

Ta-183	5.10 d	M	0.001	1.8 E-09	1.8 E-09	0.001	1.3 E-09
		S	0.001	2.0 E-09	2.0 E-09		
Ta-184	8.70 h	M	0.001	4.1 E-10	6.0 E-10	0.001	6.8 E-10
		S	0.001	4.4 E-10	6.3 E-10		
Ta-185	0.816 h	M	0.001	4.6 E-11	6.8 E-11	0.001	6.8 E-11
		S	0.001	4.9 E-11	7.2 E-11		
Ta-186	0.175 h	M	0.001	1.8 E-11	3.0 E-11	0.001	3.3 E-11
		S	0.001	1.9 E-11	3.1 E-11		
Wolfram							
W-176	2.30 h	F	0.300	4.4 E-11	7.6 E-11	0.300	1.0 E-10
						0.010	1.1 E-10
W-177	2.25 h	F	0.300	2.6 E-11	4.6 E-11	0.300	5.8 E-11
						0.010	6.1 E-11
W-178	21.7 d	F	0.300	7.6 E-11	1.2 E-10	0.300	2.2 E-10
						0.010	2.5 E-10
W-179	0.625 h	F	0.300	9.9 E-13	1.8 E-12	0.300	3.3 E-12
						0.010	3.3 E-12
W-181	121 d	F	0.300	2.8 E-11	4.3 E-11	0.300	7.6 E-11
						0.010	8.2 E-11
W-185	75.1 d	F	0.300	1.4 E-10	2.2 E-10	0.300	4.4 E-10
						0.010	5.0 E-10
W-187	23.9 h	F	0.300	2.0 E-10	3.3 E-10	0.300	6.3 E-10
						0.010	7.1 E-10
W-188	69.4 d	F	0.300	5.9 E-10	8.4 E-10	0.300	2.1 E-09
						0.010	2.3 E-09
Reniu							
Re-177	0.233 h	F	0.800	1.0 E-11	1.7 E-11	0.800	2.2 E-11
		M	0.800	1.4 E-11	2.2 E-11		
Re-178	0.220 h	F	0.800	1.1 E-11	1.8 E-11	0.800	2.5 E-11
		M	0.800	1.5 E-11	2.4 E-11		
Re-181	20.0 h	F	0.800	1.9 E-10	3.0 E-10	0.800	4.2 E-10
		M	0.800	2.5 E-10	3.7 E-10		
Re-182	2.67 d	F	0.800	6.8 E-10	1.1 E-09	0.800	1.4 E-09
		M	0.800	1.3 E-09	1.7 E-09		
Re-182	12.7 h	F	0.800	1.5 E-10	2.4 E-10	0.800	2.7 E-10
		M	0.800	2.0 E-10	3.0 E-10		
Re-184	38.0 d	F	0.800	4.6 E-10	7.0 E-10	0.800	1.0 E-09
		M	0.800	1.8 E-09	1.8 E-09		
Re-184m	165 d	F	0.800	6.1 E-10	8.8 E-10	0.800	1.5 E-09
		M	0.800	6.1 E-09	4.8 E-09		
Re-186	3.78 d	F	0.800	5.3 E-10	7.3 E-10	0.800	1.5 E-09
		M	0.800	1.1 E-09	1.2 E-09		
Re-186m	2.00E+05 a	F	0.800	8.5 E-10	1.2 E-09	0.800	2.2 E-09
		M	0.800	1.1 E-08	7.9 E-09		
Re-187	5.00E+10 a	F	0.800	1.9 E-12	2.6 E-12	0.800	5.1 E-12
		M	0.800	6.0 E-12	4.6 E-12		
Re-188	17.0 h	F	0.800	4.7 E-10	6.6 E-10	0.800	1.4 E-09
		M	0.800	5.5 E-10	7.4 E-10		
Re-188m	0.310 h	F	0.800	1.0 E-11	1.6 E-11	0.800	3.0 E-11
		M	0.800	1.4 E-11	2.0 E-11		
Re-189	1.01 d	F	0.800	2.7 E-10	4.3 E-10	0.800	7.8 E-10

		M	0.800	4.3 E-10	6.0 E-10		
Osmiu							
Os-180	0.366 h	F	0.010	8.8 E-12	1.6 E-11	0.010	1.7 E-11
		M	0.010	1.4 E-11	2.4 E-11		
		S	0.010	1.5 E-11	2.5 E-11		
Os-181	1.75 h	F	0.010	3.6 E-11	6.4 E-11	0.010	8.9 E-11
		M	0.010	6.3 E-11	9.6 E-11		
		S	0.010	6.6 E-11	1.0 E-10		
Os-182	22.0 h	F	0.010	1.9 E-10	3.2 E-10	0.010	5.6 E-10
		M	0.010	3.7 E-10	5.0 E-10		
		S	0.010	3.9 E-10	5.2 E-10		
Os-185	94.0 d	F	0.010	1.1 E-09	1.4 E-09	0.010	5.1 E-10
		M	0.010	1.2 E-09	1.0 E-09		
		S	0.010	1.5 E-09	1.1 E-09		
Os-189m	6.00 h	F	0.010	2.7 E-12	5.2 E-12	0.010	1.8 E-11
		M	0.010	5.1 E-12	7.6 E-12		
		S	0.010	5.4 E-12	7.9 E-12		
Os-191	15.4 d	F	0.010	2.5 E-10	3.5 E-10	0.010	5.7 E-10
		M	0.010	1.5 E-09	1.3 E-09		
		S	0.010	1.8 E-09	1.5 E-09		
Os-191m	13.0 h	F	0.010	2.6 E-11	4.1 E-11	0.010	9.6 E-11
		M	0.010	1.3 E-10	1.3 E-10		
		S	0.010	1.5 E-10	1.4 E-10		
Os-193	1.25 d	F	0.010	1.7 E-10	2.8 E-10	0.010	8.1 E-10
		M	0.010	4.7 E-10	6.4 E-10		
		S	0.010	5.1 E-10	6.8 E-10		

Os-194	6.00 a	F	0.010	1.1 E-08	1.3 E-08	0.010	2.4 E-09
		M	0.010	2.0 E-08	1.3 E-08		
		S	0.010	7.9 E-08	4.2 E-08		
Iridiu							
Ir-182	0.250 h	F	0.010	1.5 E-11	2.6 E-11	0.010	4.8 E-11
		M	0.010	2.4 E-11	3.9 E-11		
		S	0.010	2.5 E-11	4.0 E-11		
Ir-184	3.02 h	F	0.010	6.7 E-11	1.2 E-10	0.010	1.7 E-10
		M	0.010	1.1 E-10	1.8 E-10		
		S	0.010	1.2 E-10	1.9 E-10		
Ir-185	14.0 h	F	0.010	8.8 E-11	1.5 E-10	0.010	2.6 E-10
		M	0.010	1.8 E-10	2.5 E-10		
		S	0.010	1.9 E-10	2.6 E-10		
Ir-186	15.8 h	F	0.010	1.8 E-10	3.3 E-10	0.010	4.9 E-10
		M	0.010	3.2 E-10	4.8 E-10		
		S	0.010	3.3 E-10	5.0 E-10		
Ir-186	1.75 h	F	0.010	2.5 E-11	4.5 E-11	0.010	6.1 E-11
		M	0.010	4.3 E-11	6.9 E-11		
		S	0.010	4.5 E-11	7.1 E-11		
Ir-187	10.5 h	F	0.010	4.0 E-11	7.2 E-11	0.010	1.2 E-10
		M	0.010	7.5 E-11	1.1 E-10		
		S	0.010	7.9 E-11	1.2 E-10		
Ir-188	1.73 d	F	0.010	2.6 E-10	4.4 E-10	0.010	6.3 E-10

		M	0.010	4.1 E-10	6.0 E-10		
		S	0.010	4.3 E-10	6.2 E-10		
Ir-189	13.3 d	F	0.010	1.1 E-10	1.7 E-10	0.010	2.4 E-10
		M	0.010	4.8 E-10	4.1 E-10		
		S	0.010	5.5 E-10	4.6 E-10		
Ir-190	12.1 d	F	0.010	7.9 E-10	1.2 E-09	0.010	1.2 E-09
		M	0.010	2.0 E-09	2.3 E-09		
		S	0.010	2.3 E-09	2.5 E-09		
Ir-190m	3.10 h	F	0.010	5.3 E-11	9.7 E-11	0.010	1.2 E-10
		M	0.010	8.3 E-11	1.4 E-10		
		S	0.010	8.6 E-11	1.4 E-10		
Ir-190m	1.20 h	F	0.010	3.7 E-12	5.6 E-12	0.010	8.0 E-12
		M	0.010	9.0 E-12	1.0 E-11		
		S	0.010	1.0 E-11	1.1 E-11		
Ir-192	74.0 d	F	0.010	1.8 E-09	2.2 E-09	0.010	1.4 E-09
		M	0.010	4.9 E-09	4.1 E-09		
		S	0.010	6.2 E-09	4.9 E-09		
Ir-192m	2.41E+02 a	F	0.010	4.8 E-09	5.6 E-09	0.010	3.1 E-10
		M	0.010	5.4 E-09	3.4 E-09		
		S	0.010	3.6 E-08	1.9 E-08		
Ir-193m	11.9 d	F	0.010	1.0 E-10	1.6 E-10	0.010	2.7 E-10
		M	0.010	1.0 E-09	9.1 E-10		
		S	0.010	1.2 E-09	1.0 E-09		
Ir-194	19.1 h	F	0.010	2.2 E-10	3.6 E-10	0.010	1.3 E-09
		M	0.010	5.3 E-10	7.1 E-10		
		S	0.010	5.6 E-10	7.5 E-10		

Ir-194m	171 d	F	0.010	5.4 E-09	6.5 E-09	0.010	2.1 E-09
		M	0.010	8.5 E-09	6.5 E-09		
		S	0.010	1.2 E-08	8.2 E-09		
Ir-195	2.50 h	F	0.010	2.6 E-11	4.5 E-11	0.010	1.0 E-10
		M	0.010	6.7 E-11	9.6 E-11		
		S	0.010	7.2 E-11	1.0 E-10		
Ir-195m	3.80 h	F	0.010	6.5 E-11	1.1 E-10	0.010	2.1 E-10
		M	0.010	1.6 E-10	2.3 E-10		
		S	0.010	1.7 E-10	2.4 E-10		
Platină							
Pt-186	2.00 h	F	0.010	3.6 E-11	6.6 E-11	0.010	9.3 E-11
Pt-188	10.2 d	F	0.010	4.3 E-10	6.3 E-10	0.010	7.6 E-10
Pt-189	10.9 h	F	0.010	4.1 E-11	7.3 E-11	0.010	1.2 E-10
Pt-191	2.80 d	F	0.010	1.1 E-10	1.9 E-10	0.010	3.4 E-10
Pt-193	50.0 a	F	0.010	2.1 E-11	2.7 E-11	0.010	3.1 E-11
Pt-193m	4.33 d	F	0.010	1.3 E-10	2.1 E-10	0.010	4.5 E-10
Pt-195m	4.02 d	F	0.010	1.9 E-10	3.1 E-10	0.010	6.3 E-10
Pt-197	18.3 h	F	0.010	9.1 E-11	1.6 E-10	0.010	4.0 E-10
Pt-197m	1.57 h	F	0.010	2.5 E-11	4.3 E-11	0.010	8.4 E-11
Pt-199	0.513 h	F	0.010	1.3 E-11	2.2 E-11	0.010	3.9 E-11
Pt-200	12.5 h	F	0.010	2.4 E-10	4.0 E-10	0.010	1.2 E-09
Aur							
Au-193	17.6 h	F	0.100	3.9 E-11	7.1 E-11	0.100	1.3 E-10

		M	0.100	1.1 E-10	1.5 E-10		
		S	0.100	1.2 E-10	1.6 E-10		
Au-194	1.64 d	F	0.100	1.5 E-10	2.8 E-10	0.100	4.2 E-10
		M	0.100	2.4 E-10	3.7 E-10		
		S	0.100	2.5 E-10	3.8 E-10		
Au-195	183 d	F	0.100	7.1 E-11	1.2 E-10	0.100	2.5 E-10
		M	0.100	1.0 E-09	8.0 E-10		
		S	0.100	1.6 E-09	1.2 E-09		
Au-198	2.69 d	F	0.100	2.3 E-10	3.9 E-10	0.100	1.0 E-09
		M	0.100	7.6 E-10	9.8 E-10		
		S	0.100	8.4 E-10	1.1 E-09		
Au-198m	2.30 d	F	0.100	3.4 E-10	5.9 E-10	0.100	1.3 E-09
		M	0.100	1.7 E-09	2.0 E-09		
		S	0.100	1.9 E-09	1.9 E-09		
Au-199	3.14 d	F	0.100	1.1 E-10	1.9 E-10	0.100	4.4 E-10
		M	0.100	6.8 E-10	6.8 E-10		
		S	0.100	7.5 E-10	7.6 E-10		
Au-200	0.807 h	F	0.100	1.7 E-11	3.0 E-11	0.100	6.8 E-11
		M	0.100	3.5 E-11	5.3 E-11		
		S	0.100	3.6 E-11	5.6 E-11		
Au-200m	18.7 h	F	0.100	3.2 E-10	5.7 E-10	0.100	1.1 E-09
		M	0.100	6.9 E-10	9.8 E-10		
		S	0.100	7.3 E-10	1.0 E-09		
Au-201	0.440 h	F	0.100	9.2 E-12	1.6 E-11	0.100	2.4 E-11
		M	0.100	1.7 E-11	2.8 E-11		
		S	0.100	1.8 E-11	2.9 E-11		
Mercur							
Hg-193	3.50 h	F	0.400	2.6 E-11	4.7 E-11	1.000	3.1 E-11
(organic)						0.400	6.6 E-11
Hg-193	3.50 h	F	0.020	2.8 E-11	5.0 E-11	0.020	8.2 E-11
(anorganic)		M	0.020	7.5 E-11	1.0 E-10		
Hg-193m	11.1 h	F	0.400	1.1 E-10	2.0 E-10	1.000	1.3 E-10
(organic)						0.400	3.0 E-10
Hg-193m	11.1 h	F	0.020	1.2 E-10	2.3 E-10	0.020	4.0 E-10
(anorganic)		M	0.020	2.6 E-10	3.8 E-10		
Hg-194	2.60E+02 a	F	0.400	1.5 E-08	1.9 E-08	1.000	5.1 E-08
(organic)						0.400	2.1 E-08
Hg-194	2.60E+02 a	F	0.020	1.3 E-08	1.5 E-08	0.020	1.4 E-09
(anorganic)		M	0.020	7.8 E-09	5.3 E-09		
Hg-195	9.90 h	F	0.400	2.4 E-11	4.4 E-11	1.000	3.4 E-11
(organic)						0.400	7.5 E-11
Hg-195	9.90 h	F	0.020	2.7 E-11	4.8 E-11	0.020	9.7 E-11
(anorganic)		M	0.020	7.2 E-11	9.2 E-11		
Hg-195m	1.73 d	F	0.400	1.3 E-10	2.2 E-10	1.000	2.2 E-10
(organic)						0.400	4.1 E-10
Hg-195m	1.73 d	F	0.020	1.5 E-10	2.6 E-10	0.020	5.6 E-10
(anorganic)		M	0.020	5.1 E-10	6.5 E-10		
Hg-197	2.67 d	F	0.400	5.0 E-11	8.5 E-11	1.000	9.9 E-11
(organic)						0.400	1.7 E-10
Hg-197	2.67 d	F	0.020	6.0 E-11	1.0 E-10	0.020	2.3 E-10
(anorganic)		M	0.020	2.9 E-10	2.8 E-10		
Hg-197m	23.8 h	F	0.400	1.0 E-10	1.8 E-10	1.000	1.5 E-10

(organic)						0.400	3.4 E-10
Hg-197m	23.8 h	F	0.020	1.2 E-10	2.1 E-10	0.020	4.7 E-10
(anorganic)		M	0.020	5.1 E-10	6.6 E-10		
Hg-199m	0.710 h	F	0.400	1.6 E-11	2.7 E-11	1.000	2.8 E-11
(organic)						0.400	3.1 E-11
Hg-199m	0.710 h	F	0.020	1.6 E-11	2.7 E-11	0.020	3.1 E-11
(anorganic)		M	0.020	3.3 E-11	5.2 E-11		
Hg-203	46.6 d	F	0.400	5.7 E-10	7.5 E-10	1.000	1.9 E-09
(organic)						0.400	1.1 E-09
Hg-203	46.6 d	F	0.020	4.7 E-10	5.9 E-10	0.020	5.4 E-10
(anorganic)		M	0.020	2.3 E-09	1.9 E-09		

Taliu							
Tl-194	0.550 h	F	1.000	4.8 E-12	8.9 E-12	1.000	8.1 E-12
Tl-194m	0.546 h	F	1.000	2.0 E-11	3.6 E-11	1.000	4.0 E-11
Tl-195	1.16 h	F	1.000	1.6 E-11	3.0 E-11	1.000	2.7 E-11
Tl-197	2.84 h	F	1.000	1.5 E-11	2.7 E-11	1.000	2.3 E-11
Tl-198	5.30 h	F	1.000	6.6 E-11	1.2 E-10	1.000	7.3 E-11
Tl-198m	1.87 h	F	1.000	4.0 E-11	7.3 E-11	1.000	5.4 E-11
Tl-199	7.42 h	F	1.000	2.0 E-11	3.7 E-11	1.000	2.6 E-11
Tl-200	1.09 d	F	1.000	1.4 E-10	2.5 E-10	1.000	2.0 E-10
Tl-201	3.04 d	F	1.000	4.7 E-11	7.6 E-11	1.000	9.5 E-11
Tl-202	12.2 d	F	1.000	2.0 E-10	3.1 E-10	1.000	4.5 E-10
Tl-204	3.78 a	F	1.000	4.4 E-10	6.2 E-10	1.000	1.3 E-09

Plumb							
Pb-195m	0.263 h	F	0.200	1.7 E-11	3.0 E-11	0.200	2.9 E-11
Pb-198	2.40 h	F	0.200	4.7 E-11	8.7 E-11	0.200	1.0 E-10
Pb-199	1.50 h	F	0.200	2.6 E-11	4.8 E-11	0.200	5.4 E-11
Pb-200	21.5 h	F	0.200	1.5 E-10	2.6 E-10	0.200	4.0 E-10
Pb-201	9.40 h	F	0.200	6.5 E-11	1.2 E-10	0.200	1.6 E-10
Pb-202	3.00E+05 a	F	0.200	1.1 E-08	1.4 E-08	0.200	8.7 E-09
Pb-202m	3.62 h	F	0.200	6.7 E-11	1.2 E-10	0.200	1.3 E-10
Pb-203	2.17 d	F	0.200	9.1 E-11	1.6 E-10	0.200	2.4 E-10
Pb-205	1.43E+07 a	F	0.200	3.4 E-10	4.1 E-10	0.200	2.8 E-10
Pb-209	3.25 h	F	0.200	1.8 E-11	3.2 E-11	0.200	5.7 E-11
Pb-210	22.3 a	F	0.200	8.9 E-07	1.1 E-06	0.200	6.8 E-07
Pb-211	0.601 h	F	0.200	3.9 E-09	5.6 E-09	0.200	1.8 E-10
Pb-212	10.6 h	F	0.200	1.9 E-08	3.3 E-08	0.200	5.9 E-09
Pb-214	0.447 h	F	0.200	2.9 E-09	4.8 E-09	0.200	1.4 E-10

Bismut							
Bi-200	0.606 h	F	0.050	2.4 E-11	4.2 E-11	0.050	5.1 E-11
		M	0.050	3.4 E-11	5.6 E-11		
Bi-201	1.80 h	F	0.050	4.7 E-11	8.3 E-11	0.050	1.2 E-10
		M	0.050	7.0 E-11	1.1 E-10		
Bi-202	1.67 h	F	0.050	4.6 E-11	8.4 E-11	0.050	8.9 E-11
		M	0.050	5.8 E-11	1.0 E-10		
Bi-203	11.8 h	F	0.050	2.0 E-10	3.6 E-10	0.050	4.8 E-10
		M	0.050	2.8 E-10	4.5 E-10		
Bi-205	15.3 d	F	0.050	4.0 E-10	6.8 E-10	0.050	9.0 E-10
		M	0.050	9.2 E-10	1.0 E-09		
Bi-206	6.24 d	F	0.050	7.9 E-10	1.3 E-09	0.050	1.9 E-09

		M	0.050	1.7 E-09	2.1 E-09		
Bi-207	38.0 a	F	0.050	5.2 E-10	8.4 E-10	0.050	1.3 E-09
		M	0.050	5.2 E-09	3.2 E-09		
Bi-210	5.01 d	F	0.050	1.1 E-09	1.4 E-09	0.050	1.3 E-09
		M	0.050	8.4 E-08	6.0 E-08		
Bi-210m	3.00E+06 a	F	0.050	4.5 E-08	5.3 E-08	0.050	1.5 E-08
		M	0.050	3.1 E-06	2.1 E-06		
Bi-212	1.01 h	F	0.050	9.3 E-09	1.5 E-08	0.050	2.6 E-10
		M	0.050	3.0 E-08	3.9 E-08		
Bi-213	0.761 h	F	0.050	1.1 E-08	1.8 E-08	0.050	2.0 E-10
		M	0.050	2.9 E-08	4.1 E-08		
Bi-214	0.332 h	F	0.050	7.2 E-09	1.2 E-08	0.050	1.1 E-10
		M	0.050	1.4 E-08	2.1 E-08		
Poloniu							
Po-203	0.612 h	F	0.100	2.5 E-11	4.5 E-11	0.100	5.2 E-11
		M	0.100	3.6 E-11	6.1 E-11		
Po-205	1.80 h	F	0.100	3.5 E-11	6.0 E-11	0.100	5.9 E-11
		M	0.100	6.4 E-11	8.9 E-11		
Po-207	5.83 h	F	0.100	6.3 E-11	1.2 E-10	0.100	1.4 E-10
		M	0.100	8.4 E-11	1.5 E-10		
Po-210	138 d	F	0.100	6.0 E-07	7.1 E-07	0.100	2.4 E-07
		M	0.100	3.0 E-06	2.2 E-06		
Astatin							
At-207	1.80 h	F	1.000	3.5 E-10	4.4 E-10	1.000	2.3 E-10
		M	1.000	2.1 E-09	1.9 E-09		
At-211	7.21 h	F	1.000	1.6 E-08	2.7 E-08	1.000	1.1 E-08
		M	1.000	9.8 E-08	1.1 E-07		
Franciu							
Fr-222	0.240 h	F	1.000	1.4 E-08	2.1 E-08	1.000	7.1 E-10
Fr-223	0.363 h	F	1.000	9.1 E-10	1.3 E-09	1.000	2.3 E-09
Radiu							
Ra-223	11.4 d	M	0.200	6.9 E-06	5.7 E-06	0.200	1.0 E-07
Ra-224	3.66 d	M	0.200	2.9 E-06	2.4 E-06	0.200	6.5 E-08
Ra-225	14.8 d	M	0.200	5.8 E-06	4.8 E-06	0.200	9.5 E-08
Ra-226	1.60E+03 a	M	0.200	3.2 E-06	2.2 E-06	0.200	2.8 E-07
Ra-227	0.703 h	M	0.200	2.8 E-10	2.1 E-10	0.200	8.4 E-11
Ra-228	5.75 a	M	0.200	2.6 E-06	1.7 E-06	0.200	6.7 E-07
Actiniu							
Ac-224	2.90 h	F	5.0 E-04	1.1 E-08	1.3 E-08	5.0 E-04	7.0 E-10
		M	5.0 E-04	1.0 E-07	8.9 E-08		
		S	5.0 E-04	1.2 E-07	9.9 E-08		
Ac-225	10.0 d	F	5.0 E-04	8.7 E-07	1.0 E-06	5.0 E-04	2.4 E-08
		M	5.0 E-04	6.9 E-06	5.7 E-06		
		S	5.0 E-04	7.9 E-06	6.5 E-06		
Ac-226	1.21 d	F	5.0 E-04	9.5 E-08	2.2 E-07	5.0 E-04	1.0 E-08
		M	5.0 E-04	1.1 E-06	9.2 E-07		
		S	5.0 E-04	1.2 E-06	1.0 E-06		
Ac-227	21.8 a	F	5.0 E-04	5.4 E-04	6.3 E-04	5.0 E-04	1.1 E-06

		M	5.0 E-04	2.1 E-04	1.5 E-04		
		S	5.0 E-04	6.6 E-05	4.7 E-05		
Ac-228	6.13 h	F	5.0 E-04	2.5 E-08	2.9 E-08	5.0 E-04	4.3 E-10
		M	5.0 E-04	1.6 E-08	1.2 E-08		
		S	5.0 E-04	1.4 E-08	1.2 E-08		
Toriu							
Th-226	0.515 h	M	5.0 E-04	5.5 E-08	7.4 E-08	5.0 E-04	3.5 E-10
		S	2.0 E-04	5.9 E-08	7.8 E-08	2.0 E-04	3.6 E-10
Th-227	18.7 d	M	5.0 E-04	7.8 E-06	6.2 E-06	5.0 E-04	8.9 E-09
		S	2.0 E-04	9.6 E-06	7.6 E-06	2.0 E-04	8.4 E-09
Th-228	1.91 a	M	5.0 E-04	3.1 E-05	2.3 E-05	5.0 E-04	7.0 E-08
		S	2.0 E-04	3.9 E-05	3.2 E-05	2.0 E-04	3.5 E-08
Th-229	7.34E+03 a	M	5.0 E-04	9.9 E-05	6.9 E-05	5.0 E-04	4.8 E-07
		S	2.0 E-04	6.5 E-05	4.8 E-05	2.0 E-04	2.0 E-07
Th-230	7.70E+04 a	M	5.0 E-04	4.0 E-05	2.8 E-05	5.0 E-04	2.1 E-07
		S	2.0 E-04	1.3 E-05	7.2 E-06	2.0 E-04	8.7 E-08
Th-231	1.06 d	M	5.0 E-04	2.9 E-10	3.7 E-10	5.0 E-04	3.4 E-10
		S	2.0 E-04	3.2 E-10	4.0 E-10	2.0 E-04	3.4 E-10
Th-232	1.40E+10 a	M	5.0 E-04	4.2 E-05	2.9 E-05	5.0 E-04	2.2 E-07
		S	2.0 E-04	2.3 E-05	1.2 E-05	2.0 E-04	9.2 E-08
Th-234	24.1 d	M	5.0 E-04	6.3 E-09	5.3 E-09	5.0 E-04	3.4 E-09
		S	2.0 E-04	7.3 E-09	5.8 E-09	2.0 E-04	3.4 E-09
Protactiniu							
Pa-227	0.638 h	M	5.0 E-04	7.0 E-08	9.0 E-08	5.0 E-04	4.5 E-10
		S	5.0 E-04	7.6 E-08	9.7 E-08		
Pa-228	22.0 h	M	5.0 E-04	5.9 E-08	4.6 E-08	5.0 E-04	7.8 E-10
		S	5.0 E-04	6.9 E-08	5.1 E-08		
Pa-230	17.4 d	M	5.0 E-04	5.6 E-07	4.6 E-07	5.0 E-04	9.2 E-10
		S	5.0 E-04	7.1 E-07	5.7 E-07		
Pa-231	3.27E+04 a	M	5.0 E-04	1.3 E-04	8.9 E-05	5.0 E-04	7.1 E-07
		S	5.0 E-04	3.2 E-05	1.7 E-05		
Pa-232	1.31 d	M	5.0 E-04	9.5 E-09	6.8 E-09	5.0 E-04	7.2 E-10
		S	5.0 E-04	3.2 E-09	2.0 E-09		
Pa-233	27.0 d	M	5.0 E-04	3.1 E-09	2.8 E-09	5.0 E-04	8.7 E-10
		S	5.0 E-04	3.7 E-09	3.2 E-09		
Pa-234	6.70 h	M	5.0 E-04	3.8 E-10	5.5 E-10	5.0 E-04	5.1 E-10
		S	5.0 E-04	4.0 E-10	5.8 E-10		
Uranu							
U-230	20.8 d	F	0.020	3.6 E-07	4.2 E-07	0.020	5.5 E-08
		M	0.020	1.2 E-05	1.0 E-05	0.002	2.8 E-08
		S	0.002	1.5 E-05	1.2 E-05		
U-231	4.20 d	F	0.020	8.3 E-11	1.4 E-10	0.020	2.8 E-10
		M	0.020	3.4 E-10	3.7 E-10	0.002	2.8 E-10
		S	0.002	3.7 E-10	4.0 E-10		
U-232	72.0 a	F	0.020	4.0 E-06	4.7 E-06	0.020	3.3 E-07
		M	0.020	7.2 E-06	4.8 E-06	0.002	3.7 E-08
		S	0.002	3.5 E-05	2.6 E-05		
U-233	1.58E+05 a	F	0.020	5.7 E-07	6.6 E-07	0.020	5.0 E-08
		M	0.020	3.2 E-06	2.2 E-06	0.002	8.5 E-09
		S	0.002	8.7 E-06	6.9 E-06		

U-234	2.44E+05 a	F	0.020	5.5 E-07	6.4 E-07	0.020	4.9 E-08
		M	0.020	3.1 E-06	2.1 E-06	0.002	8.3 E-09
		S	0.002	8.5 E-06	6.8 E-06		
U-235	7.04E+08 a	F	0.020	5.1 E-07	6.0 E-07	0.020	4.6 E-08
		M	0.020	2.8 E-06	1.8 E-06	0.002	8.3 E-09
		S	0.002	7.7 E-06	6.1 E-06		
U-236	2.34E+07 a	F	0.020	5.2 E-07	6.1 E-07	0.020	4.6 E-08
		M	0.020	2.9 E-06	1.9 E-06	0.002	7.9 E-09
		S	0.002	7.9 E-06	6.3 E-06		
U-237	6.75 d	F	0.020	1.9 E-10	3.3 E-10	0.020	7.6 E-10
		M	0.020	1.6 E-09	1.5 E-09	0.002	7.7 E-10
		S	0.002	1.8 E-09	1.7 E-09		
U-238	4.47E+09 a	F	0.020	4.9 E-07	5.8 E-07	0.020	4.4 E-08
		M	0.020	2.6 E-06	1.6 E-06	0.002	7.6 E-09
		S	0.002	7.3 E-06	5.7 E-06		
U-239	0.392 h	F	0.020	1.1 E-11	1.8 E-11	0.020	2.7 E-11
		M	0.020	2.3 E-11	3.3 E-11	0.002	2.8 E-11
		S	0.002	2.4 E-11	3.5 E-11		
U-240	14.1 h	F	0.020	2.1 E-10	3.7 E-10	0.020	1.1 E-09
		M	0.020	5.3 E-10	7.9 E-10	0.002	1.1 E-09
		S	0.002	5.7 E-10	8.4 E-10		
Neptuniu							
Np-232	0.245 h	M	5.0 E-04	4.7 E-11	3.5 E-11	5.0 E-04	9.7 E-12
Np-233	0.603 h	M	5.0 E-04	1.7 E-12	3.0E-12	5.0 E-04	2.2 E-12
Np-234	4.40 d	M	5.0 E-04	5.4 E-10	7.3 E-10	5.0 E-04	8.1 E-10
Np-235	1.08 a	M	5.0 E-04	4.0 E-10	2.7 E-10	5.0 E-04	5.3 E-11
Np-236	1.15E+05 a	M	5.0 E-04	3.0 E-06	2.0 E-06	5.0 E-04	1.7 E-08
Np-236	22.5 h	M	5.0 E-04	5.0 E-09	3.6 E-09	5.0 E-04	1.9 E-10
Np-237	2.14E+06 a	M	5.0 E-04	2.1 E-05	1.5 E-05	5.0 E-04	1.1 E-07
Np-238	2.12 d	M	5.0 E-04	2.0 E-09	1.7 E-09	5.0 E-04	9.1 E-10
Np-239	2.36 d	M	5.0 E-04	9.0 E-10	1.1 E-09	5.0 E-04	8.0 E-10
Np-240	1.08 h	M	5.0 E-04	8.7 E-11	1.3 E-10	5.0 E-04	8.2 E-11
Plutoniu							
Pu-234	8.80 h	M	5.0 E-04	1.9 E-08	1.6 E-08	5.0 E-04	1.6 E-10
		S	1.0 E-05	2.2 E-08	1.8 E-08	1.0 E-05	1.5 E-10
					1.0 E-04	1.6 E-10	
Pu-235	0.422 h	M	5.0 E-04	1.5 E-12	2.5 E-12	5.0 E-04	2.1 E-12
		S	1.0 E-05	1.6 E-12	2.6 E-12	1.0 E-05	2.1 E-12
						1.0 E-04	2.1 E-12
Pu-236	2.85 a	M	5.0 E-04	1.8 E-05	1.3 E-05	5.0 E-04	8.6 E-08
		S	1.0 E-05	9.6 E-06	7.4 E-06	1.0 E-05	6.3 E-09
						1.0 E-04	2.1 E-08
Pu-237	45.3 d	M	5.0 E-04	3.3 E-10	2.9 E-10	5.0 E-04	1.0 E-10
		S	1.0 E-05	3.6 E-10	3.0 E-10	1.0 E-05	1.0 E-10
						1.0 E-04	1.0 E-10
Pu-238	87.7 a	M	5.0 E-04	4.3 E-05	3.0 E-05	5.0 E-04	2.3 E-07
		S	1.0 E-05	1.5 E-05	1.1 E-05	1.0 E-05	8.8 E-09
						1.0 E-04	4.9 E-08
Pu-239	2.41E+04 a	M	5.0 E-04	4.7 E-05	3.2 E-05	5.0 E-04	2.5 E-07
		S	1.0 E-05	1.5 E-05	8.3 E-06	1.0 E-05	9.0 E-09
						1.0 E-04	5.3 E-08

Pu-240	6.54E+03 a	M	5.0 E-04	4.7 E-05	3.2 E-05	5.0 E-04	2.5 E-07
		S	1.0 E-05	1.5 E-05	8.3 E-06	1.0 E-05	9.0 E-09
						1.0 E-04	5.3 E-08
Pu-241	14.4 a	M	5.0 E-04	8.5 E-07	5.8 E-07	5.0 E-04	4.7 E-09
		S	1.0 E-05	1.6 E-07	8.4 E-08	1.0 E-05	1.1 E-10
						1.0 E-04	9.6 E-10
Pu-242	3.76E+05 a	M	5.0 E-04	4.4 E-05	3.1 E-05	5.0 E-04	2.4 E-07
		S	1.0 E-05	1.4 E-05	7.7 E-06	1.0 E-05	8.6 E-09
						1.0 E-04	5.0 E-08
Pu-243	4.95 h	M	5.0 E-04	8.2 E-11	1.1 E-10	5.0 E-04	8.5 E-11
		S	1.0 E-05	8.5 E-11	1.1 E-10	1.0 E-05	8.5 E-11
						1.0 E-04	8.5 E-11
Pu-244	8.26E+07 a	M	5.0 E-04	4.4 E-05	3.0 E-05	5.0 E-04	2.4 E-07
		S	1.0 E-05	1.3 E-05	7.4 E-06	1.0 E-05	1.1 E-08
						1.0 E-04	5.2 E-08
Pu-245	10.5 h	M	5.0 E-04	4.5 E-10	6.1 E-10	5.0 E-04	7.2 E-10
		S	1.0 E-05	4.8 E-10	6.5 E-10	1.0 E-05	7.2 E-10
						1.0 E-04	7.2 E-10
Pu-246	10.9 d	M	5.0 E-04	7.0 E-09	6.5 E-09	5.0 E-04	3.3 E-09
		S	1.0 E-05	7.6 E-09	7.0 E-09	1.0 E-05	3.3 E-09
						1.0 E-04	3.3 E-09
Americiu							
Am-237	1.22 h	M	5.0 E-04	2.5 E-11	3.6 E-11	5.0 E-04	1.8 E-11
Am-238	1.63 h	M	5.0 E-04	8.5 E-11	6.6 E-11	5.0 E-04	3.2 E-11
Am-239	11.9 h	M	5.0 E-04	2.2 E-10	2.9 E-10	5.0 E-04	2.4 E-10
Am-240	2.12 d	M	5.0 E-04	4.4 E-10	5.9 E-10	5.0 E-04	5.8 E-10
Am-241	4.32E+02 a	M	5.0 E-04	3.9 E-05	2.7 E-05	5.0 E-04	2.0 E-07
Am-242	16.0 h	M	5.0 E-04	1.6 E-08	1.2 E-08	5.0 E-04	3.0 E-10
Am-242m	1.52E+02 a	M	5.0 E-04	3.5 E-05	2.4 E-05	5.0 E-04	1.9 E-07
Am-243	7.38E+03 a	M	5.0 E-04	3.9 E-05	2.7 E-05	5.0 E-04	2.0 E-07
Am-244	10.1 h	M	5.0 E-04	1.9 E-09	1.5 E-09	5.0 E-04	4.6 E-10
Am-244m	0.433 h	M	5.0 E-04	7.9 E-11	6.2 E-11	5.0 E-04	2.9 E-11
Am-245	2.05 h	M	5.0 E-04	5.3 E-11	7.6 E-11	5.0 E-04	6.2 E-11
Am-246	0.650 h	M	5.0 E-04	6.8 E-11	1.1 E-10	5.0 E-04	5.8 E-11
Am-246m	0.417 h	M	5.0 E-04	2.3 E-11	3.8 E-11	5.0 E-04	3.4 E-11
Curiu							
Cm-238	2.40 h	M	5.0 E-04	4.1 E-09	4.8 E-09	5.0 E-04	8.0 E-11
Cm-240	27.0 d	M	5.0 E-04	2.9 E-06	2.3 E-06	5.0 E-04	7.6 E-09
Cm-241	32.8 d	M	5.0 E-04	3.4 E-08	2.6 E-08	5.0 E-04	9.1 E-10
Cm-242	163 d	M	5.0 E-04	4.8 E-06	3.7 E-06	5.0 E-04	1.2 E-08
Cm-243	28.5 a	M	5.0 E-04	2.9 E-05	2.0 E-05	5.0 E-04	1.5 E-07
Cm-244	18.1 a	M	5.0 E-04	2.5 E-05	1.7 E-05	5.0 E-04	1.2 E-07
Cm-245	8.50E+03 a	M	5.0 E-04	4.0 E-05	2.7 E-05	5.0 E-04	2.1 E-07
Cm-246	4.73E+03 a	M	5.0 E-04	4.0 E-05	2.7 E-05	5.0 E-04	2.1 E-07
Cm-247	1.56E+07 a	M	5.0 E-04	3.6 E-05	2.5 E-05	5.0 E-04	1.9 E-07
Cm-248	3.39E+05 a	M	5.0 E-04	1.4 E-04	9.5 E-05	5.0 E-04	7.7 E-07
Cm-249	1.07 h	M	5.0 E-04	3.2 E-11	5.1 E-11	5.0 E-04	3.1 E-11
Cm-250	6.90E+03 a	M	5.0 E-04	7.9 E-04	5.4 E-04	5.0 E-04	4.4 E-06
Berkeliu							
Bk-245	4.94 d	M	5.0 E-04	2.0 E-09	1.8 E-09	5.0 E-04	5.7 E-10

Bk-246	1.83 d	M	5.0 E-04	3.4 E-10	4.6 E-10	5.0 E-04	4.8 E-10
Bk-247	1.38E+03 a	M	5.0 E-04	6.5 E-05	4.5 E-05	5.0 E-04	3.5 E-07
Bk-249	320 d	M	5.0 E-04	1.5 E-07	1.0 E-07	5.0 E-04	9.7 E-10
Bk-250	3.22 h	M	5.0 E-04	9.6 E-10	7.1 E-10	5.0 E-04	1.4 E-10
Californiu							
Cf-244	0.323 h	M	5.0 E-04	1.3 E-08	1.8 E-08	5.0 E-04	7.0 E-11
Cf-246	1.49 d	M	5.0 E-04	4.2 E-07	3.5 E-07	5.0 E-04	3.3 E-09
Cf-248	334 d	M	5.0 E-04	8.2 E-06	6.1 E-06	5.0 E-04	2.8 E-08
Cf-249	3.50E+02 a	M	5.0 E-04	6.6 E-05	4.5 E-05	5.0 E-04	3.5 E-07
Cf-250	13.1 a	M	5.0 E-04	3.2 E-05	2.2 E-05	5.0 E-04	1.6 E-07
Cf-251	8.98E+02 a	M	5.0 E-04	6.7 E-05	4.6 E-05	5.0 E-04	3.6 E-07
Cf-252	2.64 a	M	5.0 E-04	1.8 E-05	1.3 E-05	5.0 E-04	9.0 E-08
Cf-253	17.8 d	M	5.0 E-04	1.2 E-06	1.0 E-06	5.0 E-04	1.4 E-09
Cf-254	60.5 d	M	5.0 E-04	3.7 E-05	2.2 E-05	5.0 E-04	4.0 E-07
Einsteiniu							
Es-250	2.10 h	M	5.0 E-04	5.9 E-10	4.2 E-10	5.0 E-04	2.1 E-11
Es-251	1.38 d	M	5.0 E-04	2.0 E-09	1.7 E-09	5.0 E-04	1.7 E-10
Es-253	20.5 d	M	5.0 E-04	2.5 E-06	2.1 E-06	5.0 E-04	6.1 E-09
Es-254	276 d	M	5.0 E-04	8.0 E-06	6.0 E-06	5.0 E-04	2.8 E-08
Es-254m	1.64 d	M	5.0 E-04	4.4 E-07	3.7 E-07	5.0 E-04	4.2 E-09
Fermiu							
Fm-252	22.7 h	M	5.0 E-04	3.0 E-07	2.6 E-07	5.0 E-04	2.7 E-09
Fm-253	3.00 d	M	5.0 E-04	3.7 E-07	3.0 E-07	5.0 E-04	9.1 E-10
Fm-254	3.24 h	M	5.0 E-04	5.6 E-08	7.7 E-08	5.0 E-04	4.4 E-10
Fm-255	20.1 h	M	5.0 E-04	2.5 E-07	2.6 E-07	5.0 E-04	2.5 E-09
Fm-257	101 d	M	5.0 E-04	6.6 E-06	5.2 E-06	5.0 E-04	1.5 E-08
Mendeleviu							
Md-257	5.20 h	M	5.0 E-04	2.3 E-08	2.0 E-08	5.0 E-04	1.2 E-10
Md-258	55.0 d	M	5.0 E-04	5.5 E-06	4.4 E-06	5.0 E-04	1.3 E-08

NOTĂ:

(1). Coloana "Tip" conține caracterizarea vitezei de absorbție din plămâni, literele F, M și S au respectiv semnificația de viteză de absorbție rapidă, moderată și lentă.

TABELUL 4-C2

Coeficienții de doză efectivă pentru gazele solubile sau chimic active

Nucleu/ Forma chimică	$t_{1/2}$	$h(g)$ (Sv Bq ⁻¹)
Tritiu gaz	12,3a	1,8 E-15
Apă tritiată	12,3a	1,8 E-11
Tritiu legat organic	12,3a	4,1 E-11
Carbon – 11 vapori	0,34h	3,2 E-12
Carbon – 11 dioxid	0,34h	2,2 E-12
Carbon – 11 monoxid	0,34h	1,2 E-12
Carbon – 14 vapori	5,73E+3a	5,8 E-10
Carbon – 14 dioxid	5,73E+3a	6,5 E-12
Carbon – 14 monoxid	5,73E+3a	8,0 E-13
Sulf – 35 vapori	87,4d	1,2 E-10
Nichel – 56 carbură	6,10d	1,2 E-9
Nichel – 57 carbură	1,50d	5,6 E-10
Nichel – 59 carbură	7,50 E+4d	8,3 E-10
Nichel – 63 carbură	96,0a	2,0 E-9
Nichel – 65 carbură	2,52h	3,6 E-10
Nichel – 66 carbură	2,27d	1,6 E-9
Iod – 120 vapori	1,35h	3,0 E-10
Iod – 120m vapori	0,88h	1,8 E-10
Iod – 121 vapori	2,12h	8,6 E-11
Iod – 123 vapori	13,2h	2,1 E-10
Iod – 124 vapori	4,18d	1,2 E-8
Iod – 125 vapori	60,1d	1,4 E-8
Iod – 126 vapori	13,0d	2,6 E-8
Iod – 128 vapori	0,42h	6,5 E-11
Iod – 129 vapori	1,57 E+7a	9,6 E-8
Iod – 130 vapori	12,4h	1,9 E-9
Iod – 131 vapori	8,04d	2,0 E-8
Iod – 132 vapori	2,30h	3,1 E-10
Iod – 132m vapori	1,39h	2,7 E-10
Iod – 133 vapori	20,8h	4,0 E-9
Iod – 134 vapori	0,88h	1,5 E-10
Iod – 135 vapori	6,61h	9,2 E-10
Mercur – 193 vapori	3,50h	1,1 E-9
Mercur – 193m vapori	11,1h	3,1 E-9
Mercur – 194 vapori	2,60E+2a	4,0 E-8
Mercur – 195 vapori	9,90h	1,4 E-9
Mercur – 195m vapori	1,73d	8,2 E-9
Mercur – 197 vapori	2,67d	4,4 E-9
Mercur – 197m vapori	2,38h	5,8 E-9
Mercur – 199m vapori	0,71h	1,8 E-10
Mercur – 203 vapori	46,60d	7,0 E-9

TABELUL 4-D

Compuși și valorile pentru factorii f_1 care au fost utilizate în calculul coeficienților de doză pentru ingestie

Element	f_1	Compuși
Hidrogen	1.000	Apă tritiată (ingestie)
	1.000	Tritiu legat organic
Carbon	1.000	Compuși organici marcați
Fluor	1.000	Toți compușii
Sodiu	1.000	Toți compușii
Magneziu	0.500	Toți compușii
Aluminiu	0.010	Toți compușii
Siliciu	0.010	Toți compușii
Fosfor	0.800	Toți compușii
Sulf	0.800	Compușii anorganici Sulf elemental Sulf organic
	0.100	
	1.000	
Clor	1.000	Toți compușii
Potasiu	1.000	Toți compușii
Calciu	0.300	Toți compușii
Scandiu	1.0 E-04	Toți compușii
Titan	0.010	Toți compușii
Vanadiu	0.010	Toți compușii
Crom	0.100	Compușii hexavalenți Compușii trivalenți
	0.010	
Mangan	0.100	Toți compușii
Fier	0.100	Toți compușii
Cobalt	0.100	Toți compușii nespecificați Oxizii, hidroxizii și compușii anorganici
	0.050	
Nichel	0.050	Toți compușii
Cupru	0.500	Toți compușii
Zinc	0.500	Toți compușii
Galiu	0.001	Toți compușii
Germaniu	1.000	Toți compușii
Arsenic	0.500	Toți compușii
Seleniu	0.800	Toți compușii nespecificați Seleniu elemental și selenuri
	0.050	
Brom	1.000	Toți compușii
Rubidiu	1.000	Toți compușii
Stronțiu	0.300	Toți compușii nespecificați Titanat de stronțiu (SrTiO ₃)
	0.010	
Ytriu	1.0 E-04	Toți compușii
Zirconiu	0.002	Toți compușii
Niobiu	0.010	Toți compușii

Molibden	0.800 0.050	Toți compușii nespecificați Sulfură de molibden
Tehnețiu	0.800	Toți compușii
Ruteniu	0.050	Toți compușii
Rodiu	0.050	Toți compușii
Paladiu	0.005	Toți compușii
Argint	0.050	Toți compușii
Cadmium	0.050	Toți compușii anorganici
Indiu	0.020	Toți compușii
Staniu	0.020	Toți compușii
Stibiu	0.100	Toți compușii
Telur	0.300	Toți compușii
Iod	1.000	Toți compușii
Cesiu	1.000	Toți compușii
Bariu	0.100	Toți compușii
Lantan	5.0 E-04	Toți compușii
Ceriu	5.0 E-04	Toți compușii
Praseodim	5.0 E-04	Toți compușii
Neodim	5.0 E-04	Toți compușii
Promețiu	5.0 E-04	Toți compușii
Samariu	5.0 E-04	Toți compușii
Europiu	5.0 E-04	Toți compușii
Gadoliniu	5.0 E-04	Toți compușii
Terbiu	5.0 E-04	Toți compușii
Disprosiu	5.0 E-04	Toți compușii
Holmiu	5.0 E-04	Toți compușii
Erbiu	5.0 E-04	Toți compușii
Tuliu	5.0 E-04	Toți compușii
Yterbiu	5.0 E-04	Toți compușii
Lutețiu	5.0 E-04	Toți compușii
Hafniu	0.002	Toți compușii
Tantal	0.001	Toți compușii
Wolfram	0.300 0.010	Toți compușii nespecificați Acidul tungstic
Reniu	0.800	Toți compușii
Osmiu	0.010	Toți compușii
Iridiu	0.010	Toți compușii
Platină	0.010	Toți compușii
Aur	0.100	Toți compușii
Mercur	0.020	Toți compușii anorganici
Mercur	1.000 0.400	Metil mercur Toți compușii organici nespecificați
Taliu	1.000	Toți compușii

Plumb	0.200	Toți compușii
Bismut	0.050	Toți compușii
Poloniu	0.100	Toți compușii
Astatiu	1.000	Toți compușii
Franciu	1.000	Toți compușii
Radiu	0.200	Toți compușii
Actiniu	5.0 E-04	Toți compușii
Toriu	5.0 E-04 2.0 E-04	Toți compușii nespecificați Oxizi și hidroxizi
Protactiniu	5.0 E-04	Toți compușii

Uraniu	0.020 0.002	Toți compușii nespecificați Cei mai mulți compuși tetravalenți, ca de ex.: UO ₂ , U ₃ O ₈ , UF ₄
Neptuniu	5.0 E-04	Toți compușii
Plutoniu	5.0 E-04 1.0 E-04 1.0 E-05	Toți compușii nespecificați Nitrați Oxizi insolubili
Americiu	5.0 E-04	Toți compușii
Curiu	5.0 E-04	Toți compușii
Berkeliu	5.0 E-04	Toți compușii
Californiu	5.0 E-04	Toți compușii
Einsteiniu	5.0 E-04	Toți compușii
Fermiu	5.0 E-04	Toți compușii
Mendeleviu	5.0 E-04	Toți compușii

TABELUL 4-E

Compușii, tipurile de absorbție pulmonară și valorile pentru factorii f_1 care au fost utilizate în calculul coeficienților de doză pentru inhalare

Element	Tip	f_1	Compuși
Beriliu	M	0.005	Toți compușii nespecificați
	S	0.005	Oxizi, halogenuri și nitrați
Fluor	F	1.000	Determinat prin combinarea cationilor
	M	1.000	Determinat prin combinarea cationilor
	S	1.000	Determinat prin combinarea cationilor
Sodiu	F	1.000	Toți compușii
Magneziu	F	0.500	Toți compușii nespecificați
	M	0.500	Oxizi, hidroxizi, carburi, halogenuri și nitrați
Aluminiu	F	0.010	Toți compușii nespecificați
	M	0.010	Oxizi, hidroxizi, carburi, halogenuri, nitrați și aluminiu metalic
Siliciu	F	0.010	Toți compușii nespecificați
	M	0.010	Oxizi, hidroxizi, carburi, halogenuri și nitrați
	S	0.010	Aerosoli de sticlă cu aluminosilicați
Fosfor	F	0.800	Toți compușii nespecificați
	M	0.800	Câțiva fosfați: determinați prin combinarea cationilor
Sulf	F	0.800	Sulfuri și sulfați: determinate prin combinarea cationilor
	M	0.800	Sulf elemental. Sulfuri și sulfați: determinate prin combinarea cationilor
Clor	F	1.000	Determinat prin combinarea cationilor
	M	1.000	Determinat prin combinarea cationilor
Potasiu	F	1.000	Toți compușii
Calciu	M	0.300	Toți compușii
Scandiu	S	1.0 E-04	Toți compușii
Titan	F	0.010	Toți compușii nespecificați
	M	0.010	Oxizi, hidroxizi, carburi, halogenuri și nitrați
	S	0.010	Titanat de stronțiu (SrTiO_3)
Vanadiu	F	0.010	Toți compușii nespecificați
	M	0.010	Oxizi, hidroxizi, carburi și halogenuri
Crom	F	0.100	Toți compușii nespecificați
	M	0.100	Halogenuri și nitrați
	S	0.100	Oxizi și hidroxizi
Mangan	F	0.100	Toți compușii nespecificați
	M	0.100	Oxizi, hidroxizi, carburi, halogenuri și nitrați
Fier	F	0.100	Toți compușii nespecificați
	M	0.100	Oxizi, hidroxizi și halogenuri
Cobalt	M	0.100	Toți compușii nespecificați
	S	0.050	Oxizi, hidroxizi, halogenuri și nitrați
Nichel	F	0.050	Toți compușii nespecificați
	M	0.050	Oxizi, hidroxizi și carburi

Cupru	F	0.500	Toți compușii anorganici nespecificați
	M	0.500	Sulfuri, halogenuri și nitrați
	S	0.500	Oxizi și hidroxizi
Zinc	S	0.500	Toți compușii
Galiu	F	0.001	Toți compușii nespecificați
	M	0.001	Oxizi, hidroxizi, carburi, halogenuri și nitrați
Germaniu	F	1.000	Toți compușii nespecificați
	M	1.000	Oxizi, sulfuri și halogenuri
Arsenic	M	0.500	Toți compușii
Seleniu	F	0.800	Toți compușii anorganici nespecificați
	M	0.800	Seleniu elemental, oxizi, hidroxizi și carburi
Brom	F	1.000	Determinat prin combinarea cationilor
	M	1.000	Determinat prin combinarea cationilor
Rubidiu	F	1.000	Toți compușii
Stronțiu	F	0.300	Toți compușii nespecificați
	S	0.010	Titanat de stronțiu (SrTiO ₃)
Ytriu	M	1.0 E-04	Toți compușii nespecificați
	S	1.0 E-04	Oxizi și hidroxizi
Zirconiu	F	0.002	Toți compușii nespecificați
	M	0.002	Oxizi, hidroxizi, carburi, halogenuri și nitrați
	S	0.002	Carbură de zirconiu
Niobiu	M	0.010	Toți compușii nespecificați
	S	0.010	Oxizi și hidroxizi
Molibden	F	0.800	Toți compușii nespecificați
	S	0.050	Sulfură de molibden, oxizi și hidroxizi
Tehnețiu	F	0.800	Toți compușii nespecificați
	M	0.800	Oxizi, hidroxizi, halogenuri și nitrați
Ruteniu	F	0.050	Toți compușii nespecificați
	M	0.050	Halogenuri
	S	0.050	Oxizi și hidroxizi
Rodiu	F	0.050	Toți compușii nespecificați
	M	0.050	Halogenuri
	S	0.050	Oxizi și hidroxizi
Paladiu	F	0.005	Toți compușii nespecificați
	M	0.005	Nitrați și halogenuri
	S	0.005	Oxizi și hidroxizi
Argint	F	0.050	Toți compușii nespecificați și argintul metalic
	M	0.050	Nitrați și sulfuri
	S	0.050	Oxizi, hidroxizi și carburi
Cadmiu	F	0.050	Toți compușii nespecificați
	M	0.050	Sulfuri, halogenuri și nitrați
	S	0.050	Oxizi și hidroxizi
Indiu	F	0.020	Toți compușii nespecificați
	M	0.020	Oxizi, hidroxizi, halogenuri și nitrați
Staniu	F	0.020	Toți compușii nespecificați
	M	0.020	Fosfat de staniu, sulfuri, oxizi, hidroxizi, halogenuri și nitrați
Stibiu	F	0.100	Toți compușii nespecificați
	M	0.010	Oxizi, hidroxizi, halogenuri, nitrați, sulfuri și sulfați

Telur	F	0.300	Toți compușii nespecificați Oxizi, hidroxizi și nitrați
	M	0.300	
Iod	F	1.000	Toți compușii
Cesiu	F	1.000	Toți compușii
Bariu	F	0.100	Toți compușii
Lantan	F	5.0 E-04	Toți compușii nespecificați Oxizi și hidroxizi
	M	5.0 E-04	
Ceriu	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi și fluoruri
	S	5.0 E-04	
Praseodim	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi, carburi și fluoruri
	S	5.0 E-04	
Neodim	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi, carburi și fluoruri
	S	5.0 E-04	
Promețiu	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi, carburi și fluoruri
	S	5.0 E-04	
Samariu	M	5.0 E-04	Toți compușii
Europiu	M	5.0 E-04	Toți compușii
Gadolinu	F	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi și fluoruri
	M	5.0 E-04	
Terbiu	M	5.0 E-04	Toți compușii
Disprosiu	M	5.0 E-04	Toți compușii
Holmiu	M	5.0 E-04	Toți compușii nespecificați
Erbiu	M	5.0 E-04	Toți compușii
Tuliu	M	5.0 E-04	Toți compușii
Yterbiu	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi și fluoruri
	S	5.0 E-04	
Lutețiu	M	5.0 E-04	Toți compușii nespecificați Oxizi, hidroxizi și fluoruri
	S	5.0 E-04	
Hafniu	F	0.002	Toți compușii nespecificați Oxizi, hidroxizi, carburi, halogenuri și nitrați
	M	0.002	
Tantal	M	0.001	Toți compușii nespecificați Tantal elemental, oxizi, hidroxizi, halogenuri, nitrați și nitriți
	S	0.001	
Wolfram	F	0.300	Toți compușii
Reniu	F	0.800	Toți compușii nespecificați Oxizi, hidroxizi, halogenuri și nitrați
	M	0.800	
Osmiu	F	0.010	Toți compușii nespecificați Halogenuri și nitrați Oxizi și hidroxizi
	M	0.010	
	S	0.010	
Iridiu	F	0.010	Toți compușii nespecificați Iridiu metalic, halogenuri și nitrați Oxizi și hidroxizi
	M	0.010	
	S	0.010	
Platină	F	0.010	Toți compușii
Aur	F	0.100	Toți compușii nespecificați Halogenuri și nitrați Oxizi și hidroxizi
	M	0.100	
	S	0.100	
Mercur	F	0.020	Sulfați Oxizi, hidroxizi, halogenuri, sulfuri și nitrați
	M	0.020	

Mercur	F	0.400	Toți compușii organici
Taliu	F	1.000	Toți compușii
Plumb	F	0.200	Toți compușii
Bismut	F	0.050	Nitrat de bismut
	M	0.050	Toți compușii nespecificați
Poloniu	F	0.100	Toți compușii nespecificați
	M	0.100	Oxizi, hidroxizi și nitrați
Astatin	F	1.000	Determinat prin combinarea cationilor
	M	1.000	Determinat prin combinarea cationilor
Franciu	F	1.000	Toți compușii
Radiu	M	0.200	Toți compușii
Actiniu	F	5.0 E-04	Toți compușii nespecificați
	M	5.0 E-04	Halogenuri și nitrați
	S	5.0 E-04	Oxizi și hidroxizi
Toriu	M	5.0 E-04	Toți compușii nespecificați
	S	2.0 E-04	Oxizi și hidroxizi
Protactiniu	M	5.0 E-04	Toți compușii nespecificați
	S	5.0 E-04	Oxizi și hidroxizi
Uraniu	F	0.020	Cei mai mulți compuși hexavalenți, ca de ex.: UF ₆ , UO ₂ F ₂ și UO ₂ (NO ₃) ₂
	M	0.020	Compușii mai puțin solubili, ca de ex.: UO ₃ , UF ₄ , UCl ₄ și cei mai mulți dintre ceilalți compuși hexavalenți
	S	0.002	Compușii cei mai insolubili, ca de ex.: UO ₂ și U ₃ O ₈
Neptuniu	M	5.0 E-04	Toți compușii
Plutoniu	M	5.0 E-04	Toți compușii nespecificați
	S	1.0 E-05	Oxizii insolubili
Americiu	M	5.0 E-04	Toți compușii
Curiu	M	5.0 E-04	Toți compușii
Berkeliu	M	5.0 E-04	Toți compușii
Californiu	M	5.0 E-04	Toți compușii
Einsteinium	M	5.0 E-04	Toți compușii
Fermiu	M	5.0 E-04	Toți compușii
Mendeleviu	M	5.0 E-04	Toți compușii

Notă:

(1). Coloana "Tip" conține caracterizarea vitezei de absorbție din plămâni, literele F, M și S au respectiv semnificația de viteză de absorbție rapidă, moderată și lentă.

ANEXA 5

Simbolul pericol de radiatii

