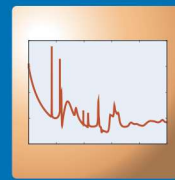


**IAEA**

International Atomic Energy Agency

# Nuclear Data Newsletter



<https://nds.iaea.org/>

ISSN 0257-6376

No. 79, August 2025

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## From the Section Head

Greetings from Vienna.

For many of us, one of the highlights of 2025 was the International Nuclear Data Conference (ND-2025) held in Madrid, Spain. The IAEA was proud to collaborate once again with the ND conference and was well represented, including a keynote presentation by our Director, Tzanka Kokalova Wheldon during the opening plenary session. A heartfelt thank you goes to Daniel Cano-Ott and the entire organizing committee for delivering an excellent event. The conference covered a wide range of topics that underscore the importance and excitement of nuclear data in science and technology.

To make the most of the occasion, the IAEA also organized the Nuclear Reaction Data Centre Network meeting (focused on EXFOR) in the following week, also in Madrid. We're grateful to Oscar Cabellos and colleagues at Universidad Politécnica de Madrid (UPM) for their support.

We held a Consultancy Meeting to discuss the future direction of the Fusion Evaluated Nuclear Data Library (FENDL) and are actively engaging with stakeholders—especially ITER—to ensure adoption of the latest version.

Another major event was the Workshop on Neutron Beams at High Energy: Applications and Metrology, co-organized with the Consultative Committee for Ionizing Radiation (CCRI). With 119 participants, it was a great opportunity to renew our focus on neutron data above 20 MeV.

In March, we launched a new Coordinated Research Project (CRP) on nuclear level densities, which promises to enhance the predictive capabilities of nuclear reaction models through new level density prescriptions.

We also hosted the Technical Meeting on Nuclear Data Needs for Antineutrino Spectra Applications at Seoul National University—many thanks to Jonghee Yoo for his support.

On a personal note, we bid farewell to our colleague Marco Verpelli, who retired from the IAEA. Marco's contributions include widely used tools such as the Isotope Browser, Livechart, Medical Isotope Browser, and TALYSworld. We are committed to continuing development of these tools with new team members.

Finally, don't forget to explore our growing collection of nuclear data software and databases at [github.com/IAEA-NDS](https://github.com/IAEA-NDS)—now featuring 41 repositories.

In our next newsletter, we look forward to introducing our new website.



*Arjan Koning, Section Head, Nuclear Data Section*

# Computer Codes, Data Libraries and Web News

Our git repository at <https://github.com/IAEA-NDS> contains several new and updated tools and databases ready for direct use.

Important cases to be mentioned are:

- Neutron standards database and related tools and evaluations
- Various EXFOR related tools such as parsers and derived databases
- Endf-parserpy: an ENDF parsing tool
- FENDL
- Processing tools like ACEMAKER,

and several other tools.

## NDS Meeting Reports

(TM = Technical Meeting, RCM = Research Coordination Meeting, CM = Consultants' Meeting, WS = Workshop, CRP = Coordinated Research Project)

### Technical Meeting on Neutron-induced Reactions on Short-lived Nuclei

25-29 August 2025, Vienna, Austria

Scientific Secretary: P. Dimitriou

31 participants and IAEA staff



This technical meeting focused on neutron-induced reactions on short-lived nuclei ( $t_{1/2} < 100$  d) that presently cannot be measured directly via activation or TOF in normal kinematics. This includes neutron cross sections

measurements and modelling of (n,gamma), (n,p), (n,alpha), (n,xn) reactions at energy ranges relevant to nuclear astrophysics and nuclear energy (reactors) applications.

As new types of facilities (storage rings connected to RIB facilities) are proposed, reliable estimates of cross sections for neutron-rich nuclei are needed to demonstrate the experimental potential of this technique with various neutron target densities. Therefore, it was time to bring together experts from the two communities, nuclear astrophysics and nuclear energy, to address cross-cutting needs for measurements; review and assess existing measurement techniques and their advantages and limitations; review state-of-the-art modelling and calculation methods; discuss sensitivity studies using various codes and different parameter inputs, and identify key nuclei that can serve as benchmarks.

Details of the meeting can be found at:

<https://conferences.iaea.org/event/424/overview>.

The summary report is in preparation and will be published as INDC(NDS)-0926.

### Technical Meeting of the Global Network for the Atomic and Molecular Physics of Plasmas

9-11 July 2025, Vienna, Austria

Scientific Secretary: K. Heinola

8 participants and IAEA staff



This technical meeting had a specific objective on atomic and molecular (A+M) data management policies for nuclear fusion applications. It was a follow-up to the discussions initiated at the Decennial IAEA Technical Meeting on Atomic, Molecular and Plasma-Material Interaction Data for Fusion Science and Technology (15-19 July 2024, Helsinki, Finland, <https://conferences.iaea.org/event/384/>), and which was followed by a dedicated subsequent event [Meeting on Unified Atomic and Molecular Data Policies](#) (from 25-27 November 2024, Forschungszentrum Julich, Germany).

The need was identified to agree on the procedure and criteria of the various datasets and formats focusing to

atomic and molecular data used in fusion applications. Aim of this special meeting was to unify the use of the atomic and molecular reaction data used in fusion plasma simulations, and to agree on corresponding metadata policies. Outcome of the meeting was preparation of a policy document for unifying A+M as well as plasma-surface interaction data, and which was sent out for further evaluation by wider community.

More information can be found at the meeting page: <https://conferences.iaea.org/event/434/>.

A summary report is in preparation and will be published as INDC(NDS)-0924.

## Joint IAEA–Consultative Committee for Ionizing Radiation Workshop on Neutron Beams at High Energy: Applications and Metrology

7-8 June 2025, Vienna, Austria  
Scientific Secretary: R. Capote Noy  
119 participants and IAEA staff



The workshop was co-organized by the IAEA and the Consultative Committee for Ionizing Radiation (CCRI) Section III. The primary objective of the workshop was to examine the requirements for high-energy neutrons across a range of applications and to explore how neutron metrology can effectively address these needs. Emphasis was placed on identifying existing and suitable facilities worldwide capable of supporting such efforts.

The workshop was attended by a total of 119 participants, including 33 remote participants. Over the course of two days, participants engaged in high-level scientific presentations and substantive discussions. The presentations included a wide range of topics, including space and aviation applications, radiobiology, high-energy accelerator facilities, fast and high-energy neutron sources, metrology, reference standards, dosimetry, and instrumentation.

A key outcome of the workshop was the clear recognition of a global need for standardized approaches to high-energy neutron measurements and improved access to well-characterized facilities capable of producing quasi-monoenergetic and broad energy-range neutron fields.

Report summarizing the workshop's conclusions is currently in preparation.

Immediately following the workshop, two related meetings were held: the meeting of EURADOS Working Group 11 on “High Energy Radiation Fields” and the 2025 session of Section III “Neutron Measurements” of the Consultative Committee for Ionizing Radiation. Both groups continued the dialogue initiated during the workshop, with a particular focus on addressing their respective technical and scientific priorities.

## Technical Meeting of the International Nuclear Reaction Data Centres

17-20 June 2025, Madrid, Spain  
Scientific Secretary: N. Otsuka  
27 participants and IAEA staff

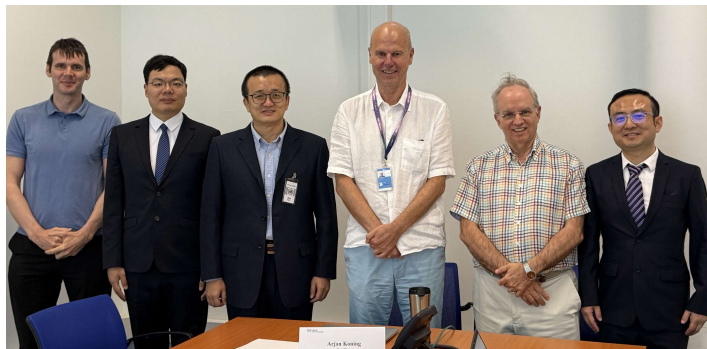


27 participants representing 13 cooperative Centres from eight Member States (China, Hungary, India, Japan, Korea, Russia, Ukraine and USA) and two International Organizations (IAEA, NEA) as well as researchers representing Spain attended the meeting hosted by Universidad Politécnica de Madrid (UPM). Main topics of this meeting were the EXFOR transmission statistics and coverage, compilation needs, quality control and coding rules as well as tools for compilation and dissemination. Oscar Cabellos (UPM) presented user's feedback based on his experience as a university faculty member, and stressed needs to maintain the existing EXFOR dissemination capabilities (retrieval and plotting of all the information stored in EXFOR that goes well beyond cross sections). Modernisation in production of EXFOR Entry Files and EXFOR Master Files implemented at NDS including version control was reported. All progress reports, working papers and slides are available from the meeting webpage ([http://nds.iaea.org/nrdc/nrdc\\_2025/](http://nds.iaea.org/nrdc/nrdc_2025/)).

A summary report of the meeting will be published as INDC(NDS)-0923 and is in preparation.

## Consultants' Meeting on Measurements of Nuclear Data for the IAEA Neutron Standards

20 June 2025, Vienna, Austria  
Scientific Secretary: R. Capote Noy  
6 participants and IAEA staff



The Back-n neutron source is a white neutron spectrum source devoted to time-of-flight nuclear data measurements located in Dongguan, China. This one-day meeting was devoted to discussing proposals to expand measurements of nuclear data for standard reactions at the Back-n neutron source.

## 7<sup>th</sup> International Workshop on Models and Data for Plasma–Material Interactions in Fusion Devices

26-28 May 2025, Vienna, Austria  
Scientific Secretary: K. Heinola  
57 participants and IAEA staff



The Workshop was organized for the seventh time in cooperation with the IAEA. It focused on the fundamental effects and data related to interactions between fusion plasma fuel and reactor component materials. The event brought together researchers and scientists from the fields of

fusion energy and materials science to review progress in modeling processes relevant to plasma-wall and plasma-material interactions in fusion devices. The workshop aimed to bridge the gap between fundamental computational studies and the interpretation of experimental PMI data, addressing a wide range of processes such as erosion, fuel species transport and trapping, and changes in material microstructure, composition, and morphology.

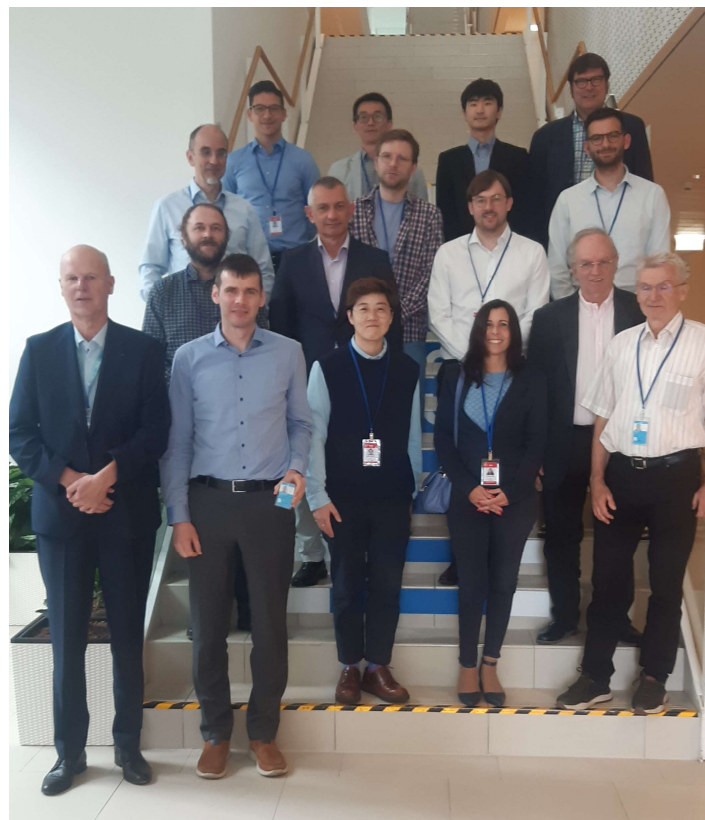
Further information is available at

<https://conferences.iaea.org/event/403/>.

Summary report of the meeting will be published as INDC(NDS)-0922.

## Consultants' Meeting on the Preparation of a Major FENDL Release

13-16 May 2025, Vienna, Austria  
Scientific Secretary: G. Schnabel  
32 participants and IAEA staff



Following up on the recent releases of FENDL-3.2b and FENDL-3.2c, documented in Nuclear Data Sheets 193 (2024) and Fusion Science and Technology (2025, DOI: 10.1080/15361055.2025.251499), respectively, this CM focused on discussing the requirements and next steps for a major FENDL release. The discussion included, among other topics, the principles and decision criteria for the adoption of new evaluations, the development of guidelines for FENDL data usage and the need for more comprehensive uncertainty quantification. Participants also recommended to establish a CRP for preparation of a major version. The event was held in hybrid form with 16 on-site participants from seven Member States. The summary report is in

preparation and will be published as INDC(NDS)-0921. More information is available at: <https://conferences.iaea.org/event/423/>.

## Technical Meeting on Nuclear Data Needs for Antineutrino Spectra Applications

7-11 April 2025, Seoul, Korea  
Scientific Secretary: P. Dimitriou  
43 participants and IAEA staff



The Third Meeting on Nuclear data for antineutrino spectra applications was hosted by Seoul National University (SNU) and local organiser was Jonghee Yoo (SNU).

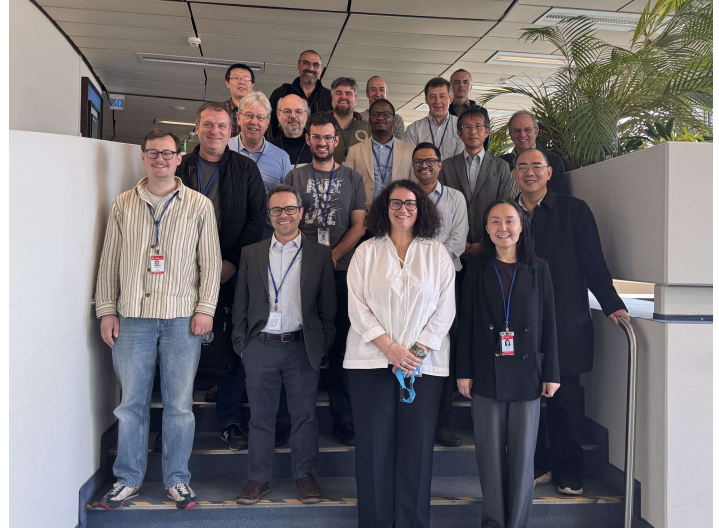
As a follow-up of the previous two meetings that were held in 2019 and 2023, this meeting provided a review of recent progress in reactor antineutrino facilities and experiments. It introduced several new experimental initiatives and presented the latest results. Discussions focused on improvements in the modelling of antineutrino flux and spectra, as well as in nuclear data and the quantification of associated uncertainties. The meeting also emphasized the importance of effective data dissemination and highlighted ongoing efforts in international coordination.

More details of the meeting can be found from meeting webpage: <https://conferences.iaea.org/event/402/>.

Summary report will be published as INDC(NDS)-0925.

## First Research Coordination Meeting on Updating Nuclear Level Densities for Basic Science and Applications

24-28 March 2025, Vienna, Austria  
Scientific Secretary: P. Dimitriou  
21 participants and IAEA staff



Participants of the first RCM of the new CRP came together to discuss the research objectives of the project and agree on the work program.

The project aims to compile all available experimental data on nuclear level densities, including information on low-lying discrete states, s-wave and p-wave resonance spacings, and derived data. This compilation will be rigorously evaluated with a comprehensive uncertainty analysis. A key objective is to develop global models - both phenomenological and microscopic - that meet specific quality standards. These models and the compiled data will be validated to ensure accuracy and reliability. The project will also seek to gain theoretical insights into the physics underlying nuclear level densities to guide model improvements. The deliverables will include a database of experimental and recommended data, supported by a modern online interface and web-based tools for user access. Finally, the results and recommendations will be published in peer-reviewed scientific journals.

More information including detailed agenda and presentations can be found at meeting webpage: <https://conferences.iaea.org/event/415/>.

Summary report of the meeting will be published as INDC(NDS)-0920.

## Joint ICTP-IAEA-MAMBA School on Materials Irradiation: from Basics to Applications

10-21 February 2025, Trieste, Italy

Directors: K. Heinola, J. Kohanoff, E. Magnano, L. Martin-Samos, T. Rubio, A. Simon

Local organiser: N. Seriani

60 participants and IAEA staff



The Joint ICTP-IAEA-MAMBA school was organized in collaboration with ICTP, IAEA and Horizon Europe project Materials Irradiation: from Basics to Applications (MAMBA) under Marie Skłodowska-Curie Actions (MSCA) programme. The school was opened by IAEA Deputy Director General, Najat Mokhtar.

This 2-week school focused on the response of materials to irradiation across a broad spectrum of applications, ranging from space electronics to nuclear materials and radiotherapies. It aimed to advance both experimental and theoretical understanding of how materials behave under intense radiation, while also enhancing the tools - both computational and experimental - used to study and control these effects.

Key areas of interest included space electronics and photovoltaics, radiation-resistant materials and nanostructures, radiation detectors, hadron radiotherapy, space radiobiology, nuclear decommissioning, nuclear fusion, accelerator technologies, stopping power, computational methods, and safe analysis strategies for heritage objects. The School fostered interdisciplinary collaboration and knowledge exchange to support innovation in radiation-resilient technologies and methodologies.

## Selected Charts, Reports and Documents

**INDC(EUR)-0041** Results of time-of-flight transmission measurements for  $^{89}\text{Y}$  at a 50 m station of GELINA, prepared by G. Tagliente, C. Paradela, G. Gkatis, P.M. Milazzo, S. Kopecky, P. Schillebeeckx and R. Wynants, July 2025.

**INDC(NDS)-0888** Neutron Data Standards, Summary Report of the Technical Meeting, 9-13 October 2023, prepared by G. Noguere, D. Neudecker and G. Schnabel, January 2025.

**INDC(NDS)-0892** Further Development of the Fusion Evaluated Nuclear Data Library (FENDL), Summary Report of the Consultants' Meeting, 30 October-2 November 2023, prepared by A. Trkov and G. Schnabel, February 2025.

**INDC(NDS)-0908** Summary Report of the IAEA Consultants' Meeting of International Nuclear Data Evaluation Network (INDEN) on the Evaluation of Light Elements (6), 18-22 November 2024, prepared by R.J. DeBoer, M. Pigni and P. Dimitriou, May 2025.

**INDC(NDS)-0918** Summary Report of the Technical Meeting on Compilation and Evaluation of Nuclear Charge Radii, 27-30 January 2025, prepared by K. Flanagan, H. Staiger, E. Takacs and P. Dimitriou, June 2025.

**INDC(NDS)-0919** Summary Report of the Technical Meeting on Nuclear Data Needs for Antineutrino Spectra and their Applications, 16-20 January 2023, prepared by M. Fallot, P. Huber, J. Link, B. Littlejohn and P. Dimitriou, April 2025.

Available cost-free on request only for **teachers and scientists from developing countries**:

**Chart of the Nuclides 2022** Japanese Nuclear Data Committee and Nuclear Data Center, Japan Atomic Energy Agency.

**Karlsruher Nuklidkarte** *booklet, 10th edition (2018).*

# In Memoriam

## Manfred Drosig



We are saddened to share the news that Manfred Drosig passed away suddenly on 26 March 2025.

Manfred Drosig was a distinguished physicist whose career was defined by his profound contributions to nuclear physics and academic life. After studying physics at the University of Vienna, he began his international scientific journey as a postdoctoral researcher at Los Alamos National Laboratory in 1969. Upon returning to the University of Vienna, he became a professor of experimental physics, yet maintained a strong and enduring connection to Los Alamos, where he continued to conduct experimental research over several decades.

Renowned for his unwavering dedication to nuclear physics, Manfred Drosig was especially recognized for his high-precision experimental work. One of his most notable achievements was the development of the code DROSG-2000: Neutron Source Reactions, which provides comprehensive data files for 60 accelerator-based neutron source reactions. These include neutron energies, differential cross-sections and differential yields; thick-target yields and white neutron spectra from monoenergetic neutron producing reactions; and differential cross sections and energies of (n,p), (n,d), (n,t) and (n, $\alpha$ ) reactions which are time reversed neutron production reactions (using detailed balance calculations).

Even after retiring in 2003, he remained active in evaluation of previous experimental data, publishing several papers on measurements and a monograph on dealing with uncertainties as well as offering advice and support to colleagues in the field.

He will be greatly missed.

*(written by Roswitha Avalos-Ortiz, August 2025)*

## Tsuneo Nakagawa



We regret to inform you that Tsuneo Nakagawa passed away on 2 May 2025. He worked at JAERI for 41 years (1969-2010) as a core evaluator of the JENDL library.

During the development of JENDL nuclear data libraries in Japan, experimental data comparisons were essential. Due to EXFOR's complex format, Mr. Nakagawa developed NESTOR to simplify data conversion, followed by CHESTOR for charged particles. These innovations boosted Japan's contributions to CINDA and highlighted EXFOR's importance.

After JENDL-3, Japan started collecting theoretical parameters to build a database for future evaluations, leading to the creation of INDES, also led by Mr. Nakagawa. This database became the first contribution to the IAEA/NDS's RIPL project, marking a significant milestone in international collaboration.

He will be greatly missed by those who knew, worked with and were helped by him.

# Nuclear Data Services – Contact Points

## For services to customers in USA:

US National Nuclear Data Center, Bldg. 490, Brookhaven National Laboratory, P.O. Box 5000,  
Upton, NY 11973-5000, USA.

Tel. +1 631-344-2902

Website: <http://www.nndc.bnl.gov/>

Email: [nndc@bnl.gov](mailto:nndc@bnl.gov)

Online services contact: Benjamin Shu, Email: [bshu@bnl.gov](mailto:bshu@bnl.gov)

General services contact: Catherine Dunn, Email: [cdunn@bnl.gov](mailto:cdunn@bnl.gov)

## For services to customers in OECD/NEA Data Bank member countries:

NEA Data Bank, OECD Nuclear Energy Agency, 46, Quai Alphonse le Gallo

F-92100 Boulogne-Billancourt, France.

Tel. +33 1 7321 (plus extension)

Website: <http://www.oecd-nea.org/da.bank/>

Contact: M. Fleming, Tel.: +33 1 73 21 28 22, Email: [michael.fleming@oecd-nea.org](mailto:michael.fleming@oecd-nea.org).

## For services to customers from the Russian Federation:

Neutron data: Russia Nuclear Data Center, Centr Jadernykh Dannyykh (CJD), Fiziko-Energeticheskij Institut, Ploschad Bondarenko, 1,  
249033 Obninsk, Kaluga Region, Russian Federation.

Tel. +7 08439-9-5803; Fax +7 08439-68235

Photonuclear data: Centre for Photonuclear Experiments Data, Centr Dannyykh Fotoyadernykh Eksperimentov (CDFE),

Skobel'syn Institute of Nuclear Physics, Lomonosov Moscow State University, Leninskie Gory, 119 922 Moscow, Russian Federation.

Tel. +7 495-939-3483; Fax +7 495-939-0896

Website: <http://cdfe.sinp.msu.ru/>

Contact: V.V. Varlamov, Email: [varlamov@depni.sinp.msu.ru](mailto:varlamov@depni.sinp.msu.ru); [vvvarlamov@gmail.com](mailto:vvvarlamov@gmail.com)

## For services to customers in China:

China Nuclear Data Center, China Institute of Atomic Energy, P.O. Box 275(41), Beijing 102413, China.

Tel. +86 10-6935-8401; Fax +86 10-6935-8119

Contact: Shu Nengchuan, Email: [nshu@ciae.ac.cn](mailto:nshu@ciae.ac.cn)

## Computer codes of US origin to all countries (there are charges and release restrictions):

Radiation Safety Information Computational Center (RSICC), Oak Ridge National Laboratory,

P.O. Box 2008, Oak Ridge, TN 37831-6003, USA.

Tel. +1 865-574-6176; Fax +1 865-241-4046

Email: [pdc@ornl.gov](mailto:pdc@ornl.gov)

## Computer codes of non-US origin to all countries (there may be release restrictions):

NEA Data Bank (see above)

Email: [programs@oecd-nea.org](mailto:programs@oecd-nea.org), Tel.: +33 1 73 21 28 30

IAEA-NDS on-line services at Website <https://nds.iaea.org/>

Users in India, China, Russia and neighbouring countries may use

IAEA-NDS mirror websites:

<http://www-nds.org.in> (India); <http://www-nds.ciae.ac.cn/> (China); <http://www-nds.atomstandard.ru/> (Russia).

## Impressum

### Nuclear Data Newsletter No. 79, August 2025

The Nuclear Data Newsletter is prepared by  
Nuclear Data Section,  
Division of Physical and Chemical Sciences,  
Department of Nuclear Sciences and Applications

International Atomic Energy Agency  
Vienna International Centre, PO Box 100, 1400 Vienna, Austria  
Printed by the IAEA in Austria, September 2025

25-02694

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