DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that the testing laboratory

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

meets the requirements of DIN EN ISO/IEC 17025:2018 for the conformity assessment activities specified in the following partial accreditation certificates. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided that these are explicitly confirmed in the annexes to the partial accreditation certificates listed below.

D-PL-21039-04-01
D-PL-21039-04-02
D-PL-21039-04-03
D-PL-21039-04-04

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate consists of this cover sheet, the reverse side of the cover sheet and the following annex. It only applies in connection with the partial accreditation certificates listed above and the notices referred to there.

Registration number of the certificate: **D-PL-21039-04-00**

Berlin, 30.01.2025 Dr. Haiko Blumenthal
Head of Technical Unit

Translation issued:
11.02.2025 Dr. Haiko Blumenthal
Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Partial Accreditation Certificate** that the testing laboratory

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This partial accreditation certificate only applies in connection with the notice of 30.01.2025 with accreditation number D-PL-21039-04.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 6 pages.

Registration number of the partial accreditation certificate: **PL-21039-04-01**
It is a part of the accreditation certificate: D-PL-21039-04-00.

Berlin, 30.01.2025 Dr. Haiko Blumenthal
Head of Technical Unit

Translation issued:
11.02.2025 Dr. Haiko Blumenthal
Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Partial Accreditation Certificate** that the testing laboratory

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This partial accreditation certificate only applies in connection with the notice of 30.01.2025 with accreditation number D-PL-21039-04.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 4 pages.

Registration number of the partial accreditation certificate: **D-PL-21039-04-02**
It is a part of the accreditation certificate: D-PL-21039-04-00.

Berlin, 30.01.2025 Dr. Joachim Kintrup
Head of Technical Unit

Translation issued:
30.01.2025 Dr. Joachim Kintrup
Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Partial Accreditation Certificate** that the testing laboratory

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This partial accreditation certificate only applies in connection with the notice of 30.01.2025 with accreditation number D-PL-21039-04.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 3 pages.

Registration number of the partial accreditation certificate: **D-PL-21039-04-03**
It is a part of the accreditation certificate: D-PL-21039-04-00.

Berlin, 30.01.2025 Dr. Sebastian Kitzig, Head of Technical Unit

Translation issued: 11.02.2025 Dr. Sebastian Kitzig, Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

DAkkS
Deutsche
Akkreditierungsstelle

Accreditation

The Deutsche Akkreditierungsstelle attests with this **Partial Accreditation Certificate** that the testing laboratory

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

meets the requirements according to DIN EN ISO/IEC 17025:2018 for the conformity assessment activities listed in the annex to this certificate. This includes additional existing legal and normative requirements for the testing laboratory, including those in relevant sectoral schemes, provided they are explicitly confirmed in the annex to this certificate.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This partial accreditation certificate only applies in connection with the notice of 30.01.2025 with accreditation number D-PL-21039-04.
It consists of this cover sheet, the reverse side of the cover sheet and the following annex with a total of 6 pages.

Registration number of the partial accreditation certificate: **D-PL-21039-04-04**
It is a part of the accreditation certificate: D-PL-21039-04-00.

Berlin, 30.01.2025 Dr. Olga Lettau
Head of Technical Unit

Translation issued:
12.02.2025 Dr. Olga Lettau
Head of Technical Unit

The certificate together with the annex reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

Office Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Office Braunschweig
Bundesallee 100
38116 Braunschweig

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-04-01 according to DIN EN ISO/IEC 17025:2018

Valid from: **30.01.2025**

Date of issue: 11.02.2025

This annex is part of the Accreditation Certificate D-PL-21039-04-00.

Holder of the Accreditation Certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with the location

Framatome GmbH
“Radiochemical Analysis”, “Chemical Analysis”, “Incorporation Monitoring"
Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Radiochemical analysis within the framework of emission and immission monitoring, the analysis of operational and waste samples, of fluence detectors and of the testing of sorbents for filter systems (without sampling); incorporation measurements

Flexible Scope of Accreditation:

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing procedures in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

1 Emission and immission monitoring and analysis of operational and waste samples from nuclear facilities

MB 02-025 2019-02	Determination of strontium-89 and strontium-90 on aerosol filters with gas flow proportional counter
MB 02-028 2020-11	Nuclide-specific determination of alpha-emitting radionuclides on filter and wipe test samples by direct measurement with the grid ionisation chamber (GIK)
MB 02-029 2019-02	Determination of Cl-36 in operational and waste samples after chemical separation by liquid scintillation measurement
MB 02-035 2019-02	Determination of iodine-129 in operational and waste samples after chemical separation by gamma spectrometry
MB 02-044 2019-02	Determination of Pu-241 by liquid scintillation after chemical separation in operational and waste samples and samples from environmental monitoring
MB 02-052 2020-12	Determination of total gamma activity concentration in operational and waste samples using HPGe (High Purity Germanium) detector
MB 02-056 2019-02	Determination of radionuclides in operational and waste samples and samples from environmental and incorporation monitoring by gamma spectrometry
MB 02-064 2019-02	Determination of Fe-55, Ni-63 in operational and waste samples and samples from environmental monitoring after sample preparation by liquid scintillation measurement
MB 02-083 2019-02	Determination of Sr-89/Sr-90 in operational and waste samples and samples from environmental and incorporation monitoring by liquid scintillation measurement

MB 02-084 2019-02	Determination of tritium in operational and waste samples and in environmental and urine samples after sample preparation by liquid scintillation
MB 02-085 2019-02	Determination of C-14 in operational and waste samples by liquid scintillation
MB 02-086 2019-02	Nuclide-specific determination of alpha emitters in operational and waste samples and in samples from environmental monitoring by alpha spectrometry after sample preparation
MB 02-087 2019-02	Determination of total alpha and total beta activity in operational and waste samples and soil and vegetation samples using gas flow proportional counter
MB 02-089 2019-04	Determination of Ni-59 in operational and waste samples by gamma spectrometry
MB 02-091 2024-02	Determination of the beta emitters Tc-99, Nb-93m, Zr-93, Se-79, Pm-147 and Pd-107 after chemical separation by liquid scintillation measurement
MB 02-092 2021-02	Determination of the nuclides Mo-93, Nb-94 and Sn-121m by gamma measurement
MB 10-006 2019-07	Preparation of sediment, soil and vegetation samples by drying and annealing
MB 10-010 2019-06	Preparation and digestion of operational, waste and environmental samples, metals and nonmetals
MB 10-011 2019-04	Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics

2 Fluence detectors

DIN 25456-1 1999-10	Neutron fluence measurement; fast-neutron fluence determination with activation and fission detectors (activity measurement only)
DIN 25456-2 1999-10	Neutron fluence measurement; fast-neutron fluence determination with iron activation detectors (activity measurement°only)

DIN 25456-3 1999-10	Neutron fluence measurement; fast-neutron fluence determination with nickel activation detectors (activity measurement°only)
DIN 25456-4 1999-10	Neutron fluence measurement; fast-neutron fluence determination with niobium activation detectors (activity measurement°only)
DIN 25456-5 1999-10	Neutron fluence measurement; fast-neutron fluence determination with copper activation detectors (activity measurement°only)
DIN 25456-6 1999-10	Neutron fluence measurement; fast-neutron fluence determination with thorium activation detectors (activity measurement°only)
ASTM E 263 2018-12	Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Iron (activity measurement only)
ASTM E 264 2019-04	Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Nickel (activity measurement only)
ASTM E 481 2016-10	Standard Test Method for Measuring Neutron Fluence Rates by Radioactivation of Cobalt and Silver (activity measurement only)
ASTM E 523 2016-12	Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Copper (activity measurement only)
ASTM E 1297 2018-06	Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Niobium (activity measurement only)

3 Testing of sorption materials

Determination of iodine retention using I-131 traced methyl iodide

ASTM D 2854 2019-09	Standard Test Method for Apparent Density of Activated Carbon
DIN 66165-2 2016-08	Particle size analysis - Sieving analysis - Part 2 : Procedure
MB 09-019 2018-11	Laboratory testing of iodine sorption on sorption media with I-131-doped methyl iodide

4 Incorporation measurements

Inspection type: In-vivo method

Standard / Issue date in-house method / Version	Analyte - Title of the standard Information on sample pretreatment / testing technique	Item under examination
RiPhyko, Part 2 2007-01-12	„Guideline of Physical Radiation Protection Control for determining the body dose, Part 2: Determination of the body dose in the case of internal radiation exposure (incorporation monitoring) (Sections 40, 41 and 42 of StrISchV) (Radiation Protection Ordinance))"	Person (Body dose)
MB 08-001 2021-03	Gamma spectrometric in-vivo determination of whole body and thyroid radioactivity within the human body	Person (whole or partial body)

Inspection type: In-vitro method

Standard / Issue date in-house method / Version	Analyte - Title of the standard Information on sample pretreatment / testing technique	Item under examination
RiPhyko, Part 2 2007-01-12	"Guideline of Physical Radiation Protection Control for determining the body dose, Part 2: Determination of the body dose in the case of internal radiation exposure (incorporation monitoring) (Sections 40, 41 and 42 of StrISchV (Radiation Protection Ordinance))"	Person (Body dose)

DIN EN ISO 17294-2 2024-03	Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (uranium only as specific activity)	Urine
MB 02-084 2019-02	Determination of tritium in operational and waste samples and environmental and urine samples after sample preparation by liquid scintillation	Urine

Abbreviations used

ASTM	American Society for Testing and Materials
DIN	Deutsches Institut für Normung (German Institute for Standardisation)
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
MB	Framatome GmbH in-house procedure (method description)

Deutsche Akkreditierungsstelle GmbH

Annex to the partial accreditation certificate D-PL-21039-04-02 according to DIN EN ISO/IEC 17025:2018

Valid from: **30.01.2025**

Date of Issue: 30.01.2025

This certificate annex forms part of the accreditation certificate D-PL-21039-04-00.

Holder of the partial accreditation certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with office located at

Framatome GmbH
“Radiochemical Analysis”, “Chemical Analysis”, “Incorporation Monitoring"
Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory fulfils the requirements according to DIN EN ISO/IEC 17025:2018 to perform the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, where applicable, including those in relevant sectoral programs, provided that these are expressly confirmed in the annexes to the partial accreditation certificates listed below.

The requirements for the management system in DIN EN ISO/IEC 17025 are written in a language relevant to testing laboratories and are generally consistent with the principles of DIN EN ISO 9001.

Inspections in the following areas:

Physical, physical-chemical and chemical analyses of water (wastewater, process water, raw water, water from treatment plants, ultrapure water)

Flexible accreditation area:

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing methods in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

Analyses of water (wastewater, process water, raw water, water from treatment plants, ultrapure water)

1 Sample preparation

MB 10-009 2019-02	High-temperature digestion for the determination of Br, CI, F and S in solid and liquid samples
MB 10-011 2019-04	Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxide and ceramics

2 Physical and physical-chemical parameters

DIN EN ISO 10523 (C 5) 2012-04	Water quality - Determination of pH value
DIN EN 27888 (C 8) 1993-11	Water quality - Determination of electrical conductivity

3 Anions

DIN EN ISO 10304-1 (D 20) 2009-07	Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate
DIN 38405-D 21 1990-10	Determination of dissolved silicate by spectrometry
DIN 38405-D 24 1987-05	Photometric determination of chromium(VI) using 1,5-diphenylcarbonohydrazide

4 Cations

DIN EN ISO 11885 (E 22) 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: *additionally Nb, Tl*)
DIN EN ISO 17294-2 (E 29) 2024-12	Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: *additionally Eu, I, Nb, Np, S, Si, Ta, Tc, Ti*)
DIN EN ISO 14911 (E 34) 1999-12	Water quality - Determination of dissolved Li^+, Na^+, NH_4^+, K^+, Mn^{2+}, Ca^{2+}, Mg^{2+}, Sr^{2+} and Ba^{2+} using ion chromatography - Method for water and wastewater

5 Summary Effect and Material Characteristics

DIN 38409-H 1 1987-01	Determination of total dry residue, filtrate dry residue and residue on ignition
DIN 38409-H 2 1987-03	Determination of filterable matter and the residue on ignition
DIN EN 1484 (H 3) 2019-04	Water analysis – Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)
DIN EN ISO 9377-2 (H 53) 2001-07	Water quality - Determination of the hydrocarbon index - Part 2: Method using solvent extraction and gas chromatography

6 Individual components

MB 01-005 2019-02	Determination of boron in aqueous solutions by volumetric analysis
MB 02-068 2019-02	Isotope ratio determination in aqueous solutions by ICP-MS

Abbreviations used:

DIN	Deutsches Institut für Normung e. V. (German Institute for Standardisation)
EN	European Standard
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
MB XX-XXX	In-house procedure of the KBS Department for Radiochemistry, Chemistry of Framatome GmbH

Deutsche Akkreditierungsstelle

Annex to the Partial Accreditation Certificate D-PL-21039-04-03 according to DIN EN ISO/IEC 17025:2018

Valid from: **30.01.2025**

Date of issue: 11.02.2025

This annex is a part of the accreditation certificate D-PL-21039-04-00.

Holder of partial accreditation certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with the location

Framatome GmbH
“Radiochemical Analysis”, “Chemical Analysis”, “Incorporation Monitoring"
Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:
Physical, physical-chemical and chemical analyses of waste from nuclear facilities

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de.

Flexible accreditation area:

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing procedures in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

Content

1 Sample preparation of waste from nuclear facilities 2
2 Anions, cations in waste from nuclear facilities 2
3 Summary effect and material characteristics of waste from nuclear facilities 3
Abbreviations used 3

1 Sample preparation of waste from nuclear facilities

MB 10-009 2019-02	High-temperature digestion for the determination of Br, Cl, F and S in solid and liquid samples
MB 10-010 2019-06	Preparation and digestion of operational, waste and environmental samples, metals and non-metals
MB 10-011 2019-04	Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxide and ceramics

2 Anions, cations in waste from nuclear facilities

DIN EN ISO 10304-1 2009-07	Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: *here for waste*)
DIN EN ISO 11885 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: *here for waste;* additionally: *Nb, Tl*)

DIN EN ISO 17294-2 2024-03	Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: *additionally: Eu, I, Nb, Np, S, Si, Ta, Tc, Ti*)
DIN 38405-24 1987-05	Photometric determination of chromium (VI) using 1,5-diphenylcarbazide (Modification: *here for waste*)
MB 02-068 2019-02	Isotope ratio determination in aqueous solutions by ICP-MS (Modification: *here for waste*)

3 Summary effect and material characteristics of waste from nuclear facilities

DIN EN 15936 2012-11	Soil, waste, treated biowaste and sludge - Determination of total organic carbon (TOC) by dry combustion
DIN 38409-1 1987-01	Determination of total dry residue, filtrate dry residue and ignition residue (Modification: *here for waste*)
DIN 38409-2 1987-03	Determination of filterable substances and residue on ignition (Modification: *here for waste*)

Abbreviations used

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
MB	In house procedure of Framatome GmbH

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-04-04 according to DIN EN ISO/IEC 17025:2018

Valid from: **30.01.2025**

Date of issue: 12.02.2025

This annex is part of the Accreditation Certificate D-PL-21039-04-00.

Holder of the Accreditation Certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with the location

Framatome GmbH
“Radiochemical Analysis”, “Chemical Analysis”, “Incorporation Monitoring"
Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Analysis of metals, metal alloys and metal oxides from nuclear facilities; Analysis of equipment for nuclear facilities

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing methods in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

1 Analysis of metals, metal alloys and metal oxides from nuclear facilities

1.1 Sample preparation

MB 10-009 2019-02	High-temperature digestion for the determination of Br, CI, F and S in solid and liquid samples
MB 10-010 2019-06	Preparation and digestion of operational, waste and environmental samples, metals and non-metals
MB 10-011 2019-04	Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics

1.2 Elements

DIN EN ISO 10304-1 2009-07	Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: *Determination in metals, metal alloys and metal oxides*)
DIN EN ISO 11885 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: *Determination of Nb, Tl in metals, metal alloys and metal oxides*)
DIN EN ISO 15350 2010-08	Steel and iron - Determination of total carbon and sulfur content - Infrared absorption method after combustion in an induction furnace (routine method)
DIN EN ISO 15351 2010-08	Steel and iron - Determination of nitrogen content - Thermal conductimetric method after fusion in a current of inert gas (Routine method)

DIN EN ISO 17294-2 2024-03	Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: *Determination of Eu, I, Nb, Np, S, Si, Ta, Tc, Ti in metals, metal alloys and metal oxides*)
DIN EN 10276-2 2003-10	Chemical analysis of ferrous materials - Determination of oxygen content in steel and iron - Part 2: Infrared method after fusion under inert gas (Modification: *Determination in metals, metal alloys and metal oxides*)
MB 02-068 2019-02	Isotope ratio determination in aqueous solutions by ICP-MS (Modification: *Determination in metals, metal alloys and metal oxides*)
ASTM E 415 2021-10	Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry (Modification: *Addition of W*)
ASTM E 1086 2022-08	Standard Test Method for Analysis of Austenitic Stainless Steel by Spark Atomic Emission Spectrometry (Modification: *Addition of Al, Co, Nb, Ti, V, W, B, N, O, Sn, Ta, Sb, Pb, As*)
ASTM E 1251 2017-10	Standard Test Method for Analysis of Aluminium and Aluminium Alloys bySpark Atomic Emission Spectrometry
ASTM E 3047 2022-12	Standard Test Method for Analysis of Nickel Alloys by Spark Atomic Emission Spectrometry
MB 03-031 2019-07	Determination of hydrogen in metals and metal oxides by hot extraction

1.3 Organic Parameters

DIN EN 14039 2005-01	Characterization of waste - Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography (Modification: *Determination in metals, metal alloys and metal oxides*)

2 Inspection of operating equipment for nuclear facilities

2.1 Sample preparation

MB 10-009 2019-02	High-temperature digestion for the determination of Br, CI, F and S in solid and liquid samples
MB 10-010 2019-06	Preparation and digestion of operational, waste and environmental samples, metals and non-metals
MB 10-011 2019-04	Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics

2.2 Physical-chemical parameters

DIN 38409-1 1987-01	Determination of total dry residue, filtrate dry residue and Residue on ignition (Modification: *Determination for use in equipment for nuclear facilities*)
DIN 38409-2 1987-03	Determination of filterable matter and the residue on ignition (Modification: *Determination for use in equipment for nuclear facilities*)
DIN EN ISO 10523 2012-04	Water quality - Determination of pH value (Modification: *Determination for use in equipment for nuclear facilities*)

2.3 Elements

DIN EN ISO 10304-1 2009-07	Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: *Determination for use in equipment for nuclear facilities*)
DIN EN ISO 11885 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: *Determination of Nb, Tl in equipment for nuclear facilities*)

DIN EN ISO 17294-2 2024-03	Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: *Determination of Eu, I, Nb, Np, S, Si, Ta, Tc, Ti in equipment for nuclear facilities*)
DIN 38405-21 1990-10	Determination of dissolved silicate by spectrometry (Modification: *Determination for use in equipment for nuclear facilities*)
DIN 38405-24 1987-05	Photometric determination of chromium (VI) using 1,5-diphenylcarbonohydrazide (Modification: *Determination for use in equipment for nuclear facilities*)
MB 01-005 2019-02	Determination of boron in aqueous solutions by volumetric analysis (Modification: *in power plant solutions and simulations*)
MB 02-068 2019-02	Isotope ratio determination in aqueous solutions by ICP-MS (Modification: *in power plant solutions and simulations*)

2.4 Organic Parameters

DIN EN 1484 2019-04	Water analysis - Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC). (Modification: *Determination for use in equipment for nuclear facilities*)
DIN EN 14039 2005-01	Characterization of waste - Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography (Modification: *Determination for use in equipment for nuclear facilities*)
DIN EN 15936 2012-11	Soil, waste, treated biowaste and sludge - Determination of total organic carbon (TOC) by dry combustion (Modification: *Determination for use in equipment for nuclear facilities*)
DIN EN ISO 9377-2 2001-07	Water quality - Determination of hydrocarbon oil index - Part 2: Method using solvent extraction and gas chromatography (Modification: *Determination for use in equipment for nuclear facilities*)

Abbreviations used

ASTM	American Society for Testing and Materials
DIN	Deutsches Institut für Normung e.V. – German institute for standardization
EN	Europäische Norm – European Standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardisation
MB	Framatome GmbH in-house procedure (method description)