



EA MLA Signatory
Český institut pro akreditaci, o.p.s.
Olšanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

CERTIFICATE OF ACCREDITATION

No. 118/2022

ÚJV Řež, a. s.
with registered office Hlavní 130, Řež, 250 68 Husinec, Company Registration No. 46356088

to the Testing Laboratory No. 1093.4
Central Analytical Laboratory - Testing Laboratory

Scope of accreditation:

Determination of radionuclides for monitoring of operational safety of nuclear facilities; determination and monitoring of radioactive, toxic and other elements (isotopes) in environment and of samples of natural materials; analyses of samples of gases and biomass to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2018

In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 20/2021 of 5. 1. 2021, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **8. 7. 2024**

Prague: 9. 3. 2022




Lukáš Burda
Director of the Department
of Testing and Calibration Laboratories
Czech Accreditation Institute
Public Service Company

**The Appendix is an integral part of
Certificate of Accreditation No. 118/2022 of 19/03/2022**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

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The Laboratory has a flexible scope of accreditation permitted as detailed in the Annex.

Updated list of activities provided within the flexible scope of accreditation is available at the Laboratory from the Laboratory Manager.

The laboratory is qualified to provide expert opinions and to interpret the test results.

Tests:

Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
1	Determination of activity of isotopes - gamma emitters - by high resolution gamma-ray spectrometry method	R-01 (ČSN EN ISO 10703)	Gaseous, liquid and solid samples
2	Determination of gross alpha activity by proportional detector	R-02 (ČSN 75 7611)	Liquid, solid samples, extracts of solid samples and aerosol filters
3	Determination of gross beta activity by proportional detector	R-03 (ČSN 75 7612)	Liquid, solid samples, extracts of solid samples and aerosol filters
4	Determination of tritium by liquid scintillation spectrometry	R-04 (ČSN ISO 9698)	Liquid, gaseous and solid samples
5	Determination of activity of ¹⁴ C by liquid scintillation spectrometry	R-05 (ČSN EN ISO 13162)	Liquid, gaseous and solid samples
6	Determination of ⁹⁹ Tc concentration by ICP-MS method with subsequent calculation of activity from measured values	R-08 (ISO DIS 22125-2)	Liquid and solid samples, natural materials
7	Determination of ¹²⁹ I concentration by ICP-MS method with subsequent calculation of activity from measured values	R-09 (ISO DIS 22125-2)	Gaseous, liquid, solid, biological, vegetable, animal samples and natural materials
8	Determination of activity of ⁹⁴ Nb and ^{93m} Nb by high resolution gamma-ray spectrometry method	R-10 (manual US DOE RP330)	Liquid and solid samples, natural materials



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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
9	Determination of biomass carbon – technique of ¹⁴ C activity measurement by liquid scintillation spectrometry	R-15 (ČSN EN 16640, ČSN EN ISO 13833 ČSN EN ISO 21644)	Mixed biomass fuel, biomass fuel components, biomass
10	Determination of uranium concentration by modified Davies & Gray titration method	C-U-01 (J.Radioanal.Nucl.Chem (2009) 282:939–944)	Liquid and solid samples
11	Determination of low concentrations of elements and isotopes by ICP-MS method ³	C-ICP-MS-01 (ČSN EN ISO 17294-1, ČSN EN 16171, ČSN EN ISO 17294-2)	Liquid and solid samples
*12	Measurement of ventilation filters efficiency - aerosol filters, optical method	R-16 (LIGTHOUSE manual)	Aerosol filters
*13	Measurement of ventilation filters efficiency - iodine filters, high resolution gamma spectrometry method	R-17 (AALBORG manual)	Iodine filters and iodine filter media
14	Determination of activity of ³⁶ Cl by liquid scintillation spectrometry	R-18 (Eichrom manual)	Liquid and solid samples, natural materials
15	Determination of plutonium, americium and curium by alpha-spectrometry method	R-19 (Eichrom manual)	Liquid, solid, biological, vegetable, animal samples and natural materials
16	Determination of ²⁴¹ Pu by liquid scintillation spectrometry	R-19.1 (Eichrom manual)	Liquid, solid, biological, vegetable, animal samples and natural materials
17	Determination of activity of strontium by liquid scintillation spectrometry	R-20 (Eichrom manual)	Liquid, solid, biological, vegetable, animal samples a and natural materials
18	Determination of activity of ⁶³ Ni by liquid scintillation spectrometry method	R-21 (Eichrom manual)	Liquid and solid samples, natural materials

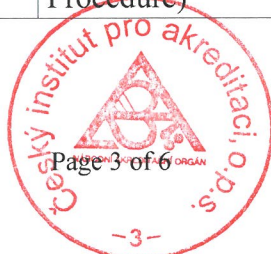


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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
19	Determination of activity of ⁵⁹ Ni by high resolution gamma-ray spectrometry method	R-22 (Eichrom manual)	Liquid and solid samples, natural materials
20	Determination of gross alpha activity by liquid scintillation spectrometry	R-23 (Eichrom manual)	Liquid and solid samples
21	Determination ²³⁷ Np by alpha-spectrometry	R-24 (Eichrom manual)	Liquid, solid, biological, vegetable, animal samples and natural materials
22	Determination of activity of ⁷⁹ Se by liquid scintillation spectrometry	R-26 (US DOE RP 530 manual)	Liquid and solid samples
23	Determination of activity of ⁹³ Zr by liquid scintillation spectrometry	R-27 (US DOE RP330 manual)	Liquid and solid samples
24	Determination of activity of ⁵⁵ Fe by liquid scintillation spectrometry	R-28 (J.Radioanal.Nucl.Chem (2014) 302:117–122)	Liquid and solid samples
25	Determination of ¹²⁶ Sn concentration by ICP-MS method with subsequent calculation of activity from measured values	R-30 (Nervik, W. E., Radiochemistry of Tin, National Research Council)	Liquid and solid samples
26	Determination of activity of ⁴¹ Ca by liquid scintillation spectrometry	R-31 (Radiochimica Acta 93, 611-617 (2005))	Liquid and solid samples
27	Determination of total organic carbon (TOC) by spectrophotometry - Hach commercial analytical kit	C-01 (ČSN EN 1484, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste
28	Determination of chloride by spectrophotometry - Hach commercial analytical kit	C-04 (ČSN 75 7422, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste



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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
29	Determination of sulphate by spectrophotometry - Hach commercial analytical kit	C-05 (ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste
30	Determination of phosphate and total phosphorus by spectrophotometry - Hach commercial analytical kit	C-06 (ČSN EN ISO 6878, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, hot, ground, surface, waste water, liquid waste
31	Determination of chemical oxygen demand using potassium dichromate (COD-Cr) by spectrophotometry - Hach commercial analytical kit	C-07 (ČSN ISO 15705, ČSN ISO 17381, HACH Operating Procedure)	Water – ground, surface, waste water, liquid waste
32	Determination of total nitrogen by spectrophotometry – Hach commercial analytical kit and organic nitrogen by calculation from measured values	C-08 (ČSN EN ISO 11905, ČSN ISO 17381, HACH Operating Procedure)	Water – ground, surface, waste water, liquid waste
33	Determination of nitrite and N-NO ₂ by spectrophotometry – Hach commercial analytical kit	C-09 (ČSN EN 26777, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste
34	Determination of nitrate and N-NO ₃ by spectrophotometry – Hach commercial analytical kit	C-10 (ČSN 75 7455, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste
35	Determination of ammonium and N-NH ₄ by spectrophotometry – Hach commercial analytical kit	C-11 (ČSN ISO 7150-1, ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, ground, surface, waste water, liquid waste
36	Determination of dissolved inorganic salts (DIS) by gravimetry	C-12 (ČSN ISO 757347)	Waste water
37	Determination of suspended solids - by gravimetry	C-13 (ČSN EN 872)	Water – ground, surface, waste water, liquid waste



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Ordinal number ¹	Test procedure/method name	Test procedure/method identification ²	Tested object
38	Determination of chemical oxygen demand using permanganate (COD-Mn) by spectrophotometry - Hach commercial analytical kit	C-15 (ČSN ISO 17381, HACH Operating Procedure)	Water – drinking, hot, ground, surface
39	Determination of pH by potentiometry	C-17 (ČSN ISO 10523)	Water – drinking, hot, ground, surface, waste water, liquid waste

¹ asterisk at the ordinal number identifies the tests, which the Laboratory is qualified to carry out outside the permanent laboratory premises

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest editions of the specified procedure are used (including any changes)

³ elements: Li, Be, B, Na, Mg, Si, S, Al, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, Cs, Ba, La, Hf, Ta, W, Re, Os, Ir, Pt, Au, Hg, Tl, Pb, Bi, Th, Pa, U, Np, Pu, Am, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu

Appendix:

Flexible scope of accreditation

Serial numbers of tests
1 – 26

The Laboratory is allowed to modify the test methods listed in the Annex within the specified scope of accreditation provided the measuring principle is observed. The flexible approach to the scope of accreditation cannot be applied to the tests not included in the Annex.

Explanatory notes:

C – U – 01 Concentration of Uranium
IC Isotopic Composition
ICP – MS Inductively Coupled Plasma Mass Spectrometry
R Radiochemical Method
C Chemical method
VZT Air handling systems and equipment
IAEA International Atomic Energy Agency in Vienna



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Specification of terms of gaseous, liquid, solid, biological, vegetable, animal and natural material samples:

1. Gaseous samples
 - Samples of gases released as a rule from a nuclear facility through a ventilation stack or released in its part, which can subsequently be led through a ventilation system into the ventilation stack and into the environment.
2. Liquid samples
 - Samples in the form of solutions in inorganic solvents (water, acids, bases) or organic solvents; liquid radioactive waste, technological water, water or acid or base or organic solvent leachate of solid radioactive samples; samples from International Atomic Energy Agency in Vienna of system of safeguards.
 - Samples of water from an operated nuclear facility, nuclear facilities water discharge, process water, samples of water from the nuclear facility neighbourhood, samples of drinking, surface and waste water.
3. Solid samples
 - Solid samples from an operated nuclear facility, samples of radioactive waste from the processing and storage process and storage process, nuclear facility outputs, samples with absorbed substance, filters.
4. Biological samples
 - Urine, stool at suspect personnel contamination; analyses of tissues to determine the concentration (activity) of elements (isotopes).
5. Samples of animal and vegetable origin, natural material samples
 - Milk and milk products, cereals, fodder plants, vegetables, soil, sediments to determine the concentration (activity) of elements (isotopes).
6. Mixed biomass fuel
 - A mixture of combustible organic substances (components) obtained as a rule from waste products or products made of current or fossil materials with minimum content of toxic or harmful pollutants.
 - The components may include:
 - Current natural materials or wastes or products made of them (straw, wood, paper, rags, leather, products, biomass or similar).
 - Fossil materials or wastes or products made from them (plastics, rubber, insulation or similar).
7. Liquid waste
 - Waste in liquid condition

