



21-03-09-NITE-AC-003
2021-09-29

Certificate of Accreditation

International Accreditation Japan (IAJapan) hereby accredits the following conformity assessment body as a calibration laboratory of ASNITE accreditation program.

Accreditation Identification: ASNITE 0001 Calibration-Chem

Name of Conformity Assessment Body: National Metrology Institute of Japan,
National Institute of Advanced Industrial Science and Technology

Name of Legal Entity: National Institute of Advanced Industrial Science and Technology

Location of Conformity Assessment Body: 1-1-1 Umezono, Tsukuba-shi, Ibaraki 305-8563, JAPAN

Scope of Accreditation: as the following pages

Accreditation Requirement: ISO/IEC 17025:2017*

* The relevant accreditation requirements described in the ASNITE-C (NMI) Accreditation Scheme Document are also applied.

Effective Date of Accreditation: 2019-11-01

Expiry Date of Accreditation: 2024-10-31

Date of Initial Accreditation: 2003-10-09

SAKAMOTO Kozo

Chief Executive, International Accreditation Japan (IAJapan)

National Institute of Technology and Evaluation

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- International Accreditation Japan (IAJapan) is a laboratory accreditation body which has signed MRAs of ILAC (International Laboratory Accreditation Cooperation) and APAC (Asia Pacific Accreditation Cooperation).
 - MRA requirements are, in addition to relevant international standards and guides, requirements for participation in proficiency testing programs, surveillance and reassessment, and the policy for the traceability of measurement for MRA purpose.
 - This laboratory fulfills ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation means this laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).
 - The latest accreditation information is publicly available on IAJapan Website as an accreditation certificate.

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation	
	Instrument or Artefact	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)		
Standard gases	high purity nitrogen monoxide (NO)		0.99 mol/mol to 1 mol/mol	1.0 % to 0.01 % (relative)	2019-11-01 *2021-09-29
	impurities in NO	NO ₂	10 µmol/mol to 10000 µmol/mol	10 % to 2.5 % (relative)	
		N ₂	11 µmol/mol to 5000 µmol/mol	100 % to 2.5 % (relative)	
		O ₂	11 µmol/mol to 5000 µmol/mol	100 % to 2.5 % (relative)	
		N ₂ O	7.5 µmol/mol to 11000 µmol/mol	10 % to 0.5 % (relative)	
		CH ₄	2 µmol/mol to 11000 µmol/mol	100 % to 0.5 % (relative)	
		C ₃ H ₈	2 µmol/mol to 11000 µmol/mol	100 % to 0.5 % (relative)	
		H ₂ O*	21 µmol/mol to 100 µmol/mol	100 % to 0.5% (relative)	
		CO ₂ *	10 µmol/mol to 100 µmol/mol	100 % to 0.5% (relative)	
	high purity sulfur dioxide (SO ₂)		0.99 mol/mol to 1 mol/mol	1.0 % to 0.01 % (relative)	
	impurities in SO ₂	CO ₂	1 µmol/mol to 15000 µmol/mol	100 % to 0.5 % (relative)	
		N ₂	1 µmol/mol to 15000 µmol/mol	100 % to 0.5 % (relative)	
		O ₂	1 µmol/mol to 15000 µmol/mol	100 % to 0.5 % (relative)	
		CH ₄	0.09 µmol/mol to 11000 µmol/mol	100 % to 0.5 % (relative)	
		C ₃ H ₈	0.04 µmol/mol to 11000 µmol/mol	100 % to 0.5 % (relative)	
		H ₂ O*	24 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)	
	high purity methane (CH ₄)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.0005 mmol/mol	
	impurities in CH ₄	N ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		Ar	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
CO		0.04 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
CO ₂		0.04 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
C ₂ H ₆		0.01 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
H ₂		0.07 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
hexane		0.01 µmol/mol to 180 µmol/mol	100 % to 0.6 % (relative)		
H ₂ O		0.1 µmol/mol to 130 µmol/mol	70 % to 5 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation	
	Instrument or Artefact	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)		
Standard gases	high purity propane (C ₃ H ₈)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.001 mmol/mol	2019-11-01
	impurities in C ₃ H ₈	N ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		Ar	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CO ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CH ₄	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		C ₂ H ₆	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propylene	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		butane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		isobutane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		H ₂ O	0.5 µmol/mol to 1000 µmol/mol	70 % to 20 % (relative)	
	high purity carbon dioxide (CO ₂)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.002 mmol/mol	
	impurities in CO ₂	N ₂	0.1 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)	
		H ₂	0.8 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)	
		He	0.8 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)	
		CH ₄	0.004 µmol/mol to 1 µmol/mol	100 % to 1 % (relative)	
		C ₃ H ₈	0.004 µmol/mol to 1 µmol/mol	100 % to 1 % (relative)	
		CO	0.05 µmol/mol to 1 µmol/mol	100 % to 0.5 % (relative)	
		H ₂ O	0.5 µmol/mol to 130 µmol/mol	100 % to 30 % (relative)	
high purity carbon monoxide (CO)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.02 mmol/mol		
impurities in CO	N ₂	1.5 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	O ₂	2.1 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	H ₂	0.9 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	He	0.4 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	CH ₄	1.5 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	CO ₂	0.3 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		
	H ₂ O	0.36 µmol/mol to 100 µmol/mol	100 % to 0.5 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Standard gases	high purity oxygen (O ₂)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.0005 mmol/mol
	impurities in O ₂	Ar	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		N ₂	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		CH ₄	0.05 µmol/mol to 1 µmol/mol	30 % to 5 % (relative)
		CO	0.06 µmol/mol to 1 µmol/mol	30 % to 5 % (relative)
		CO ₂	0.05 µmol/mol to 1 µmol/mol	30 % to 5 % (relative)
		N ₂ O	0.05 µmol/mol to 1 µmol/mol	30 % to 5 % (relative)
		H ₂ O	0.5 µmol/mol to 130 µmol/mol	70 % to 30 % (relative)
	high purity vinyl chloride		0.99 mol/mol to 1 mol/mol	5 mmol/mol to 0.01 mmol/mol
	impurities in vinyl chloride	N ₂	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		O ₂	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		Ar	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		CH ₄	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		CO ₂	1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)
		methyl chloride	1 µmol/mol to 200 µmol/mol	30 % to 2 % (relative)
		ethyl chloride	1 µmol/mol to 100 µmol/mol	20 % to 2 % (relative)
		acetylene	1 µmol/mol to 100 µmol/mol	20 % to 2 % (relative)
		H ₂ O	0.5 µmol/mol to 1000 µmol/mol	70 % to 20 % (relative)
	high purity 1,3-butadiene		0.98 mol/mol to 1 mol/mol	20 mmol/mol to 1 mmol/mol
	impurities in 1,3-butadiene	N ₂	5 µmol/mol to 1000 µmol/mol	30 % to 2 % (relative)
		O ₂	5 µmol/mol to 1000 µmol/mol	30 % to 2 % (relative)
Ar		5 µmol/mol to 1000 µmol/mol	30 % to 2 % (relative)	
CO ₂		5 µmol/mol to 1000 µmol/mol	30 % to 2 % (relative)	
butane		1 µmol/mol to 500 µmol/mol	20 % to 2 % (relative)	
isobutane		1 µmol/mol to 500 µmol/mol	20 % to 2 % (relative)	
1-butene		1 µmol/mol to 1000 µmol/mol	20 % to 2 % (relative)	
<i>trans</i> -2-butene		1 µmol/mol to 7000 µmol/mol	20 % to 2 % (relative)	
<i>cis</i> -2-butene		1 µmol/mol to 8000 µmol/mol	20 % to 2 % (relative)	
isobutylene		1 µmol/mol to 1000 µmol/mol	20 % to 2 % (relative)	
4-vinyl-1-cyclohexene (1,3-butadiene dimer)		1 µmol/mol to 2150 µmol/mol	60 % to 30 % (relative)	
H ₂ O		0.5 µmol/mol to 1000 µmol/mol	70 % to 20 % (relative)	

2019-11-01

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation	
	Instrument or Artefact	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)		
Standard gases	high purity ethane*		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.001 mmol/mol	*2021-09-29
	impurities in ethane*	N ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CO ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		methane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		ethylene	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propylene	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		butane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		H ₂ O	10 µmol/mol to 1000 µmol/mol	70 % to 20 % (relative)	
	high purity isobutane*		0.99 mol/mol to 1 mol/mol	2 mmol/mol to 0.005 mmol/mol	
	impurities in isobutane*	N ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CO ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		butane	0.1 µmol/mol to 200 µmol/mol	30 % to 2 % (relative)	
		isobutene	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		<i>cis</i> -2-butene	0.1 µmol/mol to 500 µmol/mol	30 % to 2 % (relative)	
		<i>trans</i> -2-butene	0.1 µmol/mol to 500 µmol/mol	30 % to 2 % (relative)	
		pentane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		H ₂ O	50 µmol/mol to 3000 µmol/mol	70 % to 10 % (relative)	
	high purity butane*		0.99 mol/mol to 1 mol/mol	2 mmol/mol to 0.005 mmol/mol	
	impurities in butane*	N ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CO ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propane	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		isobutane	0.1 µmol/mol to 200 µmol/mol	30 % to 2 % (relative)	
isobutene		0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
<i>cis</i> -2-butene		0.1 µmol/mol to 500 µmol/mol	30 % to 2 % (relative)		
<i>trans</i> -2-butene		0.1 µmol/mol to 500 µmol/mol	30 % to 2 % (relative)		
pentane		0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)		
H ₂ O		50 µmol/mol to 3000 µmol/mol	70 % to 10 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation	
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)		
Standard gases	high purity isopentane*	0.99 mol/mol to 1 mol/mol	5 mmol/mol to 0.01 mmol/mol	2019-11-01 *2021-09-29	
	high purity pentane*	0.99 mol/mol to 1 mol/mol	5 mmol/mol to 0.01 mmol/mol		
	nitrogen*	0.999 mol/mol to 1 mol/mol	1 mmol/mol to 0.004 mmol/mol		
	impurities in nitrogen*	O ₂ +Ar	1 µmol/mol to 10 µmol/mol		100 % to 30 % (relative)
		carbon dioxide	0.1 µmol/mol to 10 µmol/mol		100 % to 30 % (relative)
		total hydro carbons	0.005 µmol/mol to 10 µmol/mol		100 % to 30 % (relative)
		H ₂ O	1.4 µmol/mol to 10 µmol/mol		100 % to 30 % (relative)
	O ₂ /N ₂	5 µmol/mol to 5 mmol/mol	1 % to 0.1 % (relative)		
	N ₂ O/N ₂ or N ₂ O/air	0.2 µmol/mol to 0.02 mol/mol	0.2 % to 0.1 % (relative)		
	CH ₄ /air	1600 nmol/mol to 2600 nmol/mol	1.3 nmol/mol		
	hexane/N	20 µmol/mol to 600 µmol/mol	2 % to 0.3 % (relative)		
	hexane/CH ₄	20 µmol/mol to 600 µmol/mol	2 % to 0.3 % (relative)		
	N ₂ +CO ₂ +C ₃ H ₈ /CH ₄	N ₂ : 0.005 mol/mol to 0.02 mol/mol CO ₂ : 0.005 mol/mol to 0.02 mol/mol C ₃ H ₈ : 0.02 mol/mol to 0.1 mol/mol	N ₂ : 0.2 mmol/mol CO ₂ : 0.1 mmol/mol C ₃ H ₈ : 0.3 mmol/mol		
	synthetic natural gas	N ₂ : 5 mmol/mol to 200 mmol/mol CO ₂ : 5 mmol/mol to 100 mmol/mol C ₂ H ₆ : 2 mmol/mol to 200 mmol/mol C ₃ H ₈ : 1 mmol/mol to 100 mmol/mol <i>n</i> -C ₄ H ₁₀ : 0.5 mmol/mol to 10 mmol/mol <i>iso</i> -C ₄ H ₁₀ : 0.5 mmol/mol to 10 mmol/mol CH ₄ : 600 mmol/mol to 980 mmol/mol	N ₂ : 0.5 % to 0.3 % (relative) CO ₂ : 0.6 % to 0.4 % (relative) C ₂ H ₆ : 0.5 % to 0.3 % (relative) C ₃ H ₈ : 0.5 % to 0.3 % (relative) <i>n</i> -C ₄ H ₁₀ : 0.5 % to 0.3 % (relative) <i>iso</i> -C ₄ H ₁₀ : 0.5 % to 0.3 % (relative) CH ₄ : 0.5 % to 0.3 % (relative)		
	HCHO/N ₂	1 µmol/mol to 8 µmol/mol	2.5 % to 1 % (relative)		
	N ₂ /Ar*	1 µmol/mol to 200 µmol/mol	10 % to 0.5 % (relative)		
	CO ₂ /air*	150 µmol/mol to 800 µmol/mol	0.02 µmol/mol ~ 0.08 µmol/mol		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Inorganic standard solution	Mg	0.8 g/kg to 1.2 g/kg	0.16 % (relative)	2019-11-01 *2021-09-29
	Al	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cu	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Zn	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Fe	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ni	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Sr	0.8 g/kg to 1.2 g/kg	0.08 % (relative)	
	V	0.8 g/kg to 1.2 g/kg	0.08 % (relative)	
	Mn	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Mo	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Co	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cd	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ga	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	In	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Pb	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Bi	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ba	0.8 g/kg to 1.2 g/kg	0.16 % (relative)	
	Cr	0.8 g/kg to 1.2 g/kg	0.06 % (relative)	
	Tl	0.8 g/kg to 1.2 g/kg	0.28 % (relative)	
	Sn	0.8 g/kg to 1.2 g/kg	0.14 % (relative)	
	Na	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	K	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Li	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Rb	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cs	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	As	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Sb	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Be	0.8 g/kg to 1.2 g/kg	0.18 % (relative)	
	Zr	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ag	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ca	0.8 g/kg to 1.2 g/kg	0.10 % (relative)	
	Hg	0.8 g/kg to 1.2 g/kg	0.10 % (relative)	
	Se	0.8 g/kg to 1.2 g/kg	0.12 % (relative)	
	B	0.8 g/kg to 1.2 g/kg	0.12 % (relative)	
	Te	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	Si	0.8 g/kg to 1.2 g/kg	0.28 % (relative)	
	La*	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	Ti*	0.8 g/kg to 1.2 g/kg	0.19 % (relative)	
	Y*	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	chloride ion	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
nitrite ion	0.8 g/kg to 1.2 g/kg	0.18 % (relative)		
nitrate ion	0.8 g/kg to 1.2 g/kg	0.15 % (relative)		
phosphate ion	0.8 g/kg to 1.2 g/kg	0.18 % (relative)		
bromide ion	0.8 g/kg to 1.2 g/kg	0.04 % (relative)		
iodide ion	0.8 g/kg to 1.2 g/kg	0.04 % (relative)		
sulfate ion	0.8 g/kg to 1.2 g/kg	0.12 % (relative)		
cyanide ion	0.8 g/kg to 1.2 g/kg	1.1 % (relative)		

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	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Inorganic standard solution	chlorate ion	0.8 g/kg to 1.2 g/kg	0.15 %(relative)	2019-11-01 *2021-09-29
	bromate ion	1.6 g/kg to 2.4 g/kg	0.14 %(relative)	
	ammonium ion*	0.8 g/kg to 1.2 g/kg	0.13 %(relative)	
	total organic carbon	0.8 g/kg to 1.2 g/kg	0.16 %(relative)	
Inorganic standard solution (Isotopic standard)	²⁰⁶ Pb/ ²⁰⁴ Pb (Isotopic ratio)	14 mol/mol to 22 mol/mol	0.025 % (relative)	
	²⁰⁷ Pb/ ²⁰⁴ Pb (Isotopic ratio)	13 mol/mol to 17 mol/mol	0.023 % (relative)	
	²⁰⁸ Pb/ ²⁰⁴ Pb (Isotopic ratio)	36 mol/mol to 40 mol/mol	0.023 % (relative)	
	²⁰⁸ Pb/ ²⁰⁶ Pb (Isotopic ratio)	1.8 mol/mol to 2.2 mol/mol	0.0062 % (relative)	
	²⁰⁷ Pb/ ²⁰⁶ Pb (Isotopic ratio)	0.8 mol/mol to 1.0 mol/mol	0.0042 % (relative)	
	²⁰⁴ Pb (Isotopic abundance)	0.012 mol/mol to 0.015 mol/mol	0.029 % (relative)	
	²⁰⁶ Pb (Isotopic abundance)	0.24 mol/mol to 0.28 mol/mol	0.0036 % (relative)	
	²⁰⁷ Pb (Isotopic abundance)	0.20 mol/mol to 0.23 mol/mol	0.0047 % (relative)	
	²⁰⁸ Pb (Isotopic abundance)	0.51 mol/mol to 0.53 mol/mol	0.0031 % (relative)	
	Pb (Molar mass)	207.1 g/mol to 207.3 g/mol	0.000014 % (relative)	
Inorganic standard solution (Isotopic standard)*	⁵⁶ Fe/ ⁵⁴ Fe (Isotopic ratio)	11 mol/mol ~ 20 mol/mol	0.041 % (relative)	
	⁵⁷ Fe/ ⁵⁴ Fe (Isotopic ratio)	0.25 mol/mol ~ 0.47 mol/mol	0.063 % (relative)	
	⁵⁸ Fe/ ⁵⁴ Fe (Isotopic ratio)	0.034 mol/mol ~ 0.063 mol/mol	0.11 % (relative)	
	⁵⁴ Fe (Isotopic abundance)	0.041 mol/mol ~ 0.076 mol/mol	0.038 % (relative)	
	⁵⁶ Fe (Isotopic abundance)	0.064 mol/mol ~ 1.2 mol/mol	0.0037 % (relative)	
	⁵⁷ Fe (Isotopic abundance)	0.015 mol/mol ~ 0.028 mol/mol	0.071 % (relative)	
	⁵⁸ Fe (Isotopic abundance)	0.0020 mol/mol ~ 0.0037 mol/mol	0.11 % (relative)	
	Fe (Molar mass)	55.29 g/mol ~ 56.4 g/mol	0.000068 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
pH standard solution	pH	1.18 to 10.51	0.003	2019-11-01 *2021-09-29
Electrolytic conductivity standard solution	Electrolytic conductivity	0.05 S/m ~ 15 S/m	0.15 % ~ 0.48 % (relative)	
		0.005 S/m ~ 0.05 S/m*	0.61 % (relative)	
High purity inorganic material (Potassium hydrogen phthalate)	acid	99.9 % to 100.1 % (mass fraction as potassium hydrogen phthalate)	0.012 % to 0.015 %	
High purity inorganic material (Potassium dichromate)	oxidant	99.9 % to 100.1 % (mass fraction as potassium dichromate)	0.010 % to 0.012 %	
High purity inorganic material (Arsenic(III) trioxide)	reductant	99.9 % to 100.1 % (mass fraction as arsenic(III) trioxide)	0.014 % to 0.020 %	
High purity inorganic material (Sodium carbonate)	base	99.9 % to 100.1 % (mass fraction as sodium carbonate)	0.01 % to 0.02 %	
High purity inorganic material (Potassium iodate)	oxidant	99.9 % to 100.1 % (mass fraction as potassium iodate)	0.014 % to 0.020 %	
High purity inorganic material (Sodium oxalate)	reductant	99.9 % to 100.1 % (mass fraction as sodium oxalate)	0.023 % to 0.025 %	
Heavy metals in polymer	Cd	5 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Cr	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Hg	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Pb	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Br	50 mg/kg to 10000 mg/kg	2.0 % to 5.0 % (relative)	
Minor elements in metals and alloys (lead-free solder)	Pb	100 mg/kg to 2000 mg/kg	0.8 % to 1.6 % (relative)	
	Ag	2.8 % to 3.2 % (mass fraction)	0.8 % to 1.6 % (relative)	
	Cu	0.3 % to 0.7 % (mass fraction)	0.5 % to 1.0 % (relative)	
High purity inorganic material (Sodium chloride)	Cl	99.9 % to 100.1 % (mass fraction as sodium chloride)	0.03 % to 0.05 %	
High purity inorganic material (Ammonium chloride)	NH ₃	99.9 % to 100.1 % (mass fraction as ammonium chloride)	0.034 % to 0.070 %	
	Cl	99.9 % to 100.1 % (mass fraction as ammonium chloride)	0.054 % to 0.080 %	
High purity inorganic material (Amidosulfuric acid)	acid	99.9 % to 100.1 % (mass fraction as amidosulfuric acid)	0.008 % to 0.012 %	
	N	99.9 % to 100.1 % (mass fraction as amidosulfuric acid)	0.025 % to 0.040 %	
Hydrochloric acid	acid	0.05 mol/kg to 2 mol/kg	0.016 % to 0.027 % (relative)	
High purity inorganic material (Tris(hydroxymethyl) aminomethane)	base	99.8 % to 100.2 % (mass fraction as tris(hydroxymethyl)aminomethane)	0.026 %	
High purity inorganic material (Calcium carbonate)	Ca	99.5 % to 100.5 % (mass fraction as calcium carbonate)	0.030 %	
High purity inorganic material (Zinc)	Zn	99.5 % to 100.0 % (mass fraction as zinc)	0.008 %	
	Zn (molar mass)	65.36 g/mol to 65.40 g/mol	0.0018 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	ethanol	0.998 mol/mol to 1 mol/mol	0.002 mol/mol to 0.0004 mol/mol	2019-11-01
	toluene	0.998 mol/mol to 1 mol/mol	0.003 mol/mol to 0.00006 mol/mol	
	1,2-dichloroethane	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0001 mol/mol	
	benzene	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00002 mol/mol	
	<i>o</i> -xylene	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00002 mol/mol	
	ethylbenzene	0.998 mol/mol to 1 mol/mol	0.0002 mol/mol to 0.002 mol/mol	
	cholesterol	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	<i>m</i> -xylene	0.997 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00015 mol/mol	
	diethyl phthalate	0.997 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	chloroform	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	<i>p</i> -xylene	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0001 mol/mol	
	bromoform	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	bromodichloromethane	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	bisphenol A	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0006 mol/mol	
	dibromochloromethane	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	<i>trans</i> -1,2-dichloroethylene	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	trichloroethylene	0.995 mol/mol to 1 mol/mol	0.002 mol/mol	
	tetrachloroethylene	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1,1-trichloroethane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0004 mol/mol	
	<i>cis</i> -1,2-dichloroethylene	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0007 mol/mol	
	<i>cis</i> -1,3-dichloropropene	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
1,4-dichlorobenzene	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0003 mol/mol		
styrene	0.99 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.0005 kg/kg		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	dichloromethane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	2019-11-01 *2021-09-29
	tetrachloromethane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1-dichloroethylene	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1,2-trichloroethane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	<i>trans</i> -1,3-dichloropropene	0.97 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
	1,2-dichloropropane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
	acrylonitrile	0.99 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.00005 kg/kg	
	acetaldehyde	0.99 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.003 kg/kg	
	17 β -estradiol	0.96 kg/kg to 1.00 kg/kg	0.005 kg/kg to 0.003 kg/kg	
	progesterone	0.98 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.001 kg/kg	
	testosterone	0.98 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.001 kg/kg	
	sulfur in organic materials (as sulfur)	0.2 kg/kg to 0.4 kg/kg	0.00006 kg/kg to 0.0004 kg/kg	
	dibutyl sulfide	0.995 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0001 kg/kg	
	1,4-dioxane	0.998 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0001 kg/kg	
	<i>tert</i> -butylmethylether	0.998 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0003 kg/kg	
	trichloroacetic acid*	0.995 kg/kg to 1 kg/kg	0.002 kg/kg	
	3,5-bis(trifluoromethyl)benzoic acid*	0.999 kg/kg to 1 kg/kg	0.0003 kg/kg to 0.0001 kg/kg	
	1,4-bis(trimethylsilyl)-2,3,5,6-tetrafluorobenzene*	0.999 kg/kg to 1 kg/kg	0.0003 kg/kg to 0.0001 kg/kg	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	di- <i>n</i> -butyl phthalate	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	2019-11-01
	di-2-ethylhexyl phthalate	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	di- <i>n</i> -propyl phthalate	0.98 kg/kg to 1 kg/kg	0.0006 kg/kg to 0.0002 kg/kg	
	di- <i>n</i> -pentyl phthalate	0.97 kg/kg to 1 kg/kg	0.006 kg/kg to 0.0002 kg/kg	
	di- <i>n</i> -hexyl phthalate	0.97 kg/kg to 1 kg/kg	0.006 kg/kg to 0.0002 kg/kg	
	dicyclohexyl phthalate	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	butyl benzyl phthalate	0.98 kg/kg to 1 kg/kg	0.0015 kg/kg to 0.0002 kg/kg	
	simazine	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	thiuram	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	thiobencarb	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	4- <i>n</i> -nonylphenol	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	
	4- <i>t</i> -octylphenol	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	4- <i>t</i> -butylphenol	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	4- <i>n</i> -heptylphenol	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	
	2,4-dichlorophenol	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	
Environmental matrix (fish oil)	<i>p,p'</i> -DDE	1 mg/kg to 10 mg/kg	0.014 mg/kg	
	<i>p,p'</i> -DDT	0.05 mg/kg to 0.5 mg/kg	0.0031 mg/kg	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Organic standard solution	<i>p,p'</i> -DDT/2,2,4-trimethylpentane	0.05 mg/kg to 20 mg/kg	7 % (relative)	2019-11-01 *2021-09-29
	<i>p,p'</i> -DDE/2,2,4-trimethylpentane	0.5 mg/kg to 20 mg/kg	2 % (relative)	
	γ -HCH/2,2,4-trimethylpentane	0.03 mg/kg to 20 mg/kg	1 % (relative)	
	<i>p,p'</i> -DDT + <i>p,p'</i> -DDE + <i>p,p'</i> -DDD + γ -HCH /2,2,4-trimethylpentane	<i>p,p'</i> -DDT : 0.05 mg/kg to 20 mg/kg <i>p,p'</i> -DDE : 0.5 mg/kg to 20 mg/kg <i>p,p'</i> -DDD : 0.5 mg/kg to 20 mg/kg γ -HCH : 0.03 mg/kg to 20 mg/kg	<i>p,p'</i> -DDT : 2 % to 1 % (relative) <i>p,p'</i> -DDE : 1 % to 0.5 % (relative) <i>p,p'</i> -DDD : 1% to 0.5 % (relative) γ -HCH : 2 % to 0.5 % (relative)	
	PCB28/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	1.7 % (relative)	
	PCB70/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	1.8 % (relative)	
	PCB105/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	2.4 % (relative)	
	PCB153/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	1.7 % (relative)	
	PCB170/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	2.0 % (relative)	
	PCB194/2,2,4-trimethylpentane	2 mg/kg to 50 mg/kg	1.6 % (relative)	
	PCB28+PCB70+PCB105 +PCB153+PCB170+PCB194 /2,2,4 -trimethylpentane	PCB28 : 2 mg/kg to 50 mg/kg PCB70 : 2 mg/kg to 50 mg/kg PCB105 : 2 mg/kg to 50 mg/kg PCB153 : 2 mg/kg to 50 mg/kg PCB170 : 2 mg/kg to 50 mg/kg PCB194 : 2 mg/kg to 50 mg/kg	PCB28 : 1.7 % (relative) PCB70 : 1.8 % (relative) PCB105 : 2.4 % (relative) PCB153 : 1.7 % (relative) PCB170 : 2.0 % (relative) PCB194 : 1.6 % (relative)	
	4-hydroxy-clomifene*	4-hydroxy-clomifene: 200 μ g/g to 300 μ g/g (<i>E</i>)-4-hydroxy-clomifene: 50 μ g/g to 200 μ g/g (<i>Z</i>)-4-hydroxy-clomifene: 50 μ g/g to 200 μ g/g	4-hydroxy-clomifene: 1.5 % (relative) (<i>E</i>)-4-hydroxy-clomifene: 1.6 % (relative) (<i>Z</i>)-4-hydroxy-clomifene: 1.6 % (relative)	
	3 β ,4 α -dihydroxy-5 α -androstane-17-one*	100 μ g/g to 170 μ g/g	1.4 % (relative)	
	sulfur in toluene (as sulfur)	0.5 mg/kg to 10000 mg/kg 10 μ g/kg to 500 μ g/kg	0.02 mg/kg to 10 mg/kg 5 μ g/kg to 20 μ g/kg	
	CRMs for thermal properties	cyclohexane (thermal analysis with thermal analyzer such as DSC)	phase transition temperature	
186 K to 280 K				
phase transition enthalpy			0.7 Jg ⁻¹ to 3 Jg ⁻¹	
30 Jg ⁻¹ to 90 Jg ⁻¹				
High purity organic materials	perfluorooctanoic acid	0.95 kg/kg to 1 kg/kg	0.006 kg/kg to 0.002 kg/kg	
	chloroalkanes*	0.98 kg/kg to 1 kg/kg	0.005 kg/kg to 0.001 kg/kg	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Organic standard solution	benzo[a]pyrene/ 2,2,4-trimethylpentane	10 mg/kg to 200 mg/kg	4 % to 1 % (relative)	2019-11-01
	potassium perfluorooctanesulfonate /methanol	5 mg/kg to 100 mg/kg	4 % to 1 % (relative)	
Standard solution (water in organic solvent)	water	0.01 g/kg to 10 g/kg	30 % to 0.1 % (relative)	
Food (pesticide in grain)	fenitrothion	0.1 mg/kg to 1 mg/kg	20 % to 5 % (relative)	
	etofenprox	0.1 mg/kg to 1 mg/kg	30 % to 5 % (relative)	
Food (pesticide in vegetable)	diazinon	0.1 mg/kg to 100 mg/kg	40 % to 5 % (relative)	
	fenitrothion	0.1 mg/kg to 100 mg/kg	20 % to 3 % (relative)	
	chlorpyrifos	1 mg/kg to 100 mg/kg	40 % to 5 % (relative)	
	permethrin	0.1 mg/kg to 100 mg/kg	30 % to 4 % (relative)	
	cypermethrin	0.1 mg/kg to 100 mg/kg	40 % to 5 % (relative)	
	etofenprox	1 mg/kg to 1000 mg/kg	20 % to 3 % (relative)	
Food (pesticide in fruits)	diazinon	0.1 mg/kg to 10 mg/kg	20 % to 2 % (relative)	
	fenitrothion	0.1 mg/kg to 10 mg/kg	20 % to 2 % (relative)	
	permethrin	0.1 mg/kg to 10 mg/kg	20 % to 2 % (relative)	
	cypermethrin	0.1 mg/kg to 10 mg/kg	30 % to 3 % (relative)	
Food (pesticide in beans)	diazinon	0.001 mg/kg to 0.1 mg/kg	20 % to 2 % (relative)	
	fenitrothion	0.001 mg/kg to 0.2 mg/kg	20 % to 2 % (relative)	
	chlorpyrifos	0.001 mg/kg to 0.3 mg/kg	30 % to 3 % (relative)	
	permethrin	0.002 mg/kg to 0.1 mg/kg	20 % to 2 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix (trace elements in sediment)	Sb	0.1 mg/kg to 3 mg/kg	10 % to 2 % (relative)	2019-11-01
	Cd	0.1 mg/kg to 3 mg/kg	10 % to 2 % (relative)	
	Cu	5 mg/kg to 500 mg/kg	5 % to 1 % (relative)	
	Pb	2 mg/kg to 250 mg/kg	5 % to 1 % (relative)	
	Ni	5 mg/kg to 50 mg/kg	5 % to 2 % (relative)	
	Zn	20 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	As	1 mg/kg to 50 mg/kg	20 % to 2 % (relative)	
	Co	1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Se	0.1 mg/kg to 5 mg/kg	20 % to 1 % (relative)	
	Cr	10 mg/kg to 500 mg/kg	10 % to 1 % (relative)	
	Hg	0.02 mg/kg to 5 mg/kg	15 % to 1 % (relative)	
	Ag	0.05 mg/kg to 2 mg/kg	4 % to 3 % (relative)	
	Mo	0.5 mg/kg to 20 mg/kg	7 % to 3 % (relative)	
	Sn	1 mg/kg to 50 mg/kg	5 % to 2 % (relative)	
Environmental (polychlorinated biphenyls in mineral oil)	PCB3	0.2 µg/kg to 10 mg/kg	50 % to 3 % (relative)	2019-11-01
	PCB8	0.2 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB28	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB52	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB101	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB118	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB138	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB153	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB180	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB194	0.1 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	PCB206	0.09 µg/kg to 10 mg/kg	50 % to 3 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix (fish tissue)	PCB28	1 µg/kg to 100 µg/kg	15 % to 2 % (relative)	2019-11-01 *2021-09-29
	PCB70	1 µg/kg to 10 µg/kg	15 % to 5 % (relative)	
	PCB105	1 µg/kg to 100 µg/kg	15 % to 2 % (relative)	
	PCB153	10 µg/kg to 200 µg/kg	10 % to 2 % (relative)	
	PCB170	0.1 µg/kg to 10 µg/kg	10 % to 4 % (relative)	
	<i>p,p'</i> -DDT	1 µg/kg to 10 µg/kg	10 % to 5 % (relative)	
	<i>p,p'</i> -DDE	10 µg/kg to 100 µg/kg	15 % to 5 % (relative)	
	<i>p,p'</i> -DDD	1 µg/kg to 10 µg/kg	10 % to 5 % (relative)	
	dieldrin	1 µg/kg to 10 µg/kg	10 % to 3 % (relative)	
	<i>trans</i> -nonachlor	1 µg/kg to 10 µg/kg	10 % to 4 % (relative)	
Environmental matrix (PAHs/dust)	fluorene	0.1 mg/kg to 100 mg/kg	40 % to 10 % (relative)	2019-11-01 *2021-09-29
	anthracene	0.1 mg/kg to 100 mg/kg	40 % to 10 % (relative)	
	fluoranthene	1 mg/kg to 1000 mg/kg	30 % to 10 % (relative)	
	pyrene	1 mg/kg to 1000 mg/kg	30 % to 10 % (relative)	
	benzo[<i>a</i>]anthracene	0.1 mg/kg to 100 mg/kg	20 % to 10 % (relative)	
	benzo[<i>b</i>]fluoranthene	0.1 mg/kg to 100 mg/kg	20 % to 10 % (relative)	
	benzo[<i>k</i>]fluoranthene	0.01 mg/kg to 10 mg/kg	20 % to 10 % (relative)	
	benzo[<i>a</i>]pyrene	0.1 mg/kg to 100 mg/kg	30 % to 10 % (relative)	
	perylene	0.01 mg/kg to 10 mg/kg	30 % to 10 % (relative)	
	indeno[1,2,3- <i>cd</i>]pyrene	0.1 mg/kg to 100 mg/kg	40 % to 10 % (relative)	
benzo[<i>ghi</i>]perylene	0.1 mg/kg to 100 mg/kg	20 % to 10 % (relative)		
Environmental matrix (toxic elements in tunnel dust)	Cr	5 mg/kg to 5 % (mass fraction)	10 % to 2 % (relative)	2019-11-01 *2021-09-29
	Ni	5 mg/kg to 2 % (mass fraction)	5 % to 2 % (relative)	
	Pb	2 mg/kg to 1 % (mass fraction)	5 % to 2 % (relative)	
	Mn	2 mg/kg to 1 % (mass fraction)	5 % to 2 % (relative)	
	Cd	0.1 mg/kg to 0.1 % (mass fraction)	10 % to 2 % (relative)	
Environmental matrix (polychlorinated biphenyls / pesticide in biological sample)	PCB118	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	2019-11-01 *2021-09-29
	PCB138	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	PCB153	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	PCB194	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	acetamiprid*	0.1 µg/kg to 2 µg/kg	50 % to 10 % (relative)	
	clothianidin*	0.1 µg/kg to 2 µg/kg	50 % to 10 % (relative)	
	thiacloprid*	0.1 µg/kg to 2 µg/kg	50 % to 10 % (relative)	
	thiamethoxam*	0.1 µg/kg to 2 µg/kg	50 % to 10 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental (polychlorinated biphenyls and organochlorine pesticides in sediment)	PCB3	0.1 µg/kg to 100 µg/kg	30 % to 5 % (relative)	2019-11-01
	PCB15	0.1 µg/kg to 100 µg/kg	20 % to 4 % (relative)	
	PCB28	1 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB31	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB70	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB101	1 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB105	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB138	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB153	1 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB170	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB180	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	PCB194	0.1 µg/kg to 100 µg/kg	20 % to 2 % (relative)	
	PCB206	0.1 µg/kg to 100 µg/kg	20 % to 2 % (relative)	
	PCB209	0.1 µg/kg to 100 µg/kg	20 % to 2 % (relative)	
	<i>p,p'</i> -DDT	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	<i>p,p'</i> -DDE	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	<i>p,p'</i> -DDD	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
	γ -HCH	0.5 µg/kg to 1000 µg/kg	20 % to 2 % (relative)	
Environmental (polycyclic aromatic hydrocarbons in sediment)	fluorene	1 µg/kg to 100 mg/kg	20 % to 10 % (relative)	2019-11-01
	phenanthrene	1 µg/kg to 100 mg/kg	20 % to 10 % (relative)	
	anthracene	1 µg/kg to 100 mg/kg	40 % to 10 % (relative)	
	fluoranthene	1 µg/kg to 100 mg/kg	20 % to 5 % (relative)	
	pyrene	1 µg/kg to 100 mg/kg	20 % to 10 % (relative)	
	benzo[<i>c</i>]phenanthrene	1 µg/kg to 100 mg/kg	10 % to 5 % (relative)	
	benz[<i>a</i>]anthracene	1 µg/kg to 100 mg/kg	20 % to 10 % (relative)	
	chrysene	1 µg/kg to 100 mg/kg	10 % to 5 % (relative)	
	benzo[<i>b</i>]fluoranthene	1 µg/kg to 100 mg/kg	40 % to 10 % (relative)	
	benzo[<i>j</i>]fluoranthene	1 µg/kg to 100 mg/kg	40 % to 10 % (relative)	
	benzo[<i>k</i>]fluoranthene	1 µg/kg to 100 mg/kg	30 % to 10 % (relative)	
	benzo[<i>a</i>]fluoranthene	1 µg/kg to 100 mg/kg	50 % to 10 % (relative)	
	benzo[<i>e</i>]pyrene	1 µg/kg to 100 mg/kg	30 % to 10 % (relative)	
	benzo[<i>a</i>]pyrene	1 µg/kg to 100 mg/kg	20 % to 5 % (relative)	
	perylene	100 µg/kg to 100 mg/kg	30 % to 10 % (relative)	
	indeno[1,2,3- <i>cd</i>]pyrene	1 µg/kg to 100 mg/kg	40 % to 10 % (relative)	
	benzo[<i>ghi</i>]perylene	1 µg/kg to 100 mg/kg	30 % to 10 % (relative)	
	dibenz[<i>a,h</i>]anthracene	1 µg/kg to 100 mg/kg	50 % to 10 % (relative)	
Fuel (components in bioethanol fuel)	water	100 mg/kg to 5000 mg/kg	2 % to 0.2 % (relative)	2019-11-01
	methanol	0.2 g/kg to 1 g/kg	10 % to 2 % (relative)	
	S	1 mg/kg to 5 mg/kg	3 % (relative)	
	Cu	0.0001 mg/kg to 500 mg/kg	10 % to 1 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Fuel (components in biodiesel fuel)	water	300 mg/kg to 1000 mg/kg	10 % to 5 % (relative)	2019-11-01
	Na	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	Mg	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	K	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	Ca	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	P	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	S	2 mg/kg to 50 mg/kg	10 % to 5 % (relative)	
Environmental matrix (river water and drinking water)	Al	1 µg/kg to 100 µg/kg	8 % to 1 % (relative)	
	Sb	0.001 µg/kg to 10 µg/kg	5 % to 1 % (relative)	
	As	0.05 µg/kg to 50 µg/kg	15 % to 1 % (relative)	
	Ba	0.5 µg/kg to 50 µg/kg	2 % to 1 % (relative)	
	B	1 µg/kg to 100 µg/kg	5 % to 1 % (relative)	
	Cd	0.001 µg/kg to 10 µg/kg	15 % to 2 % (relative)	
	Cr	0.05 µg/kg to 50 µg/kg	8 % to 1 % (relative)	
	Cu	0.05 µg/kg to 50 µg/kg	15 % to 1 % (relative)	
	Fe	0.1 µg/kg to 100 µg/kg	10 % to 1 % (relative)	
	Pb	0.001 µg/kg to 10 µg/kg	15 % to 1 % (relative)	
	Mn	0.01 µg/kg to 50 µg/kg	15 % to 1 % (relative)	
	Mo	0.05 µg/kg to 10 µg/kg	2 % to 1 % (relative)	
	Ni	0.01 µg/kg to 50 µg/kg	5 % to 1 % (relative)	
	Se	0.1 µg/kg to 50 µg/kg	10 % to 1 % (relative)	
	Zn	0.05 µg/kg to 50 µg/kg	10 % to 1 % (relative)	
	Na	1 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	K	0.2 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Mg	0.2 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Ca	1 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Rb	0.05 µg/kg to 100 µg/kg	5 % to 1 % (relative)	
Sr	0.05 µg/kg to 200 µg/kg	5 % to 1 % (relative)		
P	1 µg/kg to 100 µg/kg	5 % to 1 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix* (sea water)	Cr	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	2019-11-01 *2021-09-29
	Mn	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Fe	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Ni	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Cu	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Zn	1 µg/kg to 20000 µg/kg	20 % to 2 % (relative)	
	As	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Se	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Cd	0.3 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Pb	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	dissolved silica	0.03 mg/kg ~ 5 mg/kg	12 % to 1 % (relative)	
	nitrate ion	0.8 mg/kg ~ 3 mg/kg	3 % to 1 % (relative)	
	nitrite ion	0.01 mg/kg ~ 0.3 mg/kg	20 % to 5 % (relative)	
	phosphate ion	0.1 mg/kg ~ 0.3 mg/kg	5 % to 1 % (relative)	
Standard solution for chemical speciation	arsenobetaine	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	arsenate(As(V))	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	dimethylarsenic acid	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements and arsenic compounds in grains and beans)	Cr	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	2019-11-01
	Mn	0.1 mg/kg to 50 mg/kg	10 % to 1.5 % (relative)	
	Fe	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Ni	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Cu	0.1 mg/kg to 50 mg/kg	10 % to 1.5 % (relative)	
	Zn	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	As	0.005 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Rb	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Sr	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Cd	0.005 mg/kg to 5 mg/kg	7 % to 2 % (relative)	
	Mo	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Ba	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Pb	0.001 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Na	0.1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Mg	10 mg/kg to 5000 mg/kg	5 % to 1.2 % (relative)	
	K	100 mg/kg to 50000 mg/kg	5 % to 2 % (relative)	
	Ca	5 mg/kg to 5000 mg/kg	5 % to 1.5 % (relative)	
	P	100 mg/kg to 9000 mg/kg	10 % to 2 % (relative)	
	arsenite (As(III))	0.005 mg/kg to 50 mg/kg (as As)	8 % to 2 % (relative)	
	arsenate (As(V))	0.005 mg/kg to 50 mg/kg (as As)	8 % to 2 % (relative)	
dimethylarsenic acid	0.005 mg/kg to 50 mg/kg (as As)	8 % to 2 % (relative)		
Food (trace elements, arsenobetaine and methylmercury in fish, shellfish, and cephalopoda tissues)	Cr	0.2 mg/kg to 5 mg/kg	15 % to 3 % (relative)	
	Mn	0.1 mg/kg to 5 mg/kg	10 % to 1.5 % (relative)	
	Fe	1 mg/kg to 100 mg/kg	10 % to 3 % (relative)	
	Ni	0.2 mg/kg to 20 mg/kg	15 % to 3 % (relative)	
	Cu	0.2 mg/kg to 100 mg/kg	10 % to 1.5 % (relative)	
	Zn	1 mg/kg to 100 mg/kg	10 % to 1.5 % (relative)	
	As	1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements, arsenobetaine and methylmercury in fish, shellfish, and cephalopoda tissues)	Se	0.1 mg/kg to 10 mg/kg	15 % to 3 % (relative)	2019-11-01
	Hg	0.1 mg/kg to 10 mg/kg	10 % to 1 % (relative)	
	Na	1 mg/kg to 100 g/kg	10 % to 2 % (relative)	
	Mg	0.5 mg/kg to 100 g/kg	5 % to 1 % (relative)	
	K	1 mg/kg to 100 g/kg	10 % to 2 % (relative)	
	Ca	0.1 mg/kg to 100 g/kg	15 % to 3 % (relative)	
	arsenobetaine	1 mg/kg to 100 mg/kg (as As)	10 % to 2 % (relative)	
	methylmercury	0.1 mg/kg to 10 mg/kg (as Hg)	5 % to 1 % (relative)	
	Sr	0.02 mg/kg to 10 mg/kg	10 % to 1.2 % (relative)	
	Cd	0.01 mg/kg to 5 mg/kg	10 % to 1.5 % (relative)	
	P	1 g/kg to 100 g/kg	5 % to 2 % (relative)	
Food (trace elements and arsenic compounds in algae)	Na	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	2019-11-01
	K	1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Mg	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Ca	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Sr	0.1 g/kg to 50 g/kg	10 % to 1 % (relative)	
	P	0.01 g/kg to 50 g/kg	10 % to 1 % (relative)	
	Al	10 mg/kg to 1000 mg/kg	10 % to 3 % (relative)	
	As	0.5 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Ba	0.5 mg/kg to 100 mg/kg	10 % to 1 % (relative)	
	Cd	0.01 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Co	0.1 mg/kg to 10 mg/kg	10 % to 3 % (relative)	
	Cr	0.1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Cu	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Fe	10 mg/kg to 1000 mg/kg	10 % to 2 % (relative)	
	Mn	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Ni	0.1 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Pb	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
Zn	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements and arsenic compounds in algae)	arsenate (As(V))	0.5 mg/kg to 100 mg/kg (as As)	10 % to 2 % (relative)	2019-11-01 *2021-09-29
	arsenosugar-408* (arsenosugar-SO ₄)	0.1 mg/kg to 10 mg/kg (as As)	10 % to 2 % (relative)	
	arsenosugar-328* (arsenosugar-OH)	0.1 mg/kg to 10 mg/kg (as As)	10 % to 2 % (relative)	
	Hg	0.01 mg/kg to 0.1 mg/kg	10 % to 2 % (relative)	
Environmental matrix (trace elements in plant leaves)	Al	5 mg/kg to 5000 mg/kg	5 % to 1 % (relative)	
	B	1 mg/kg to 500 mg/kg	10 % to 2 % (relative)	
	Ba	1 mg/kg to 500 mg/kg	10 % to 1 % (relative)	
	Ca	200 mg/kg to 20000 mg/kg	5 % to 1 % (relative)	
	Cd	0.005 mg/kg to 50 mg/kg	10 % to 3 % (relative)	
	Co	0.01 mg/kg to 5 mg/kg	10 % to 2 % (relative)	
	Cu	0.5 mg/kg to 500 mg/kg	5 % to 1 % (relative)	
	Fe	0.5 mg/kg to 2000 mg/kg	10 % to 1 % (relative)	
	K	100 mg/kg to 30000 mg/kg	5 % to 1 % (relative)	
	Li	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Mg	20 mg/kg to 5000 mg/kg	5 % to 1 % (relative)	
	Mn	5 mg/kg to 10000 mg/kg	5 % to 1 % (relative)	
	Na	0.5 mg/kg to 100 mg/kg	20 % to 1 % (relative)	
	Ni	0.3 mg/kg to 100 mg/kg	10 % to 1 % (relative)	
	P	150 mg/kg to 10000 mg/kg	10 % to 1 % (relative)	
	Pb	0.01 mg/kg to 100 mg/kg	20 % to 3 % (relative)	
Rb	0.5 mg/kg to 200 mg/kg	10 % to 1 % (relative)		
Sr	0.5 mg/kg to 200 mg/kg	5 % to 1 % (relative)		
Zn	1 mg/kg to 500 mg/kg	10 % to 1 % (relative)		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements in milk and dairy products)	Ca	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	2019-11-01
	Fe	0.01 g/kg to 10 g/kg	10 % to 2 % (relative)	
	K	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Mg	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Na	0.01 g/kg to 50 g/kg	10 % to 1 % (relative)	
	P	0.1 g/kg to 50 g/kg	10 % to 1 % (relative)	
	Ba	0.05 mg/kg to 10 mg/kg	10 % to 1 % (relative)	
	Cu	0.5 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Mn	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Mo	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Rb	0.1 mg/kg to 500 mg/kg	10 % to 2 % (relative)	
	Sr	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
Zn	0.1 mg/kg to 1000 mg/kg	10 % to 2 % (relative)		
High purity organic materials	creatinine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	2019-11-01
	urea	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	hydrocortisone	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
	isoleucine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	phenylalanine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	valine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	proline	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	alanine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	leucine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	lysine monohydrochloride	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	arginine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	uric acid	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	triolein	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
	triglyceride	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	glycine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	glutamic acid	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	aspartic acid	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	tyrosine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	histidine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	serine	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
threonine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg		
methionine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg		
cystine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg		

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Organic standard solution	C-reactive protein	10 µmol/kg to 50 µmol/kg	2 % (relative)	2019-11-01 *2021-09-29
	total deoxyribonucleic acid (DNA) less than 650 bp	0.5 ng/µL to 200 ng/µL	5 % (relative)	
	C-peptide	0.08 g/L to 1 g/L	3 % (relative)	
	total C-peptide (mixture of C-peptide, deamidated C-peptide, and pyroglutamylated C-peptide)	0.08 g/L to 1 g/L	3 % (relative)	
	total ribonucleic acid (RNA) less than 1100 bases	10 ng/µL to 200 ng/µL	4 % (relative)	
	albumin	1 g/L to 100 g/L	1.6 % (relative)	
	okadaic acid	0.5 µg/mL to 10 µg/mL	4 % (relative)	
	dinophysistoxin-1	0.5 µg/mL to 10 µg/mL	1.6 % (relative)	
	monoclonal antibody*	0.5 g/L to 100 g/L	2.6 % (relative)	
Environmental matrix (food)	okadaic acid*	0.01 mg/kg to 10 mg/kg	10 % (relative)	
	dinophysistoxin-1*	0.01 mg/kg to 10 mg/kg	10 % (relative)	
Steroids in serum	cortisol (hydrocortisone)	15 µg/L to 250 µg/L	3 % to 2 % (relative)	
	aldosterone	100 pg/mL to 1000 pg/mL	5 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Molecular weight of polymer	polystyrene latex nanoparticle (light scattering intensity averaged diameter)	100 nm to 200 nm	1 % (relative)	2019-11-01 *2021-09-29
	low molar mass monodisperse polystyrene (number-average molecular mass)	8000 to 10000	1 % (relative)	
	poly (ethylene glycol) nonylphenyl ether (mass-average molecular mass, number-average molecular mass)	600 to 700	3 % (relative)	
	poly (ethylene glycol) nonylphenyl ether (mass fraction and mole fraction of each degree of polymerization)	1×10^{-4} to 1	5 % (relative)	
	polydisperse polystyrene (mass-average molar mass)	200,000 to 300,000	5 % (relative)	
	polydisperse polystyrene (number-average molar mass)	60,000 to 150,000 (polydispersity range is priority to others.)	5 % (relative)	
	polydisperse polystyrene (polydispersity)	2 to 3	5 % (relative)	
	polystyrene (mass-average molecular mass, number-average molecular mass, peak-average molecular mass)	400 to 2600	0.5 % (relative)	
	polystyrene (polydispersity)	1.05 to 1.20	1.5 % (relative)	
	polystyrene (mass fraction and mole fraction of each degree of polymerization)	2×10^{-5} to 1	2 % (relative)	
	poly (ethylene glycol) (mass-average molecular mass, number-average molecular mass)	350 to 1700	1 % (relative)	
	poly (ethylene glycol) (mass fraction and mole fraction of each degree of polymerization)	3×10^{-5} to 1	1 % (relative)	
	monodisperse polystyrene (mass-average molar mass)	1×10^5 to 1×10^6	5 % (relative)	
	poly (ethylene glycol) 23mer (mass fraction)	0.99 to 1	0.1 % (relative)	
Polymer reference material (polymer: organic compounds)	polybrominated diphenyl ether in plastics (polystyrene, polyvinyl chloride)	50 mg/kg to 1500 mg/kg	5 % to 2 % (relative)	
	plasticizers (dimethyl phthalate, diethyl phthalate, di- <i>n</i> -propyl phthalate, di- <i>i</i> -butyl phthalate, di- <i>n</i> -butyl phthalate, di- <i>n</i> -pentyl phthalate, di- <i>n</i> -hexyl phthalate, dicyclohexyl phthalate, di- <i>n</i> -heptyl phthalate, butyl benzyl phthalate, bis(2-ethylhexyl) phthalate, bis(<i>n</i> -octyl) phthalate) in plastics (polystyrene, polypropylene, polyvinyl chloride)	50 mg/kg to 1500 mg/kg	3 % to 1.5 % (relative)	
Polymer reference material (Raman shift) *	Raman shift	$300 \text{ cm}^{-1} \sim 3500 \text{ cm}^{-1}$	0.28 cm^{-1}	
Polymer (perfluoroalkyl substances in polymer)	perfluorooctanesulfonic acid and its salts	10 mg/kg to 100 mg/kg	20 % to 10 % (relative)	
Positron lifetime	positron lifetime in solids	0.1 ns to 20 ns	2 % (relative)	
Steel	chromium	mass fraction 20 % to 40 %	0.1 % (relative)	
	nickel	mass fraction 15 % to 70 %	0.1 % (relative)	
	iron	mass fraction 5 % to 70 %	0.1 % (relative)	
	carbon	mass fraction 0.05 % to 1.0 %	10.0 % to 1.0 % (relative)	

Subcategory	Calibration and Measurement Capabilities			Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Thin film	film thickness	each layer 1 nm to 200 nm (total film thickness 3 nm to 200 nm or less)	0.27 % to 0.06 % (relative)	2019-11-01
	arsenic	0.01 g/kg to 1.6 g/kg	2.4 % (relative)	
Thick film	film thickness	70 nm to 6000 nm	1.2 % (relative)	
	gold	area density 1.3 $\mu\text{g}/\text{mm}^2$ to 5.8 $\mu\text{g}/\text{mm}^2$	0.3 % (relative)	
	nickel	area density 4 $\mu\text{g}/\text{mm}^2$ to 52 $\mu\text{g}/\text{mm}^2$	0.3 % (relative)	
	copper	area density 4 $\mu\text{g}/\text{mm}^2$ to 52 $\mu\text{g}/\text{mm}^2$	0.4 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Instrument or Artefact	Measurand Level or Range	Measurement Conditions / Independent Variable (Optional)	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High-purity organic reference materials	Purity determination by nuclear magnetic resonance spectroscopy and freezing-point depression method	0.980 kg/kg to 1.000 kg/kg		0.002 kg/kg	2019-11-1
	Purity determination by nuclear magnetic resonance spectroscopy (including purity verification by gas chromatography)	0.900 kg/kg to 1.000 kg/kg		0.002 kg/kg	
	Purity determination by nuclear magnetic resonance spectroscopy (including purity verification by high-performance liquid chromatography)	0.900 kg/kg to 1.000 kg/kg		0.002 kg/kg	
	Purity determination by freezing-point depression method (including purity verification by gas chromatography)	0.980 kg/kg to 1.000 kg/kg		0.002 kg/kg	
	Purity determination by freezing-point depression method (including purity verification by high-performance liquid chromatography)	0.980 kg/kg to 1.000 kg/kg		0.002 kg/kg	
	Purity determination by nuclear magnetic resonance spectroscopy and titrimetry	0.600 kg/kg to 1.000 kg/kg	Total content of organic compounds except analyte shall be 0.1 kg/kg or less	0.002 kg/kg	

(End of Attachment)