

Name of accreditation program	ASNITE Accreditation Program
Accreditation No. and additional information	ASNITE 0001 R
Date of initial accreditation	2003-10-09
Date of latest accreditation	2017-01-20
Name and address of Accredited organization	National Institute of Advanced Industrial Science and Technology National Metrology Institute of Japan 1-1-1 Umezono, Tsukuba, Ibaraki 305-8563 JAPAN JCN 7010005005425
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Remarks	This accredited organization meets the requirements of ISO Guide 34 : 2009 as a reference material producer.

* JCN : Japan Corporate Number

Application Category: Chemical Reference Material
RM/CRM: CRM

Subcategory	Measurand		Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Standard gases	high purity nitrogen monoxide (NO)		0.99 mol/mol to 1 mol/mol	10 mmol/mol to 0.1 mmol/mol	2017-01-20
	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	5 % to 2.5 % (relative)	
		O ₂	11 µmol/mol to 5000 µmol/mol	5 % 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	10 % to 0.5 % (relative)	
		C ₃ H ₈	2 µmol/mol to 15000 µmol/mol	10 % to 0.5 % (relative)	
	high purity sulfur dioxide (SO ₂)		0.99 mol/mol to 1 mol/mol	10 mmol/mol to 0.1 mmol/mol	
	impurities in SO ₂	CO ₂	11 µmol/mol to 15000 µmol/mol	5 % to 0.5 % (relative)	
		N ₂	11 µmol/mol to 15000 µmol/mol	5 % to 0.5 % (relative)	
		O ₂	11 µmol/mol to 5000 µmol/mol	5 % to 0.5 % (relative)	
		CH ₄	2 µmol/mol to 11000 µmol/mol	10 % to 0.5 % (relative)	
		C ₃ H ₈	2 µmol/mol to 15000 µmol/mol	10 % 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	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		CO ₂	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		C ₂ H ₆	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
H ₂		0.1 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		0.5 µmol/mol to 100 µmol/mol	70 % to 30 % (relative)		

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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	2017-01-20
	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	1 μmol/mol to 100 μmol/mol	20 % to 2 % (relative)	
		butane	1 μmol/mol to 100 μmol/mol	20 % to 2 % (relative)	
		isobutane	1 μmol/mol to 100 μmol/mol	20 % to 2 % (relative)	
		H ₂ O	0.5 μmol/mol to 100 μmol/mol	70 % to 30 % (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	30 % to 0.5 % (relative)	
		O ₂	0.1 μmol/mol to 100 μmol/mol	30 % to 0.5 % (relative)	
		H ₂	2 μmol/mol to 100 μmol/mol	30 % to 0.5 % (relative)	
		He	2 μmol/mol to 100 μmol/mol	30 % to 0.5 % (relative)	
		CH ₄	0.01 μmol/mol to 1 μmol/mol	90 % to 1 % (relative)	
		C ₃ H ₈	0.01 μmol/mol to 1 μmol/mol	90 % to 1 % (relative)	
		CO	0.1 μmol/mol to 100 μmol/mol	30 % to 0.5 % (relative)	
H ₂ O		0.5 μmol/mol to 100 μmol/mol	70 % to 30 % (relative)		

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Standard gases	high purity carbon monoxide (CO)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.02 mmol/mol	2017-01-20
	impurities in CO	N ₂	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		O ₂	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		H ₂	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		He	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		CH ₄	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		CO ₂	5 µmol/mol to 100 µmol/mol	30 % to 0.5 % (relative)	
		H ₂ O	0.5 µmol/mol to 100 µmol/mol	70 % to 30 % (relative)	
	high purity oxygen (O ₂)		0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.0009 mmol/mol	
	impurities in O ₂	Ar	0.5 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		N ₂	0.5 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 100 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	5 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		O ₂	5 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		Ar	5 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		5 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 100 µmol/mol	70 % to 30 % (relative)		

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Standard gases	high purity 1,3-butadiene	0.98 mol/mol to 1 mol/mol	20 mmol/mol to 1 mmol/mol	2017-01-20	
	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 1500 µmol/mol		60 % to 30 % (relative)
		H ₂ O	0.5 µmol/mol to 100 µmol/mol		70 % to 30 % (relative)

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Standard gases	O ₂ /N ₂	5 µmol/mol to 5 mmol/mol	1 % to 0.1 % (relative)	2017-01-20
	O ₂ /He	11 µmol/mol to 0.015 mol/mol	5 % to 0.5 % (relative)	
	N ₂ /He	11 µmol/mol to 0.015 mol/mol	5 % to 0.5 % (relative)	
	CO ₂ /N ₂ or CO ₂ /air	11 µmol/mol to 99 µmol/mol	10 % to 1 % (relative)	
	CO ₂ /N ₂ or CO ₂ /air	99 µmol/mol to 349 µmol/mol	1 % to 1 % (relative)	
	CO ₂ /N ₂ or CO ₂ /air	350 µmol/mol to 0.07 mol/mol	0.2 % to 0.1 % (relative)	
	CO ₂ /N ₂	0.16 mol/mol to 0.3 mol/mol	0.1 % to 0.1 % (relative)	
	CO ₂ /He	11 µmol/mol to 0.015 mol/mol	5 % to 0.5 % (relative)	
	CO/N ₂	1 µmol/mol to 3 µmol/mol	0.25 % to 0.25 % (relative)	
	CO/air	1 µmol/mol to 100 µmol/mol	0.25 % to 0.25 % (relative)	
	CO/air	50 nmol/mol to 1 µmol/mol	5 % to 0.25 % (relative)	
	NO ₂ /air	10 µmol/mol to 0.01 mol/mol	10 % to 2.5 % (relative)	
	N ₂ O/N ₂	7.5 µmol/mol to 0.02 mol/mol	1 % to 0.5 % (relative)	
	N ₂ O/Air	20 µmol/mol to 300 µmol/mol	0.1 % to 0.1 % (relative)	
	N ₂ O/Air	200 nmol/mol to 20 µmol/mol	0.2 % to 0.1 % (relative)	
	N ₂ O/He	7.5 µmol/mol to 0.011 mol/mol	10 % to 0.5 % (relative)	
	CH ₄ /N ₂	1 µmol/mol to 0.011 mol/mol	1 % to 0.1 % (relative)	
	CH ₄ /Air	1700 nmol/mol to 2500 nmol/mol	1.3 nmol/mol to 1.3 nmol/mol	
	CH ₄ /He	2 µmol/mol to 0.011 mol/mol	10 % to 0.5 % (relative)	
	C ₃ H ₈ /N ₂	0.015 mol/mol to 0.1 mol/mol	0.1 % to 0.1 % (relative)	
	C ₃ H ₈ /N ₂	2 µmol/mol to 150 µmol/mol	10 % to 1 % (relative)	
	C ₃ H ₈ /He	2 µmol/mol to 0.015 mol/mol	10 % to 0.5 % (relative)	
	CH ₄ + C ₃ H ₈ /N ₂ and CH ₄ + C ₃ H ₈ /He	CH ₄ : 2 µmol/mol to 0.015 mol/mol C ₃ H ₈ : 2 µmol/mol to 0.015 mol/mol	CH ₄ : 10 % to 0.5 % (relative) C ₃ H ₈ : 10 % to 0.5 % (relative)	
	O ₂ + N ₂ O + CO ₂ /N ₂	O ₂ : 11 µmol/mol to 0.015 mol/mol N ₂ O: 7.5 µmol/mol to 0.01 mol/mol CO ₂ : 11 µmol/mol to 0.015 mol/mol	O ₂ : 5 % to 0.5 % (relative) N ₂ O: 10 % to 0.5 % (relative) CO ₂ : 5 % to 0.5 % (relative)	
	O ₂ + N ₂ + N ₂ O + CO ₂ /He	O ₂ : 11 µmol/mol to 0.015 mol/mol N ₂ : 11 µmol/mol to 0.015 mol/mol N ₂ O: 7.5 µmol/mol to 0.015 mol/mol CO ₂ : 7.5 µmol/mol to 0.015 mol/mol	O ₂ : 5 % to 0.5 % (relative) N ₂ : 5 % to 0.5 % (relative) N ₂ O: 10 % to 0.5 % (relative) CO ₂ : 5 % to 0.5 % (relative)	

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Standard gases	CF ₄ /N ₂	10 µmol/mol to 0.1 mol/mol	1.5 % to 0.5 % (relative)	2017-01-20
	SF ₆ /N ₂	10 µmol/mol to 0.1 mol/mol	1.5 % to 0.5 % (relative)	
	C ₂ F ₆ /N ₂	10 µmol/mol to 0.1 mol/mol	1.5 % to 0.5 % (relative)	
	CF ₄ +SF ₆ /N ₂	CF ₄ : 10 µmol/mol to 0.1 mol/mol SF ₆ : 10 µmol/mol to 0.1 mol/mol	CF ₄ : 1.5 % to 0.5 % (relative) SF ₆ : 1.5 % to 0.5 % (relative)	
	CF ₄ +C ₂ F ₆ /N ₂	CF ₄ : 10 µmol/mol to 0.1 mol/mol C ₂ F ₆ : 10 µmol/mol to 0.1 mol/mol	CF ₄ : 1.5 % to 0.5 % (relative) C ₂ F ₆ : 1.5 % to 0.5 % (relative)	
	CF ₄ +C ₂ F ₆ +SF ₆ /N ₂	CF ₄ : 10 µmol/mol to 0.1 mol/mol C ₂ F ₆ : 10 µmol/mol to 0.1 mol/mol SF ₆ : 10 µmol/mol to 0.1 mol/mol	CF ₄ : 1.5 % to 0.5 % (relative) C ₂ F ₆ : 1.5 % to 0.5 % (relative) SF ₆ : 1.5 % to 0.5 % (relative)	
	hexane/N ₂ , hexane/CH ₄	20 µmol/mol to 500 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 to 0.2 mmol/mol CO ₂ : 0.1 mmol/mol to 0.1 mmol/mol C ₃ H ₈ : 0.3 mmol/mol to 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 ₄ : 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)	

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Inorganic standard solution	Mg	0.8 g/kg to 1.2 g/kg	0.16 % (relative)	2017-01-20
	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)	
	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)		
chlorate ion	0.8 g/kg to 1.2 g/kg	0.15 % (relative)		
bromate ion	1.6 g/kg to 2.4 g/kg	0.14 % (relative)		
total organic carbon	0.8 g/kg to 1.2 g/kg	0.16 % (relative)		

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Inorganic standard solution (Isotopic standard)	$^{206}\text{Pb}/^{204}\text{Pb}$ (Isotopic rate)	14 mol/mol to 22 mol/mol	0.025 % (relative)	2017-01-20
	$^{207}\text{Pb}/^{204}\text{Pb}$ (Isotopic rate)	13 mol/mol to 17 mol/mol	0.023 % (relative)	
	$^{208}\text{Pb}/^{204}\text{Pb}$ (Isotopic rate)	36 mol/mol to 40 mol/mol	0.023 % (relative)	
	$^{208}\text{Pb}/^{206}\text{Pb}$ (Isotopic rate)	1.8 mol/mol to 2.2 mol/mol	0.0062 % (relative)	
	$^{207}\text{Pb}/^{206}\text{Pb}$ (Isotopic rate)	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)	

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pH standard solution	pH	1.18 to 10.51	0.003	2017-01-20
Electrolytic conductivity satandard solution	Eiectrolytic conductivity	0.05 S/m to 15 S/m	0.15 % to 0.48 % (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(hydroxylmethyl)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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
High purity organic materials	ethanol	0.998 mol/mol to 1 mol/mol	0.002 mol/mol to 0.0004 mol/mol	2017-01-20
	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-trichloroethylene	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 0.001 kg/kg	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
High purity organic materials	dichloromethane	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	2017-01-20
	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 0.0008 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		

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
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	2017-01-20
	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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Organic standard solution	<i>p,p'</i> -DDT/2,2,4-trimethylpentane	0.05 mg/kg to 20 mg/kg	7 % (relative)	2017-01-20
	<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)	
	sulfur in toluene (as sulfur)	0.5 mg/kg to 10000 mg/kg	0.02 mg/kg to 10 mg/kg	
		10 μ g/kg to 500 μ g/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 30 Jg ⁻¹ to 90 Jg ⁻¹			0.7 Jg ⁻¹ to 3 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	
Organic standard solution	benzo[<i>a</i>]pyrene/ 2,2,4-trimethylpentane	10 mg/kg to 200 mg/kg	4 % to 1 % (relative)	
	potassium perfluorooctanesulfonate /methanol	5 mg/kg to 100 mg/kg	4 % to 1 % (relative)	
Standard solution (water in organic solvent)	water	0.1 g/kg to 10 g/kg	3 % to 0.1 % (relative)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Food (pesticide in grain)	fenitrothion	0.1 mg/kg to 1 mg/kg	20 % to 5 % (relative)	2017-01-20
	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 100 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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Environmental matrix (trace elements in sediment)	Sb	0.1 mg/kg to 3 mg/kg	10 % to 2 % (relative)	
	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 matrix (organotins in marine sediment)	tri- <i>n</i> -butyltin	1 µg/kg to 2000 µg/kg (as Sn)	15 % to 3 % (relative)	2017-01-20
	di- <i>n</i> -butyltin	1 µg/kg to 2000 µg/kg (as Sn)	15 % to 3 % (relative)	
	mono- <i>n</i> -butyltin	1 µg/kg to 2000 µg/kg (as Sn)	15 % to 3 % (relative)	
	triphenyltin	1 µg/kg to 2000 µg/kg (as Sn)	20 % to 3 % (relative)	
	diphenyltin	1 µg/kg to 2000 µg/kg (as Sn)	20 % to 3 % (relative)	
Environmental (polychlorinated biphenyls in mineral oil)	PCB3	0.2 µg/kg to 10 mg/kg	50 % to 3 % (relative)	
	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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Environmental matrix (fish tissue)	PCB28	1 µg/kg to 100 µg/kg	15 % to 2 % (relative)	2017-01-20
	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)	2017-01-20
	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)	2017-01-20
	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 (polychlorinated biphenyls in serum)	PCB118	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	2017-01-20
	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)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Environmental (polychlorinated biphenyls and organochlorine pesticides in sediment)	PCB3	0.1 µg/kg to 100 µg/kg	30 % to 5 % (relative)	2017-01-20
	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)	
	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)	
	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)	
Fuel (components in biodiesel fuel)	water	300 mg/kg to 1000 mg/kg	10 % to 5 % (relative)	
	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)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Environmental matrix (river water and drinking water)	Al	1 µg/kg to 100 µg/kg	8 % to 1 % (relative)	2017-01-20
	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)		
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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Food (trace elements and arsenic compounds in grains and beans)	Cr	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	2017-01-20
	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)	
	Se	0.1 mg/kg to 10 mg/kg	15 % to 3 % (relative)	
	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)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Food (trace elements and arsenic compounds in algae)	Na	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	2017-01-20
	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)	
	arsenate (As(V)) (as As)	0.5 mg/kg to 100 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	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Food (trace elements in milk and dairy products)	Ca	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	2017-01-20
	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)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
High purity organic materials	creatinine	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	2017-01-20
	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		
Organic standard solution	C-reactive protein	10 μ mol/kg to 50 μ mol/kg	2 % (relative)	
	total deoxyribonucleic acid (DNA) less than 650 bp	0.5 ng/ μ L to 200 ng/ μ L	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/ μ L to 200 ng/ μ L	4 % (relative)	
	albumin	1 g/L to 100 g/L	1.6 % (relative)	
	okadaic acid	0.5 μ g/mL to 10 μ g/mL	4 % (relative)	
	dinophysistoxin-1	0.5 μ g/mL to 10 μ g/mL	1.6% (relative)	
Steroids in serum	cortisol (hydrocortisone)	15 μ g/L to 250 μ g/L	3 % to 2 % (relative)	
	aldosterone	100 pg/mL to 1000 pg/mL	5 % (relative)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Molecular weight of polymer	polystyrene latex nanoparticle (light scattering intensity averaged diameter)	100 nm to 200 nm	5 % (relative)	2013-04-26
	low molar mass monodisperse polystyrene (Number-average molecular mass)	8000 to 10000	3 % (relative)	
	poly (ethylene glycol) nonylphenyl ether (mass-average molecular mass, number-average molecular mass)	600 to 700	4 % to 5 % (relative)	
	poly (ethylene glycol) nonylphenyl Ether (mass fraction and mole fraction of each degree of polymerization)	1×10^{-4} to 0.04 0.04 to 1	90 % to 10 % (relative) 20 % to 5 % (relative)	
	polydisperse polystyrene (mass-average molar mass)	200,000 to 300,000	10 % (relative)	
	polydisperse polystyrene (number-average molar mass)	60,000 to 150,000 (polydispersity range is priority to others.)	10 % (relative)	
	polydisperse polystyrene (polydispersity)	2 to 3	10 % (relative)	
	polycarbonate (mass-average molar mass)	10,000 g/mol to 200,000 g/mol	15 % (relative)	
	polystyrene (mass-average molecular mass, number-average molecular mass, peak-average molecular mass)	400 to 2600	2 % to 1 % (relative)	
	polystyrene (polydispersity)	1.05 to 1.20	1.5 % to 3 % (relative)	
	polystyrene (mass fraction and mole fraction of each degree of polymerization)	8×10^{-5} to 0.03 0.03 to 1	40 % to 3 % (relative) 4 % to 2 % (relative)	
	poly (ethylene glycol) (mass-average molecular mass, number-average molecular mass)	350 to 1700	1.5 % to 5 % (relative)	
poly (ethylene glycol) (mass fraction and mole fraction of each degree of polymerization)	3×10^{-5} to 0.04 0.04 to 1	170 % to 3 % (relative) 25 % to 1 % (relative)		
Polymer reference material (polymer: organic compounds)	polybrominated diphenyl ether in plastics (polystyrene, polyvinyl chloride)	mass fraction 50 mg/kg to 1500 mg/kg	5 % to 2 % (relative)	2017-01-20
	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)	mass fraction 50 mg/kg to 1500 mg/kg	3 % to 1.5 % (relative)	
Polymer (perfluoroalkyl substances in polymer)	perfluorooctanesulfonic acid and its salts	10 mg/kg to 100 mg/kg	20 % to 10 % (relative)	

Subcategory	Measurand	Measurement Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	Date of Accreditation
Ion implantation reference material	mass of arsenic per unit area	30 ng/cm ² to 3000 ng/cm ²	2.4 % (relative)	2013-04-26
Reference material for 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)	
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)	