International Accreditation Japan

Information on Accredited Calibration Laboratory

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Accreditation Identification:	ASNITE 0001 Calibration-Chem
Name of Calibration Laboratory :	National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology
Location of Calibration Laboratory:	1-1-1 Umezono, Tsukuba-shi, Ibaraki 305-8563, JAPAN
Name of Legal Entity:	National Institute of Advanced Industrial Science and Technology
Conformance Accreditation Standard:	ISO/IEC 17025:2017
Expiry Date of Accreditation :	2029-10-31

Subcategory	Calibration and Measurement Capabilities					Date of Accreditation
	Material		Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
	Matrix	Analytical component				
High purity gases	CH_4	CH_4	・Purity analysis	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.0005 mmol/mol	2024-11-01
		N_2	・GC-PID ・GC-TCD	0.1 μmol/mol to 100 μmol/mol	80 % to 2 % (relative)	
		O_2	・GC-PID ・GC-TCD	0.1 μmol/mol to 100 μmol/mol	60 % to 2 % (relative)	
		Ar	・GC-PID ・GC-TCD	0.1 μmol/mol to 100 μmol/mol	40 % to 2 % (relative)	
		CO	・GC-PID ・GC-TCD	0.4 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		CO_2	・GC-PID ・GC-TCD	0.4 μmol/mol to 100 μmol/mol	30 % to 2 % (relative)	
		C_2H_6	・GC-FID	0.02 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		H_2	・GC-PID ・GC-TCD	0.7 μmol/mol to 100 μmol/mol	30 % to 2 % (relative)	
		hexane	・GC-FID	0.02 μmol/mol to 20 μmol/mol	100 % to 0.6 % (relative)	
		H_2O	・Chilled mirror dew point hygrometer	0.1 μmol/mol to 130 μmol/mol	70 % to 5 % (relative)	
	C_3H_8	C_3H_8	・Purity analysis	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.03 mmol/mol	
		N_2	・GC-TCD	3 μmol/mol to 100 μmol/mol	80 % to 2 % (relative)	
		O_2	・GC-TCD	2 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		Ar	・GC-TCD	2 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		CO_2	・GC-TCD	1 μmol/mol to 100 μmol/mol	100 % to 6 % (relative)	
		C_2H_6	・GC-FID	3.8 μmol/mol to 100 μmol/mol	100 % to 7 % (relative)	
		propylene	・GC-FID	17 μmol/mol to 100 μmol/mol	30 % to 2 % (relative)	
		butane	・GC-FID	2 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		isobutane	・GC-FID	2 μmol/mol to 100 μmol/mol	100 % to 2 % (relative)	
		H_2O	・Capacitive hygrometer	53 μmol/mol to 1000 μmol/mol	70 % to 53 % (relative)	
	CO_2	CO_2	・Purity analysis	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.006 mmol/mol	
		N_2	・GC-TCD	0.9 μmol/mol to 100 μmol/mol	100 % to 0.9 % (relative)	
		O_2	・GC-TCD	0.4 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		H_2	・GC-TCD	0.8 μmol/mol to 100 μmol/mol	100 % to 4 % (relative)	
		He	・GC-TCD	0.8 μmol/mol to 100 μmol/mol	100 % to 4 % (relative)	
		CH_4	・GC-FID	0.01 μmol/mol to 1 μmol/mol	100 % to 1 % (relative)	
		CO	・GC-FID	0.05 μmol/mol to 100 μmol/mol	100 % to 0.7 % (relative)	
		H_2O	・Capacitive hygrometer	0.9 μmol/mol to 130 μmol/mol	100 % to 30 % (relative)	

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	Matrix	Analytical component				
High purity gases	CO	CO	・Purity analysis	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.02 mmol/mol	2024-11-01
		N_2	・GC-TCD	1.5 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		O_2	・GC-TCD	2.1 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		H_2	・GC-TCD	0.9 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		He	・GC-TCD	0.4 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		CH_4	・GC-TCD	1.5 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		CO_2	・GC-TCD	0.3 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
		H_2O	・Capacitive hygrometer	0.36 μmol/mol to 100 μmol/mol	100 % to 0.5 % (relative)	
	O_2	O_2	・Purity analysis ・Magnetopneumatic oxygen analyzer	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.05 mmol/mol	
		Ar	・GC-TCD	20 μmol/mol ～ 1000 μmol/mol	100 % ～ 4 % (relative)	
		N_2	・GC-TCD	2 μmol/mol ～ 100 μmol/mol	100 % ～ 4 % (relative)	
		CH_4	・FT-IR	0.25 μmol/mol ～ 10 μmol/mol	100 % ～ 2.5 % (relative)	
		CO	・FT-IR	0.25 μmol/mol ～ 10 μmol/mol	100 % ～ 2.5 % (relative)	
		CO_2	・FT-IR	0.25 μmol/mol ～ 10 μmol/mol	100 % ～ 2.5 % (relative)	
		H_2O	・Chilled mirror dew point hygrometer ・Capacitive hygrometer	5 μmol/mol ～ 130 μmol/mol	100 % ～ 30 % (relative)	
	vinyl chloride	vinyl chloride	・Purity analysis	0.99 mol/mol to 1 mol/mol	5 mmol/mol to 0.01 mmol/mol	
		N_2	・GC-TCD	3.9 μmol/mol to 100 μmol/mol	30 % to 14 % (relative)	
		O_2	・GC-TCD	1.1 μmol/mol to 100 μmol/mol	100 % to 53 % (relative)	
		Ar	・GC-TCD	1 μmol/mol to 100 μmol/mol	30 % to 2 % (relative)	
		CO_2	・GC-TCD	2 μmol/mol to 100 μmol/mol	100 % to 3.7 % (relative)	
		methyl chloride	・GC-FID	51.3 μmol/mol to 200 μmol/mol	30 % to 7 % (relative)	
		ethyl chloride	・GC-FID	5 μmol/mol to 100 μmol/mol	100 % to 5.8 % (relative)	
		H_2O	・Capacitive hygrometer	187.1 μmol/mol to 1000 μmol/mol	70 % to 35 % (relative)	

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	Material		Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
	Matrix	Analytical component				
High purity gases	1,3-butadiene	1,3-butadiene	・Purity analysis	0.98 mol/mol to 1 mol/mol	20 mmol/mol to 1 mmol/mol	2024-11-01
		N_2	・GC-TCD	17 µmol/mol to 1000 µmol/mol	30 % to 7.4 % (relative)	
		O_2	・GC-TCD	5 µmol/mol to 1000 µmol/mol	80 % to 3.1 % (relative)	
		Ar	・GC-TCD	5 µmol/mol to 1000 µmol/mol	100 % to 3.1 % (relative)	
		CO_2	・GC-TCD	8 µmol/mol to 1000 µmol/mol	100 % to 3.1 % (relative)	
		butane	・GC-FID	5 µmol/mol to 500 µmol/mol	20 % to 2 % (relative)	
		isobutane	・GC-FID	5 µmol/mol to 500 µmol/mol	100 % to 2 % (relative)	
		1-butene	・GC-FID	13 µmol/mol to 1000 µmol/mol	100 % to 2 % (relative)	
		trans -2-butene	・GC-FID	1 µmol/mol to 7000 µmol/mol	20 % to 2 % (relative)	
		cis -2-butene	・GC-FID	1 µmol/mol to 8000 µmol/mol	20 % to 2 % (relative)	
		isobutylene	・GC-FID	1 µmol/mol to 1000 µmol/mol	20 % to 2 % (relative)	
		4-vinyl-1-cyclohexene (1,3-butadiene dimer)	・GC-FID	1 µmol/mol to 2150 µmol/mol	60 % to 30 % (relative)	
		H_2O	・Capacitive hygrometer	93 µmol/mol to 1000 µmol/mol	70 % to 50 % (relative)	
	ethane	ethane	・Purity analysis	0.99 mol/mol to 1 mol/mol	1 mmol/mol to 0.001 mmol/mol	
		N_2	・GC-TCD	1 µmol/mol to 100 µmol/mol	80 % to 2 % (relative)	
		O_2	・GC-TCD	0.5 µmol/mol to 100 µmol/mol	100 % to 2 % (relative)	
		CO_2	・GC-TCD	6 µmol/mol to 100 µmol/mol	100 % to 6 % (relative)	
		methane	・GC-FID	0.5 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		ethylene	・GC-FID	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propane	・GC-FID	0.13 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		propylene	・GC-FID	0.1 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		butane	・GC-FID	0.79 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		H_2O	・Capacitive hygrometer	67 µmol/mol to 1000 µmol/mol	70 % to 20 % (relative)	
	isobutane	isobutane	・Purity analysis	0.99 mol/mol to 1 mol/mol	2 mmol/mol to 0.005 mmol/mol	
		N_2	・GC-TCD	1.4 µmol/mol to 100 µmol/mol	100 % to 8 % (relative)	
		O_2	・GC-TCD	5 µmol/mol to 100 µmol/mol	100 % to 10 % (relative)	
		CO_2	・GC-TCD	6 µmol/mol to 100 µmol/mol	100 % to 6 % (relative)	
		propane	・GC-FID	7 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		butane	・GC-FID	4 µmol/mol to 200 µmol/mol	50 % to 8 % (relative)	
		pentane	・GC-FID	3 µmol/mol to 100 µmol/mol	100 % to 34 % (relative)	
		H_2O	・Capacitive hygrometer	510 µmol/mol to 3000 µmol/mol	70 % to 10 % (relative)	

Subcategory	Calibration and Measurement Capabilities					Date of Accreditation
	Material		Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
	Matrix	Analytical component				
High purity gases	butane	butane	・Purity analysis	0.99 mol/mol to 1 mol/mol	2 mmol/mol to 0.005 mmol/mol	2024-11-01 *2026-08-24
		N_2	・GC-TCD	1 µmol/mol to 100 µmol/mol	100 % to 8 % (relative)	
		O_2	・GC-TCD	1 µmol/mol to 100 µmol/mol	100 % to 10 % (relative)	
		CO_2	・GC-TCD	6 µmol/mol to 100 µmol/mol	100 % to 6 % (relative)	
		propane	・GC-FID	4 µmol/mol to 100 µmol/mol	30 % to 2 % (relative)	
		isobutane	・GC-FID	96 µmol/mol to 200 µmol/mol	30 % to 2 % (relative)	
		H_2O	・Capacitive hygrometer	1110 µmol/mol to 3000 µmol/mol	30 % to 10 % (relative)	
	isopentane	isopentane	・Post-column reaction gas chromatography	0.99 mol/mol to 1 mol/mol	10 mmol/mol to 3.4 mmol/mol	
	pentane	pentane	・Post-column reaction gas chromatography	0.99 mol/mol to 1 mol/mol	10 mmol/mol to 4.4 mmol/mol	
	N_2	N_2	・Purity analyss	0.999 mol/mol to 1 mol/mol	1 mmol/mol to 0.004 mmol/mol	
		O_2＋Ar	・GC-TCD	1 µmol/mol to 10 µmol/mol	100 % to 30 % (relative)	
		CO_2	・GC-FID	0.1 µmol/mol to 10 µmol/mol	100 % to 30 % (relative)	
		total hydrocarbons	・Total hydrocarbon analyzer	0.005 µmol/mol to 10 µmol/mol	100 % to 30 % (relative)	
		H_2O	・Chilled mirror dew point hygrometer	1.4 µmol/mol to 10 µmol/mol	100 % to 30 % (relative)	
Mixtured gases	N_2	O_2	・GC-TCD	5 µmol/mol to 5 mmol/mol	1 % to 0.1 % (relative)	
	N_2 and air	N_2O	・GC-TCD ・GC-ECD	0.2 µmol/mol to 0.02 mol/mol	0.2 % to 0.1 % (relative)	
	air	CH_4	・CRDS	1600 nmol/mol to 2600 nmol/mol	1.3 nmol/mol	
	CH_4	hexane	・GC-FID	100 µmol/mol to 2500 µmol/mol	1.4 % (relative)	
	N_2	HCHO	・FT-IR	1 µmol/mol to 8 µmol/mol	2.5 % to 1 % (relative)	
	Ar	N_2	・GC-MS	1 µmol/mol to 200 µmol/mol	10 % to 0.5 % (relative)	
	air	CO_2	・CRDS	150 µmol/mol to 800 µmol/mol	0.02 µmol/mol to 0.1 µmol/mol	
	N_2 and air*	CH_4	・FT-IR	100 µmol/mol to 5000 µmol/mol	0.5 % (relative)	
	air*	C_3H_8	・FT-IR	1000 µmol/mol to 2000 µmol/mol	0.5 % (relative)	
	N_2*	C_3H_8	・FT-IR	10 µmol/mol to 100 µmol/mol	0.5 % (relative)	
	N_2 and air*	CO_2	・FT-IR	16 cmol/mol to 25 cmol/mol	0.5 % (relative)	

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	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Inorganic standard solution	Mg	・Chelatometric titration	0.8 g/kg to 1.2 g/kg	0.16 % (relative)	2024-11-01 *2026-08-24
	Al	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cu	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Zn	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Fe	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ni	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Sr	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.08 % (relative)	
	V	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.08 % (relative)	
	Mn	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Mo	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Co	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cd	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ga	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	In	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Pb	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Bi	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ba	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.16 % (relative)	
	Cr	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.06 % (relative)	
	Tl	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.28 % (relative)	
	Sn	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.14 % (relative)	
	Na	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	K	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Li	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Rb	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Cs	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	As	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Sb	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Be	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.18 % (relative)	
	Zr	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ag	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	Ca	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.10 % (relative)	
	Hg	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.10 % (relative)	
	Se	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.12 % (relative)	
	B	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.12 % (relative)	
	Te	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	Si	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.28 % (relative)	
	La	・Chelatometric titration	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	Ti	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.19 % (relative)	
	Y	・Chelatometric titration	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	Pd*	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.19 % (relative)	
	Nd*	・Chelatometric titration	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	chloride ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	nitrite ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.18 % (relative)	
	nitrate ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.15 % (relative)	
	phosphate ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.18 % (relative)	
	bromide ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	iodide ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.04 % (relative)	
	sulfate ion	・IC	0.8 g/kg to 1.2 g/kg	0.12 %(relative)	
	cyanide ion	・Complexometric titration	0.8 g/kg to 1.2 g/kg	1.1 %(relative)	

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	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Inorganic standard solution	chlorate ion	・Oxdation-reduction titration	0.8 g/kg to 1.2 g/kg	0.15 %(relative)	2024-11-01
	bromate ion	・Oxdation-reduction titration	1.6 g/kg to 2.4 g/kg	0.14 %(relative)	
	ammonium ion	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.13 % (relative)	
	total organic carbon	・Gravimetric preparation	0.8 g/kg to 1.2 g/kg	0.16 %(relative)	
Inorganic standard solution (Isotopic standard)	$^{206}Pb/^{204}Pb$ (Isotopic ratio)	・MC-ICP-MS	14 mol/mol to 22 mol/mol	0.025 % (relative)	
	$^{207}Pb/^{204}Pb$ (Isotopic ratio)	・MC-ICP-MS	13 mol/mol to 17 mol/mol	0.023 % (relative)	
	$^{208}Pb/^{204}Pb$ (Isotopic ratio)	・MC-ICP-MS	36 mol/mol to 40 mol/mol	0.023 % (relative)	
	$^{208}Pb/^{206}Pb$ (Isotopic ratio)	・MC-ICP-MS	1.8 mol/mol to 2.2 mol/mol	0.0062 % (relative)	
	$^{207}Pb/^{206}Pb$ (Isotopic ratio)	・MC-ICP-MS	0.8 mol/mol to 1.0 mol/mol	0.0042 % (relative)	
	^{204}Pb (Isotopic abundance)	・MC-ICP-MS	0.012 mol/mol to 0.015 mol/mol	0.029 % (relative)	
	^{206}Pb (Isotopic abundance)	・MC-ICP-MS	0.24 mol/mol to 0.28 mol/mol	0.0036 % (relative)	
	^{207}Pb (Isotopic abundance)	・MC-ICP-MS	0.20 mol/mol to 0.23 mol/mol	0.0047 % (relative)	
	^{208}Pb (Isotopic abundance)	・MC-ICP-MS	0.51 mol/mol to 0.53 mol/mol	0.0031 % (relative)	
	Pb (Molar mass)	・MC-ICP-MS	207.1 g/mol to 207.3 g/mol	0.000014 % (relative)	
Inorganic standard solution (Isotopic standard)	$^{56}Fe/^{54}Fe$ (Isotopic ratio)	・MC-ICP-MS	11 mol/mol to 20 mol/mol	0.041 % (relative)	
	$^{57}Fe/^{54}Fe$ (Isotopic ratio)	・MC-ICP-MS	0.25 mol/mol to 0.47 mol/mol	0.063 % (relative)	
	$^{58}Fe/^{54}Fe$ (Isotopic ratio)	・MC-ICP-MS	0.034 mol/mol to 0.063 mol/mol	0.11 % (relative)	
	^{54}Fe (Isotopic abundance)	・MC-ICP-MS	0.041 mol/mol to 0.076 mol/mol	0.038 % (relative)	
	^{56}Fe (Isotopic abundance)	・MC-ICP-MS	0.064 mol/mol to 1.2 mol/mol	0.0037 % (relative)	
	^{57}Fe (Isotopic abundance)	・MC-ICP-MS	0.015 mol/mol to 0.028 mol/mol	0.071 % (relative)	
	^{58}Fe (Isotopic abundance)	・MC-ICP-MS	0.0020 mol/mol to 0.0037 mol/mol	0.11 % (relative)	
	Fe (Molar mass)	・MC-ICP-MS	55.29 g/mol to 56.4 g/mol	0.000068 % (relative)	

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	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
pH standard solution	pH	・Harned cell method	1.18 to 10.51	0.003	2024-11-01
Electrolytic conductivity standard solution	Electrolytic conductivity	・Impedance measurement	0.05 S/m to 15 S/m	0.15 % to 0.48 % (relative)	
		・Impedance measurement	0.005 S/m to 0.05 S/m	0.61 % (relative)	
High purity inorganic material (Potassium hydrogen phthalate)	acid	・Coulometric titration	99.9 % to 100.1 % (mass fraction as potassium hydrogen phthalate)	0.012 % to 0.015 %	
High purity inorganic material (Potassium dichromate)	oxidant	・Coulometric titration	99.9 % to 100.1 % (mass fraction as potassium dichromate)	0.010 % to 0.012 %	
High purity inorganic material (Arsenic(Ⅲ) trioxide)	reductant	・Coulometric titration	99.9 % to 100.1 % (mass fraction as arsenic(Ⅲ) trioxide)	0.014 % to 0.020 %	
High purity inorganic material (Sodium carbonate)	base	・Coulometric titration ・Gravimetric titration	99.9 % to 100.1 % (mass fraction as sodium carbonate)	0.01 % to 0.02 %	
High purity inorganic material (Potassium iodate)	oxidant	・Coulometric titration ・Gravimetric titration	99.9 % to 100.1 % (mass fraction as potassium iodate)	0.014 % to 0.020 %	
High purity inorganic material (Sodium oxalate)	reductant	・Coulometric titration ・Gravimetric titration	99.9 % to 100.1 % (mass fraction as sodium oxalate)	0.023 % to 0.025 %	
Heavy metals in polymer	Cd	・ICP-OES ・ICP-MS ・ID-ICP-MS	5 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Cr	・ICP-OES ・ICP-MS ・ID-ICP-MS	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Hg	・ICP-OES ・ICP-MS ・ID-ICP-MS	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Pb	・ICP-OES ・ICP-MS ・ID-ICP-MS	10 mg/kg to 10000 mg/kg	0.5 % to 2.0 % (relative)	
	Br	・Instrumental Neutron Activation Analysis ・ID-ICP-MS	50 mg/kg to 10000 mg/kg	2.0 % to 5.0 % (relative)	
Minor elements in metals and alloys (lead-free solder)	Pb	・ID-ICP-MS	100 mg/kg to 2000 mg/kg	0.8 % to 1.6 % (relative)	
	Ag	・ID-ICP-MS	2.8 % to 3.2 % (mass fraction)	0.8 % to 1.6 % (relative)	
	Cu	・ID-ICP-MS	0.3 % to 0.7 % (mass fraction)	0.5 % to 1.0 % (relative)	
High purity inorganic material (Sodium chloride)	Cl	・Coulometric titration	99.9 % to 100.1 % (mass fraction as sodium chloride)	0.03 % to 0.05 %	
High purity inorganic material (Ammonium chloride)	ammonium ion	・Coulometric titration	99.9 % to 100.1 % (mass fraction as ammonium chloride)	0.034 % to 0.070 %	
	Cl	・Gravimetric titration	99.9 % to 100.1 % (mass fraction as ammonium chloride)	0.054 % to 0.080 %	
High purity inorganic material (Amidosulfuric acid)	acid	・Coulometric titration	99.9 % to 100.1 % (mass fraction as amidosulfuric acid)	0.008 % to 0.012 %	
	N	・Coulometric titration	99.9 % to 100.1 % (mass fraction as amidosulfuric acid)	0.025 % to 0.040 %	
Hydrochloric acid	acid	・Coulometric titration	0.05 mol/kg to 2 mol/kg	0.016 % to 0.027 % (relative)	
High purity inorganic material (Tris(hydroxymethyl) aminomethane)	base	・Coulometric titration	99.8 % to 100.2 % (mass fraction as tris(hydroxymethyl)aminomethane)	0.026 %	
High purity inorganic material (Calcium carbonate)	Ca	・Chelatometric titration	99.5 % to 100.5 % (mass fraction as calcium carbonate)	0.030 %	
High purity inorganic material (Zinc)	Zn	・Subtracting method with impurity analysis	99.5 % to 100.0 % (mass fraction as zinc)	0.008 %	
	Zn (molar mass)	・ICP-MS	65.36 g/mol to 65.40 g/mol	0.0018 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	ethanol	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.002 mol/mol to 0.0004 mol/mol	2024-11-01
	toluene	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.003 mol/mol to 0.00006 mol/mol	
	1,2-dichloroethane	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0001 mol/mol	
	benzene	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00002 mol/mol	
	o- xylene	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00002 mol/mol	
	ethylbenzene	・Freezing point depression method	0.998 mol/mol to 1 mol/mol	0.0002 mol/mol to 0.002 mol/mol	
	cholesterol	・Freezing point depression method	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	m -xylene	・Freezing point depression method	0.997 mol/mol to 1 mol/mol	0.001 mol/mol to 0.00015 mol/mol	
	diethyl phthalate	・Freezing point depression method	0.997 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	chloroform	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	p -xylene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0001 mol/mol	
	bromoform	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	bromodichloromethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	bisphenol A	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0006 mol/mol	
	dibromochloromethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	trans -1,2-dichloroethylene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.001 mol/mol to 0.0002 mol/mol	
	trichloroethylene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.002 mol/mol	
	tetrachloroethylene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1,1-trichloroethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0004 mol/mol	
	cis -1,2-dichloroethylene	・Freezing point depression method	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0007 mol/mol	
	cis -1,3-dichloropropene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
	1,4-dichlorobenzene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0003 mol/mol	
	styrene	・Freezing point depression method ・Mass balance approach	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
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	dichloromethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	2024-11-01 *2026-08-24
	tetrachloromethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1-dichloroethylene	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	1,1,2-trichloroethane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.0001 mol/mol	
	trans -1,3-dichloropropene	・Freezing point depression method	0.97 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
	1,2-dichloropropane	・Freezing point depression method	0.995 mol/mol to 1 mol/mol	0.005 mol/mol to 0.003 mol/mol	
	acrylonitrile	・Freezing point depression method ・Mass balance approach	0.99 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.00005 kg/kg	
	acetoaldehyde	・Volumetric titration ・Mass balance approach	0.99 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.003 kg/kg	
	17β-estradiol	・qNMR ・Mass balance approach (HPLC-UV, HPLC-CAD, HS-GC-MS, Coulometric Karl-Fisher titration, TG)	0.96 kg/kg to 1.00 kg/kg	0.005 kg/kg to 0.003 kg/kg	
	progesterone	・qNMR ・Freezing point depression method ・Mass balance approach (HPLC-UV, HPLC-CAD, HS-GC-MS, Coulometric Karl-Fisher titration, TG)	0.98 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.001 kg/kg	
	testosterone	・qNMR ・Mass balance approach (HPLC-UV, HPLC-CAD, HS-GC-MS, Coulometric Karl-Fisher titration, TG)	0.98 kg/kg to 1.00 kg/kg	0.01 kg/kg to 0.001 kg/kg	
	1,4-dioxane	・Freezing point depression method	0.998 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0001 kg/kg	
	tert -butylmethylether	・Freezing point depression method	0.998 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0003 kg/kg	
	trichloroacetic acid	・Freezing point depression method ・Volumetric titration	0.995 kg/kg to 1 kg/kg	0.002 kg/kg	
	3,5-bis(trifluoromethyl)benzoic acid	・Freezing point depression method ・Coulometric titration ・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration, TG)	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	・Freezing point depression method ・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration, TG)	0.999 kg/kg to 1 kg/kg	0.0003 kg/kg to 0.0001 kg/kg	
	Potassium hydrogen phthalate*	・Coulometric titration ・Mass balance approach (HPLC-UV, qNMR, Coulometric Karl-Fischer titration, ICP-OES)	0.999 kg/kg to 1 kg/kg	0.0003 kg/kg to 0.0001 kg/kg	
	Phenylphosphonic acid*	・Volumetric titration ・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration, TG) ・qNMR	0.998 kg/kg to 1 kg/kg	0.0015 kg/kg to 0.0005 kg/kg	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
High purity organic materials	di-*n* -butyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	2024-11-01
	di-2-ethylhexyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	di-*n* -propyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.0006 kg/kg to 0.0002 kg/kg	
	di-*n* -pentyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.97 kg/kg to 1 kg/kg	0.006 kg/kg to 0.0002 kg/kg	
	di-*n* -hexyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.97 kg/kg to 1 kg/kg	0.006 kg/kg to 0.0002 kg/kg	
	dicyclohexyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	butyl benzyl phthalate	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.0015 kg/kg to 0.0002 kg/kg	
	4-*n* -nonylphenol	・Freezing point depression method	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	
	4-*t* -octylphenol	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	4-*t* -butylphenol	・Mass balance approach (HPLC-UV, GC-FID, Coulometric Karl-Fischer titration)	0.98 kg/kg to 1 kg/kg	0.001 kg/kg to 0.0002 kg/kg	
	4-*n* -heptylphenol	・Freezing point depression method	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	
	2,4-dichlorophenol	・Freezing point depression method	0.99 mol/mol to 1 mol/mol	0.005 mol/mol to 0.001 mol/mol	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Organic standard solution	4-hydroxy-clomifene	・qNMR ・qNMR/HPLC-UV ・Gravimetric preparation	4-hydroxy-clomifene: 200 μg/g to 300 μg/g (*E*)-4-hydroxy-clomifene: 50 μg/g to 200 μg/g (*Z*)-4-hydroxy-clomifene: 50 μg/g to 200 μg/g	4-hydroxy-clomifene: 1.5 % (relative) (*E*)-4-hydroxy-clomifene: 1.6 % (relative) (*Z*)-4-hydroxy-clomifene: 1.6 % (relative)	2024-11-01
	3β,4α-dihydroxy-5α-androstan-17-one	・qNMR ・qNMR/HPLC-UV ・Gravimetric preparation	100 μg/g to 170 μg/g	1.4 % (relative)	
CRMs for thermal properties	cyclohexane (thermal analysis with thermal analyzer such as DSC)	・Adiabatic calorimetry	phase transition temperature 186 K to 280 K	0.04 K to 0.1 K	
		・Adiabatic calorimetry	phase transition enthalpy 30 J g^{-1} to 90 J g^{-1}	0.7 J g^{-1} to 3 J g^{-1}	
High purity organic materials	perfluorooctanoic acid	・Acid-base titration ・Mass balance approach (LC-MS, Coulometric Karl Fischer titration, TG)	0.95 kg/kg to 1 kg/kg	0.006 kg/kg to 0.002 kg/kg	
	chloroalkanes	・Mass balance approach (GC-FID, HS-GC-MS, Coulometric Karl Fischer titration, TG)	0.98 kg/kg to 1 kg/kg	0.005 kg/kg to 0.001 kg/kg	
Organic standard solution	benzo[*a*]pyrene/ 2,2,4-trimethylpentane	・Freezing point depression method ・Gravimetric preparation	10 mg/kg to 200 mg/kg	4 % to 1 % (relative)	
	potassium perfluorooctandesulfonate /methanol	・Freezing point depression method ・Gravimetric preparation	5 mg/kg to 100 mg/kg	4 % to 1 % (relative)	
Standard solution (water in organic solvent)	water	・Coulometric Karl-Fischer titration ・Volumetric Karl-Fischer titration	0.01 g/kg to 10 g/kg	30 % to 0.1 % (relative)	
Food (pesticide in grain)	fenitrothion	・ID-GC-MS ・ID-LC-MS	0.1 mg/kg to 1 mg/kg	20 % to 7.5 % (relative)	
	etofenprox	・ID-GC-MS ・ID-LC-MS	0.1 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
Food (pesticide in vegetable)	diazinon	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
	fenitrothion	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
	chlorpyrifos	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
	permethrin	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	25 % to 7.5 % (relative)	
	cypermethrin	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	25 % to 7.5 % (relative)	
	etofenprox	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	10 % to 7.5 % (relative)	
Food (pesticide in fruits)	diazinon	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
	fenitrothion	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	30 % to 7.5 % (relative)	
	permethrin	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	25 % to 7.5 % (relative)	
	cypermethrin	・ID-GC-MS	0.001 mg/kg to 1 mg/kg	25 % to 7.5 % (relative)	
Food (pesticide in beans)	diazinon	・ID-GC-MS	0.001 mg/kg to 0.1 mg/kg	20 % to 2 % (relative)	
	fenitrothion	・ID-GC-MS	0.001 mg/kg to 0.2 mg/kg	20 % to 2 % (relative)	
	chlorpyrifos	・ID-GC-MS	0.001 mg/kg to 0.3 mg/kg	30 % to 3 % (relative)	
	permethrin	・ID-GC-MS	0.002 mg/kg to 0.1 mg/kg	20 % to 2 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix (trace elements in sediment)	Sb	・ICP-MS ・ID-ICP-MS	0.1 mg/kg to 3 mg/kg	10 % to 2 % (relative)	2024-11-01
	Cd	・ID-ICP-MS ・ICP-MS ・GFAAS	0.1 mg/kg to 3 mg/kg	10 % to 2 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	5 mg/kg to 500 mg/kg	5 % to 1 % (relative)	
	Pb	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	2 mg/kg to 250 mg/kg	5 % to 1 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	5 mg/kg to 50 mg/kg	5 % to 2 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・ICP-OES	20 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	As	・ICP-MS ・ICP-OES ・GFAAS ・HR-ICP-MS	1 mg/kg to 50 mg/kg	20 % to 2 % (relative)	
	Co	・ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Se	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.1 mg/kg to 5 mg/kg	20 % to 1 % (relative)	
	Cr	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	10 mg/kg to 500 mg/kg	10 % to 1 % (relative)	
	Hg	・ID-ICP-MS ・ICP-MS ・Heating evaporation-Gold amalgamation AAS	0.02 mg/kg to 5 mg/kg	15 % to 1 % (relative)	
	Ag	・ID-ICP-MS ・ICP-MS	0.05 mg/kg to 2 mg/kg	4 % to 3 % (relative)	
	Mo	・ID-ICP-MS ・ICP-MS	0.5 mg/kg to 20 mg/kg	7 % to 3 % (relative)	
	Sn	・ID-ICP-MS ・ICP-MS	1 mg/kg to 50 mg/kg	5 % to 2 % (relative)	
Environmental matrix (toxic elements in tunnel dust)	Cr	・ID-ICP-MS ・ICP-MS	5 mg/kg to 5 % (mass fraction)	10 % to 2 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS ・ICP-OES	5 mg/kg to 2 % (mass fraction)	5 % to 2 % (relative)	
	Pb	・ID-ICP-MS ・ICP-MS ・ICP-OES	2 mg/kg to 1 % (mass fraction)	5 % to 2 % (relative)	
	Mn	・ICP-MS ・ICP-OES ・GFAAS	2 mg/kg to 1 % (mass fraction)	5 % to 2 % (relative)	
	Cd	・ID-ICP-MS ・ICP-MS	0.1 mg/kg to 0.1 % (mass fraction)	10 % to 2 % (relative)	
Environmental matrix (polychlorinated biphenyls / pesticide in biological sample)	PCB118	・ID-GC-MS	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	PCB138	・ID-GC-MS	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	PCB153	・ID-GC-MS	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	PCB194	・ID-GC-MS	5 ng/kg to 200 ng/kg	40 % to 10 % (relative)	
	acetamiprid	・ID-LC-MS	0.1 μg/kg to 2 μg/kg	50 % to 10 % (relative)	
	clothianidin	・ID-LC-MS	0.1 μg/kg to 2 μg/kg	50 % to 10 % (relative)	
	thiacloprid	・ID-LC-MS	0.1 μg/kg to 2 μg/kg	50 % to 10 % (relative)	
	thiamethoxam	・ID-LC-MS	0.1 μg/kg to 2 μg/kg	50 % to 10 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Fuel (components in bioethanol fuel)	water	・Coulometric Karl-Fischer titration ・Volumetric Karl-Fischer titration	100 mg/kg to 5000 mg/kg	2 % to 0.2 % (relative)	2024-11-01
	methanol	・ID-GC-MS ・GC-FID	0.2 g/kg to 1 g/kg	10 % to 2 % (relative)	
	S	・Combustion-ultraviolet fluorescence method ・Combustion-IC	1 mg/kg to 5 mg/kg	3 % (relative)	
	Cu	・ICP-MS ・ID-ICP-MS ・GFAAS	0.0001 mg/kg to 500 mg/kg	10 % to 1 % (relative)	
Fuel (components in biodiesel fuel)	water	・Coulometric Karl-Fischer titration ・Volumetric Karl-Fischer titration	300 mg/kg to 1000 mg/kg	10 % to 5 % (relative)	
	Na	・ICP-MS/MS ・HR-ICP-MS ・FAAS	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	Mg	・ID-ICP-MS/MS ・ICP-MS/MS	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	K	・ID-ICP-MS/MS ・ICP-MS/MS	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	Ca	・ID-ICP-MS/MS ・ICP-MS/MS	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	P	・ICP-MS/MS ・FI-ICP-MS ・ICP-OES	0.5 mg/kg to 20 mg/kg	20 % to 5 % (relative)	
	S	・ID-ICP-MS/MS ・ICP-MS/MS ・Combustion-IC	2 mg/kg to 50 mg/kg	10 % to 5 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix (river water and drinking water)	Al	・ICP-MS ・ICP-MS/MS ・GFAAS	1 μg/kg to 100 μg/kg	8 % to 1 % (relative)	2024-11-01
	Sb	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-MS/MS	0.001 μg/kg to 10 μg/kg	5 % to 1 % (relative)	
	As	・ICP-MS ・ICP-MS/MS ・GFAAS	0.05 μg/kg to 50 μg/kg	15 % to 1 % (relative)	
	Ba	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.5 μg/kg to 50 μg/kg	2 % to 1 % (relative)	
	B	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	1 μg/kg to 100 μg/kg	5 % to 1 % (relative)	
	Cd	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.001 μg/kg to 10 μg/kg	15 % to 2 % (relative)	
	Cr	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.05 μg/kg to 50 μg/kg	8 % to 1 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.05 μg/kg to 50 μg/kg	15 % to 1 % (relative)	
	Fe	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.1 μg/kg to 100 μg/kg	10 % to 1 % (relative)	
	Pb	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.001 μg/kg to 10 μg/kg	15 % to 1 % (relative)	
	Mn	・ICP-MS ・ICP-MS/MS ・GFAAS	0.01 μg/kg to 50 μg/kg	15 % to 1 % (relative)	
	Mo	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-MS/MS	0.05 μg/kg to 10 μg/kg	2 % to 1 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.01 μg/kg to 50 μg/kg	5 % to 1 % (relative)	
	Se	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.1 μg/kg to 50 μg/kg	10 % to 1 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.05 μg/kg to 50 μg/kg	10 % to 1 % (relative)	
	Na	・ICP-MS ・ICP-OES ・MP-AES	1 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	K	・ICP-MS ・ICP-OES ・MP-AES	0.2 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Mg	・ICP-MS ・ICP-OES ・MP-AES	0.2 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Ca	・ICP-MS ・ICP-OES ・MP-AES	1 mg/kg to 50 mg/kg	5 % to 1 % (relative)	
	Rb	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.05 μg/kg to 100 μg/kg	5 % to 1 % (relative)	
	Sr	・ID-ICP-MS ・ICP-MS ・ICP-MS/MS	0.05 μg/kg to 200 μg/kg	5 % to 1 % (relative)	
	P	・ICP-MS	1 μg/kg to 100 μg/kg	5 % to 1 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Environmental matrix (sea water)	Cr	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	2024-11-01
	Mn	・ICP-MS ・GFAAS	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Fe	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	20 % to 2 % (relative)	
	As	・ICP-MS ・GFAAS	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Se	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	15 % to 2 % (relative)	
	Cd	・ID-ICP-MS ・ICP-MS	0.3 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	Pb	・ID-ICP-MS ・ICP-MS	1 µg/kg to 20000 µg/kg	10 % to 2 % (relative)	
	dissolved silica	・Colorimetry ・IC ・IC-ID-ICP-MS	0.03 mg/kg to 5 mg/kg	12 % to 1 % (relative)	
	nitrate ion	・Colorimetry ・IC	0.8 mg/kg to 3 mg/kg	3 % to 1.8 % (relative)	
	nitrite ion	・Colorimetry ・IC	0.01 mg/kg to 0.3 mg/kg	20 % to 5 % (relative)	
	phosphate ion	・Colorimetry	0.1 mg/kg to 0.3 mg/kg	5 % to 1 % (relative)	
Standard solution for chemical speciation	arsenobetaine	・HPLC-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	arsenate(As(V))	・HPLC-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	
	dimethylarsenic acid	・HPLC-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 1000 mg/kg	5 % to 1 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements and arsenic compounds in grains and beans)	Cr	・ID-HR-ICP-MS ・ICP-MS	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	2024-11-01
	Mn	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS ・MP-AES	0.1 mg/kg to 50 mg/kg	10 % to 1.5 % (relative)	
	Fe	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 50 mg/kg	10 % to 1.5 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	As	・ICP-MS ・HR-ICP-MS ・GFAAS	0.005 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Rb	・ID-ICP-MS ・ICP-MS	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Sr	・ID-ICP-MS ・ICP-MS	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Cd	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.005 mg/kg to 5 mg/kg	7 % to 2 % (relative)	
	Mo	・ID-ICP-MS ・ICP-MS	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Ba	・ID-ICP-MS ・ICP-MS	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Pb	・ID-HR-ICP-MS ・ICP-MS	0.001 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Na	・ICP-OES ・FAAS ・Flame photometry	0.1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Mg	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS ・MP-AES	10 mg/kg to 5000 mg/kg	5 % to 1.2 % (relative)	
	K	・ICP-OES ・FAAS ・Flame photometry	100 mg/kg to 50000 mg/kg	5 % to 2 % (relative)	
	Ca	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS ・Flame photometry ・MP-AES	5 mg/kg to 5000 mg/kg	5 % to 1.5 % (relative)	
	P	・ICP-MS ・HR-ICP-MS ・ICP-OES	100 mg/kg to 9000 mg/kg	10 % to 2 % (relative)	
	arsenite (As(III))	・HPLC-ICP-MS	0.005 mg/kg to 50 mg/kg (as As)	8 % to 2 % (relative)	
	arsenate (As(V))	・HPLC-ICP-MS	0.005 mg/kg to 50 mg/kg (as As)	8 % to 2 % (relative)	
	dimethylarsenic acid	・HPLC-ICP-MS	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	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・GFAAS	0.2 mg/kg to 5 mg/kg	15 % to 3 % (relative)	
	Mn	・ICP-MS ・HR-ICP-MS ・GFAAS	0.1 mg/kg to 5 mg/kg	10 % to 1.5 % (relative)	
	Fe	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 100 mg/kg	10 % to 3 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・GFAAS	0.2 mg/kg to 20 mg/kg	15 % to 3 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.2 mg/kg to 100 mg/kg	10 % to 1.5 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・ICP-OES	1 mg/kg to 100 mg/kg	10 % to 1.5 % (relative)	
	As	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements, arsenobetaine and methylmercury in fish, shellfish, and cephalopoda tissues)	Se	・ID-ICP-MS ・ICP-MS ・GFAAS	0.1 mg/kg to 10 mg/kg	15 % to 3 % (relative)	2024-11-01
	Hg	・ID-ICP-MS ・ICP-MS ・Heating evaporation Gold amalgamation AAS	0.1 mg/kg to 10 mg/kg	10 % to 1 % (relative)	
	Na	・ICP-OES ・FAAS ・Flame photometry	1 mg/kg to 100 g/kg	10 % to 2 % (relative)	
	Mg	・ICP-MS ・ICP-OES ・FAAS	0.5 mg/kg to 100 g/kg	5 % to 1 % (relative)	
	K	・ICP-OES ・FAAS ・Flame photometry	1 mg/kg to 100 g/kg	10 % to 2 % (relative)	
	Ca	・ICP-MS ・ICP-OES ・FAAS ・Flame photometry	0.1 mg/kg to 100 g/kg	15 % to 3 % (relative)	
	arsenobetaine	・HPLC-ICP-MS ・ID-LC-MS	1 mg/kg to 100 mg/kg (as As)	10 % to 2 % (relative)	
	methylmercury	・ID-GC-ICP-MS	0.1 mg/kg to 10 mg/kg (as Hg)	5 % to 1 % (relative)	
	Sr	・ID-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.02 mg/kg to 10 mg/kg	10 % to 1.2 % (relative)	
	Cd	・ID-ICP-MS ・ID-HR-ICP-MS ・ICP-MS ・ICP-OES ・GFAAS	0.01 mg/kg to 5 mg/kg	10 % to 1.5 % (relative)	
	P	・ICP-MS ・HR-ICP-MS ・ICP-OES	1 g/kg to 100 g/kg	5 % to 2 % (relative)	
Food (trace elements and arsenic compounds in algae)	Na	・ICP-OES ・FAAS ・Flame photometry	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	
	K	・ICP-OES ・FAAS ・Flame photometry	1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Mg	・ICP-MS ・ICP-OES ・FAAS	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Ca	・ICP-MS ・ICP-OES ・FAAS ・Flame photometry	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Sr	・ICP-MS ・ID-ICP-MS ・ICP-OES ・GFAAS	0.1 g/kg to 50 g/kg	10 % to 1 % (relative)	
	P	・ICP-MS ・HR-ICP-MS ・ICP-OES	0.01 g/kg to 50 g/kg	10 % to 1 % (relative)	
	Al	・ICP-MS ・ICP-OES ・GFAAS	10 mg/kg to 1000 mg/kg	10 % to 3 % (relative)	
	As	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	0.5 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Ba	・ICP-MS ・ID-ICP-MS	0.5 mg/kg to 100 mg/kg	10 % to 1 % (relative)	
	Cd	・ICP-MS ・ID-ICP-MS ・ICP-OES ・GFAAS	0.01 mg/kg to10 mg/kg	10 % to 2 % (relative)	
	Co	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to10 mg/kg	10 % to 3 % (relative)	
	Cr	・ID-ICP-MS ・HR-ICP-MS ・ICP-OES	0.1 mg/kg to 50 mg/kg	15 % to 2 % (relative)	
	Cu	・ICP-MS ・ID-ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Fe	・ICP-MS ・ID-ICP-MS ・ICP-OES ・GFAAS	10 mg/kg to 1000 mg/kg	10 % to 2 % (relative)	
	Mn	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Ni	・ICP-MS ・ID-ICP-MS ・ICP-OES	0.1 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Pb	・ICP-MS ・ID-ICP-MS ・ICP-OES	0.01 mg/kg to 10 mg/kg	15 % to 2 % (relative)	
	Zn	・ICP-MS ・ID-ICP-MS ・ICP-OES ・GFAAS	0.1 mg/kg to 100 mg/kg	10 % to 2 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements and arsenic compounds in algae)	arsenate (As(V))	・HPLC-ICP-MS	0.5 mg/kg to 100 mg/kg (as As)	10 % to 2 % (relative)	2024-11-01
	arsenosugar-408 (arsenosugar-SO_4)	・HPLC-ICP-MS	0.1 mg/kg to 10 mg/kg (as As)	10 % to 2 % (relative)	
	arsenosugar-328 (arsenosugar-OH)	・HPLC-ICP-MS	0.1 mg/kg to 10 mg/kg (as As)	10 % to 2 % (relative)	
	Hg	・ID-HR-ICP-MS	0.01 mg/kg to 0.1 mg/kg	10 % to 2 % (relative)	
Environmental matrix (trace elements in plant leaves)	Al	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	5 mg/kg to 5000 mg/kg	5 % to 1 % (relative)	
	B	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	1 mg/kg to 500 mg/kg	10 % to 2 % (relative)	
	Ba	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-OES	1 mg/kg to 500 mg/kg	10 % to 1 % (relative)	
	Ca	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS	200 mg/kg to 20000 mg/kg	5 % to 1 % (relative)	
	Cd	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.005 mg/kg to 50 mg/kg	10 % to 3 % (relative)	
	Co	・ICP-MS ・HR-ICP-MS	0.01 mg/kg to 5 mg/kg	10 % to 2 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	0.5 mg/kg to 500 mg/kg	5 % to 1 % (relative)	
	Fe	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.5 mg/kg to 2000 mg/kg	10 % to 1 % (relative)	
	K	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS	100 mg/kg to 30000 mg/kg	5 % to 1 % (relative)	
	Li	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Mg	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS	20 mg/kg to 5000 mg/kg	5 % to 1 % (relative)	
	Mn	・ICP-MS ・HR-ICP-MS ・ICP-OES ・GFAAS	5 mg/kg to 10000 mg/kg	5 % to 1 % (relative)	
	Na	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS	0.5 mg/kg to 100 mg/kg	20 % to 1 % (relative)	
	Ni	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-OES	0.3 mg/kg to 100 mg/kg	10 % to 1 % (relative)	
	P	・ICP-MS ・HR-ICP-MS ・ICP-OES	150 mg/kg to 10000 mg/kg	10 % to 1 % (relative)	
	Pb	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.01 mg/kg to 100 mg/kg	20 % to 3 % (relative)	
	Rb	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.5 mg/kg to 200 mg/kg	10 % to 1 % (relative)	
	Sr	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-OES	0.5 mg/kg to 200 mg/kg	5 % to 1 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	1 mg/kg to 500 mg/kg	10 % to 1 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Food (trace elements in milk and dairy products)	Ca	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS ・FAES	0.5 g/kg to 100 g/kg	10 % to 1 % (relative)	2024-11-01
	Fe	・ID-ICP-MS ・ICP-MS ・ICP-OES	0.01 g/kg to 10 g/kg	10 % to 2 % (relative)	
	K	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS ・FAES	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Mg	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS	0.1 g/kg to 100 g/kg	10 % to 1 % (relative)	
	Na	・ICP-MS ・HR-ICP-MS ・ICP-OES ・FAAS ・FAES	0.01 g/kg to 50 g/kg	10 % to 1 % (relative)	
	P	・ICP-MS ・HR-ICP-MS ・ICP-OES	0.1 g/kg to 50 g/kg	10 % to 1 % (relative)	
	Ba	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.05 mg/kg to 10 mg/kg	10 % to 1 % (relative)	
	Cu	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・GFAAS	0.5 mg/kg to 100 mg/kg	10 % to 2 % (relative)	
	Mn	・ICP-MS ・HR-ICP-MS ・GFAAS	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Mo	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.02 mg/kg to 10 mg/kg	10 % to 2 % (relative)	
	Rb	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.1 mg/kg to 500 mg/kg	10 % to 2 % (relative)	
	Sr	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS	0.1 mg/kg to 50 mg/kg	10 % to 2 % (relative)	
	Zn	・ID-ICP-MS ・ICP-MS ・HR-ICP-MS ・ICP-OES	0.1 mg/kg to 1000 mg/kg	10 % to 2 % (relative)	
High purity organic materials	creatinine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	urea	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	hydrocortisone	・Mass balance approach	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
	isoleucine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	phenylalanine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	valine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	proline	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	alanine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	leucine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	lysine monohydrochloride	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	arginine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	uric acid	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	triolein	・qNMR ・Mass balance approach	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
	triglyceride	・qNMR ・Mass balance approach	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	glycine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	glutamic acid	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	aspartic acid	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	tyrosine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	histidine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	serine	・Neutralization titration ・Nitrogen determination	0.990 kg/kg to 1 kg/kg	0.001 kg/kg	
	threonine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	methionine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	
	cystine	・Neutralization titration ・Nitrogen determination	0.995 kg/kg to 1 kg/kg	0.001 kg/kg	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Organic standard solution	C-reactive protein	・ID-LC-MS	10 μmol/kg to 50 μmol/kg	2 % (relative)	2024-11-01 *2026-08-24
	total deoxyribonucleic acid (DNA) less than 650 bp	・ID-LC-MS ・ICP-MS	0.5 ng/μL to 200 ng/μL	5 % (relative)	
	C-peptide	・ID-LC-MS	0.08 g/L to 1 g/L	3 % (relative)	
	total C-peptide (mixture of C-peptide, deamidated C-peptide, and pyroglutamylated C-peptide)	・ID-LC-MS	0.08 g/L to 1 g/L	3 % (relative)	
	total ribonucleic acid (RNA) less than 1100 bases	・ID-LC-MS ・ICP-MS	10 ng/μL to 200 ng/μL	4 % (relative)	
	albumin	・ID-LC-MS	1 g/L to 100 g/L	1.6 % (relative)	
	okadaic acid	・qNMR ・Gravimetric preparation	0.5 μg/mL to 10 μg/mL	4 % (relative)	
	dinophysistoxin-1	・qNMR ・Gravimetric preparation	0.5 μg/mL to 10 μg/mL	1.6 % (relative)	
	monoclonal antibody	・ID-LC-MS	0.5 g/L to 100 g/L	2.6 % (relative)	
	amyloid β*	・ID-LC-MS	10 mg/L to 100 mg/L	5 % (relative)	
	total amyloidβ (mixture of amyloidβ , oxdated amyloidβ,deamidated amyloidβ , and isomerized amyloidβ)*	・ID-LC-MS	10 mg/L to 100 mg/L	5 % (relative)	
Environmental matrix (food)	okadaic acid	・LC-MS	0.01 mg/kg to 10 mg/kg	10 % (relative)	
	dinophysistoxin-1	・LC-MS	0.01 mg/kg to 10 mg/kg	10 % (relative)	
Steroids in serum	cortisol (hydrocortisone)	・ID-LC-MS	15 μg/L to 250 μg/L	3 % to 2 % (relative)	
	aldosterone	・ID-LC-MS	20 pg/mL to 1000 pg/mL	5 % to 2 % (relative)	
	testosterone*	・ID-LC-MS	2 ng/mL to 10 ng/mL	5 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Molecular weight of polymer	poly (ethylene glycol) nonylphenyl ether (mass-average molecular mass, number-average molecular mass)	・SFC	600 to 700	3 % (relative)	2024-11-01
	poly (ethylene glycol) nonylphenyl ether (mass fraction and mole fraction of each degree of polymerization)	・SFC	1×10^{-4} to 1	5 % (relative)	
	monodisperse polystyrene (mass-average molar mass)	・SLS	1×10^{5} to 1×10^{6}	5 % (relative)	
	poly (ethylene glycol) 23mer (mass fraction)	・SFC	0.99 to 1	0.1 % (relative)	
Particle reference material	polystyrene latex nanoparticle (light scattering intensity averaged diameter)	・DLS	100 nm to 300 nm	1 % (relative)	
Polymer reference material（polymer: organic compounds）	polybrominated diphenyl ether in plastics (polystyrene, polyvinyl chloride)	・ID-GC-MS ・HPLC	50 mg/kg to 1500 mg/kg	5 % to 2 % (relative)	
	plasticizers (dimethyl phthalate, diethyl phthalate, di-*n* -propyl phthalate, di-*i* -butyl phthalate, di-*n* -butyl phthalate, di-*n* -pentyl phthalate, di-*n* -hexyl phthalate, dicyclohexyl phthalate, di-*n* -heptyl phthalate, butyl benzyl phthalate, bis(2-ethylhexyl) phthalate, bis(*n* -octyl) phthalate) in plastics (polystylen, polypropylene, polyvinyl chloride)	・ID-GC-MS ・HPLC	50 mg/kg to 1500 mg/kg	3 % to 1.5 % (relative)	
Polymer reference material（Raman shift）	Raman shift	・Raman spectroscopy	300 cm^{-1} ～ 3500 cm^{-1}	0.28 cm^{-1}	
Polymer (perfluoroalkyl substances in polymer）	perfluorooctanesulfonic acid and its salts	・ID-LC-MS/MS	10 mg/kg to 100 mg/kg	20 % to 10 % (relative)	
Positron lifetime	positron lifetime in solids	・Positron annihilation lifetime spectroscopy	0.1 ns to 20 ns	2 % (relative)	
Steel	chromium	・Titration ・EPMA	mass fraction 20 % to 40 %	0.1 % (relative)	
	nickel	・Titration ・EPMA	mass fraction 15 % to 70 %	0.1 % (relative)	
	iron	・Titration ・EPMA	mass fraction 5 % to 70 %	0.1 % (relative)	
Thin film	film thickness	・X-ray reflectivity	each layer 1 nm to 200 nm (total film thickness 3 nm to 200 nm or less)	0.27 % to 0.06 % (relative)	
Image sharpness evaluation (Dot material: Tungsten)	dot pitch	・SEM	70 nm to 6000 nm	1.2 % (relative)	
Thick film	film thickness	・SEM	70 nm to 6000 nm	1.2 % (relative)	

Subcategory	Calibration and Measurement Capabilities				Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand Range	Expanded Uncertainty (Level of Confidence Approximately 95 %)	
Thermophyical reference materials	Thermal expansion	・Laser interferometric thermal expansion measurement method	-0.5×10^{-6} K^{-1} to 20×10^{-6} K^{-1} (Temperature range：15 K to 1100 K)	0.005×10^{-6} K^{-1}	2024-11-01
	Thermal diffusivity	・Laser flash method	5×10^{-7} m^2 s^{-1} to 2×10^{-4} m^2 s^{-1} (Temperature range：300 K to 1500 K)	3 % (relative)	
	Specific heat capacity	・Adiabatic calorimetry ・Differencial Scaning calorimetry	0.07 J K^{-1} g^{-1} to 1.8 J K^{-1} g^{-1} (Temperature range：50 K to 900 K)	1 % (relative)	
	Thermal conductivity	The product of thermal diffusivity, specific heat capacity and density (Thermal diffusivity: ・laser flash method ・pulsed light heating thermoreflectance method) (Specific heat capacity : ・Adiabatic calorimetry ・Differencial Scaning calorimetry) (Density: dimensions and weight)	1 W/(m・K) to 200 W/(m・K) (Temperature range ：300 K to 900 K)	5 % (relative)	
	Thermal diffusivity	・Pulsed light heating thermoreflectance method	3×10^{-6} m^2 s^{-1} to 4×10^{-5} m^2 s^{-1} (Measurement environment temperature : 5 °C to 35 °C)	6 % (relative)	

Subcategory	Calibration and Measurement Capabilities					Date of Accreditation
	Measurand (analyte or property)	Calibration Methods *1	Measurand 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	・qNMR ・Freezing-point depression method	0.980 kg/kg to 1.000 kg/kg		0.002 kg/kg	2024-11-01
	Purity determination by nuclear magnetic resonance spectroscopy (including purity verification by gas chromatography)	・qNMR	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)	・qNMR	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)	・Freezing-point depression method	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)	・Freezing-point depression method	0.980 kg/kg to 1.000 kg/kg		0.002 kg/kg	
	Purity determination by nuclear magnetic resonance spectroscopy and titrimetry	・qNMR ・Volumetric titration	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	

*1

CRDS :	Cavity ring down spectroscopy
EPMA :	Electron probe microanalysis
DLS :	Dynamic light scattering
FAAS :	Flame atomic absorption spectrometry
FAES :	Flame atomic emission spectrometry
FI-ICP-MS :	Flow injection-inductively coupled plasma mass spectrometry
FT-IR :	Fourier transform infrared spectrometry
GC :	Gas chromatography
GC-ECD :	Gas chromatography/Electron capture detector
GC-FID :	Gas chromatography/Flame Ionization detector
GC-FPD :	Gas chromatography/Flame photometric detector
GC-MS :	Gas chromatography/Mass spectrometry
GC-PID :	Gas chromatography/Photo ionization detector
GC-SCD :	Gas chromatography/Sulfur chemiluminescence detector
GC-TCD :	Gas chromatography/Thermal conductivity detector
GFAAS :	Graphite furnace atomic absorption spectrometry
HPLC :	High performance liquid chromatography
HPLC-CAD	High performance liquid chromatography/Charged aerosol detector
HPLC-ICP-MS :	High performance liquid chromatography/inductively coupled plasma mass spectrometry
HPLC-UV	High performance liquid chromatography/Ultraviolet-visible absorption detector
HS- :	Head space-
HR-ICP-MS :	High-resolution inductively coupled plasma mass spectrometry
IC :	Ion chromatography
ICP-MS :	Inductively coupled plasma mass spectrometry
ICP-MS/MS :	Inductively coupled plasma tandem mass spectrometry
ICP-OES :	Inductively coupled plasma optical emission spectrometry
ID-GC-MS :	Isotope dilution-gas chromatography/mass spectrometry
ID-GC-ICP-MS :	Isotope dilution-gas chromatography/Inductively coupled plasma mass spectrometry
ID-HR-ICP-MS :	Isotope dilution-high-resolution inductively coupled plasma mass spectrometry
ID-HPLC-ICP-MS :	Isotope dilution-liquid chromatography/Inductively coupled plasma mass spectrometry
ID-ICP-MS :	Isotope dilution-inductively coupled plasma mass spectrometry
ID-ICP-MS/MS :	Isotope dilution-inductively coupled plasma tandem mass spectrometry
ID-LC-MS :	Isotope dilution-liquid chromatography/mass spectrometry
ID-LC-MS/MS :	Isotope dilution-liquid chromatography/tandem mass spectrometry
LC-MS :	Liquid chromatography/mass spectrometry
MC-ICP-MS :	Multicollector inductively coupled plasma mass spectrometry
MP-AES :	Microwave plasma atomic emission spectrometry
qNMR :	Quantitative nuclear magnetic resonance spectroscopy
SEM :	Scanning electron microscopy
SFC :	Supercritical fluid chromatography
SLS :	Static light scattering
TG :	Thermogravimetry

(End of Attachment)