

Amount of substance, High purity chemicals, Russian Federation**UNIIM (Ural Scientific and Research Institute for Metrology, Rosstandart)****VNIIM (D.I. Mendeleev Institute for Metrology, Rosstandart)**

The expanded uncertainty ranges given in the following CMCs may be expressed according to two conventions. For 'Uncertainty convention 1', the expanded uncertainty range spans from the smallest numerical value of the uncertainty to the largest numerical value of the uncertainty found within the quantity range. For 'Uncertainty convention 2', the expanded uncertainty range is expressed as the uncertainty of the smallest value of the quantity to the uncertainty of the largest value of the quantity.

The expanded uncertainties correspond to $k = 2$ (level of confidence 95%)

NMI Service Identifier	Measurement Service Sub-Category	Matrix	Measurand		Dissemination Range of Measurement Capability			Range of Expanded Uncertainties as Disseminated				Range of Certified Values in Reference Materials			Range of Expanded Uncertainties for Certified Value				Mechanism(s) for Measurement Service Delivery	Comments	Service Provider
			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?			
1.2-01	Organic compounds	organic compounds	perfluorobenzoic acid	Mass fraction	95	100	%	5.0	0.1	%	Yes	99.9	99.9	%	0.1	0.1	%	Yes	GSO (RF) 7752 - 2000	The work has been done in cooperation with IOS UrO RAN (Organic Synthesis Institute of the Ural Branch of the Russian Academy of Sciences) Uncertainty convention 2	UNIIM
1.2-02	Organic compounds	organic compounds	hexachlorobenzene	Mass fraction	95	100	%	5.0	0.1	%	Yes	99.9	99.9	%	0.1	0.1	%	Yes	GSO (RF) 5213 - 90	The work has been done in cooperation with IOS UrO RAN (Organic Synthesis Institute of the Ural Branch of the Russian Academy of Sciences) Uncertainty convention 2	UNIIM
1.1-02	Inorganic compounds	high purity potassium hydrogen phthalate	total acid content expressed as potassium hydrogen phthalate	Mass fraction	99.9	100	%	0.011	0.03	%	Yes	99.998	99.998	%	0.014	0.014	%	Yes	Primary measurement, CRM (GCO 2216-81, batch 13)	Uncertainty convention 1 Approved on 06 December 2011	UNIIM
1.3-1	Metals	high purity zinc	silver	Mass fraction	0.25	100	mg/kg	0.10	10	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM
1.3-2	Metals	high purity zinc	bismuth	Mass fraction	0.050	10	mg/kg	0.030	1	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM

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			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?			
1.3-3	Metals	high purity zinc	cadmium	Mass fraction	0.25	100	mg/kg	0.06	5	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM
1.3-4	Metals	high purity zinc	chromium	Mass fraction	0.25	100	mg/kg	0.10	10	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM
1.3-5	Metals	high purity zinc	nickel	Mass fraction	0.25	100	mg/kg	0.06	5	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM
1.3-6	Metals	high purity zinc	thallium	Mass fraction	0.25	100	mg/kg	0.06	5	mg/kg	No								Calibration	Uncertainty convention 2 Approved on 06 december 2011	VNIIM
1.2-03	High purity chemicals	valine	valine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-04	High purity chemicals	glycine	glycine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-05	High purity chemicals	alanine	alanine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-06	High purity chemicals	leucine	leucine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-07	High purity chemicals	isoleucine	isoleucine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-08	High purity chemicals	proline	proline	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM

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			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?			
1.2-09	High purity chemicals	serine	serine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-10	High purity chemicals	threonine	threonine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-11	High purity chemicals	cysteine	cysteine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-12	High purity chemicals	methionine	methionine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-13	High purity chemicals	aspartic acid	aspartic acid	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-14	High purity chemicals	asparagine	asparagine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-15	High purity chemicals	glutamic acid	glutamic acid	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-16	High purity chemicals	glutamine	glutamine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-17	High purity chemicals	lysine	lysine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM

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			Analyte or Component	Quantity	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?	From	To	Unit	From	To	Unit	Is the expanded uncertainty a relative one?			
1.2-18	High purity chemicals	arginine	arginine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-19	High purity chemicals	histidine	histidine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-20	High purity chemicals	phenylalanine	phenylalanine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-21	High purity chemicals	tyrosine	tyrosine	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.2-22	High purity chemicals	tryptophan	tryptophan	Mass fraction	98	100	%	0.8	0.3	%	No								Calibration	Uncertainty convention 2 Approved on 19 June 2014	VNIIM
1.1-01	Inorganic compounds	high purity potassium dichromate	oxidants expressed as potassium dichromate	Mass fraction	99.950	100	%	0.013	0.03	%	Yes	99.971	99.971	%	0.018	0.018	%	Yes	Primary measurement, CRM (GCO 2215-81, batch 16)	Uncertainty convention 1 Approved on 19 June 2014	UNIIM