

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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
			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?		
14	Environmental	nitrogen	nitrogen monoxide	Amount-of-substance fraction	100	1000	µmol/mol	0.3	0.2	%	Yes	100	1000	µmol/mol	0.3	0.2	%	Yes	PRGM, SGS and calibration	
15	Environmental	nitrogen	nitrogen monoxide	Amount-of-substance fraction	1	10	mmol/mol	0.2	0.1	%	Yes	1	10	mmol/mol	0.2	0.1	%	Yes	PRGM, SGS and calibration	
16	Environmental	nitrogen	nitrogen dioxide	Amount-of-substance fraction	100	1000	nmol/mol	3	3	%	Yes	100	1000	nmol/mol	3	3	%	Yes	SGS and calibration	
17	Environmental	synthetic air	propane	Amount-of-substance fraction	1	10	µmol/mol	1	1	%	Yes	1	10	µmol/mol	1	1	%	Yes	PRGM, SGS and calibration	
18	Environmental	synthetic air	propane	Amount-of-substance fraction	10	100	µmol/mol	1	1	%	Yes	10	100	µmol/mol	1	1	%	Yes	PRGM, SGS and calibration	
19	Environmental	synthetic air	propane	Amount-of-substance fraction	100	1000	µmol/mol	1	0.9	%	Yes	100	1000	µmol/mol	1	0.9	%	Yes	PRGM, SGS and calibration	
20	Environmental	synthetic air	propane	Amount-of-substance fraction	1	10	mmol/mol	0.9	0.8	%	Yes	1	10	mmol/mol	0.9	0.8	%	Yes	PRGM, SGS and calibration	
20rev	Environmental	synthetic air	propane	Amount-of-substance fraction	1	10	mmol/mol	0.3	0.3	%	Yes	1	10	mmol/mol	0.3	0.3	%	Yes	PRGM and calibration	Approved on 30 July 2009
22	Environmental	nitrogen	propane	Amount-of-substance fraction	10	100	µmol/mol	1	1	%	Yes	10	100	µmol/mol	1	1	%	Yes	PRGM, SGS and calibration	
23	Environmental	nitrogen	propane	Amount-of-substance fraction	100	1000	µmol/mol	1	0.9	%	Yes	100	1000	µmol/mol	1	0.9	%	Yes	PRGM, SGS and calibration	
24	Environmental	nitrogen	propane	Amount-of-substance fraction	1	10	mmol/mol	0.9	0.8	%	Yes	1	10	mmol/mol	0.9	0.8	%	Yes	PRGM, SGS and calibration	
25rev	Environmental	synthetic air	methane	Amount-of-substance fraction	1	10	µmol/mol	0.5	0.45	%	Yes	1	10	µmol/mol	0.5	0.45	%	Yes	PRGM and calibration	Approved on 30 July 2009
26rev	Environmental	synthetic air	methane	Amount-of-substance fraction	10	100	µmol/mol	0.45	0.4	%	Yes	10	100	µmol/mol	0.45	0.4	%	Yes	PRGM and calibration	Approved on 30 July 2009
27rev	Environmental	synthetic air	methane	Amount-of-substance fraction	100	1000	µmol/mol	0.4	0.4	%	Yes	100	1000	µmol/mol	0.4	0.4	%	Yes	PRGM and calibration	Approved on 30 July 2009

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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?		
28	Environmental	synthetic air	methane	Amount-of-substance fraction	1	10	mmol/mol	0.4	0.4	%	Yes	1	10	mmol/mol	0.4	0.4	%	Yes	PRGM, SGS and calibration	
29	Environmental	nitrogen	methane	Amount-of-substance fraction	10	100	mmol/mol	0.4	0.4	%	Yes	10	100	mmol/mol	0.4	0.4	%	Yes	PRGM, SGS and calibration	
30	Environmental	synthetic air	sulphur dioxide	Amount-of-substance fraction	100	1000	nmol/mol	1	1	%	Yes	100	1000	nmol/mol	1	1	%	Yes	SGS and calibration	
31	Environmental	synthetic air	sulphur dioxide	Amount-of-substance fraction	100	1000	µmol/mol	0.5	0.1	%	Yes	100	1000	µmol/mol	0.5	0.1	%	Yes	PRGM and calibration	
33	Environmental	nitrogen	sulphur dioxide	Amount-of-substance fraction	1	10	mmol/mol	1	1	%	Yes	1	10	mmol/mol	1	1	%	Yes	PRGM, SGS and calibration	
34	Environmental	nitrogen	hydrogen sulphide	Amount-of-substance fraction	1	10	µmol/mol	2	2	%	Yes	1	10	µmol/mol	2	2	%	Yes	PRGM, SGS and calibration	
35	Environmental	nitrogen	hydrogen sulphide	Amount-of-substance fraction	10	100	µmol/mol	2	0.8	%	Yes	10	100	µmol/mol	2	0.8	%	Yes	PRGM, SGS and calibration	
36	Environmental	synthetic air	carbonyl sulphide	Amount-of-substance fraction	1	10	µmol/mol	2	2	%	Yes	1	10	µmol/mol	2	2	%	Yes	SGS and calibration	
37	Environmental	nitrogen	oxygen	Amount-of-substance fraction	10	100	mmol/mol	0.7	0.5	%	Yes	10	100	mmol/mol	0.7	0.5	%	Yes	PRGM, SGS and calibration	
38	Environmental	nitrogen	oxygen	Amount-of-substance fraction	100	500	mmol/mol	0.5	0.5	%	Yes	100	500	mmol/mol	0.5	0.5	%	Yes	PRGM, SGS and calibration	
39	Environmental	nitrogen	hydrogen chloride	Amount-of-substance fraction	10	100	µmol/mol	4	3	%	Yes	10	100	µmol/mol	4	3	%	Yes	SGS and calibration	
40	Environmental	nitrogen	hydrogen chloride	Amount-of-substance fraction	100	1000	µmol/mol	3	3	%	Yes	100	1000	µmol/mol	3	3	%	Yes	SGS and calibration	
41	Environmental	nitrogen	hydrogen fluoride	Amount-of-substance fraction	5	15	µmol/mol	5	3	%	Yes	5	15	µmol/mol	5	4	%	Yes	SGS and calibration	
42	Environmental	nitrogen	ammonia	Amount-of-substance fraction	10	100	µmol/mol	10	5	%	Yes	10	100	µmol/mol	10	5	%	Yes	PRGM, SGS and calibration	

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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?		
43	Forensic	synthetic air	ethanol	Amount-of-substance fraction	100	1600	µmol/mol	0.5	0.5	%	Yes	100	500	µmol/mol	0.5	0.5	%	Yes	PRGM, SGS and calibration	
44	Forensic	nitrogen	ethanol	Amount-of-substance fraction	100	1000	µmol/mol	0.5	0.5	%	Yes	100	500	µmol/mol	0.5	0.5	%	Yes	PRGM, SGS and calibration	
45	Environmental	nitrogen	formaldehyde	Amount-of-substance fraction	1	10	µmol/mol	5	5	%	Yes	1	10	µmol/mol	5	5	%	Yes	SGS and calibration	
47rev	Environmental	nitrogen	benzene	Amount-of-substance fraction	10	100	nmol/mol	1.5	1	%	Yes	10	100	nmol/mol	1.5	1	%	Yes	PRGM and calibration	Approved on 30 July 2009
48	Environmental	nitrogen	1,3-butadiene	Amount-of-substance fraction	5	15	nmol/mol	5	5	%	Yes	5	15	nmol/mol	5	5	%	Yes	PRGM, SGS and calibration	
50	Fuel	natural gas	methane	Amount-of-substance fraction	634	980	mmol/mol	0.3	0.3	%	Yes	634	980	mmol/mol	0.3	0.3	%	Yes	PRGM, SGS and calibration	
			ethane		1	110	mmol/mol	1	1	%	Yes	1	110	mmol/mol	1	1	%	Yes		
			propane		0.5	80	mmol/mol	1	1	%	Yes	0.5	80	mmol/mol	1	1	%	Yes		
			i-butane		0.1	12	mmol/mol	1	1	%	Yes	0.1	12	mmol/mol	1	1	%	Yes		
			n-butane		0.1	12	mmol/mol	1	1	%	Yes	0.1	12	mmol/mol	1	1	%	Yes		
			i-pentane		0.05	35	mmol/mol	1.5	1.5	%	Yes	0.05	35	mmol/mol	1.5	1.5	%	Yes		
			n-pentane		0.05	3	mmol/mol	1.5	2	%	Yes	0.05	3	mmol/mol	1.5	2	%	Yes		
			neo-pentane		0.05	35	mmol/mol	1.5	1.5	%	Yes	0.05	35	mmol/mol	1.5	1.5	%	Yes		
			hexane		0.05	35	mmol/mol	1.5	1.5	%	Yes	0.05	35	mmol/mol	1.5	1.5	%	Yes		
			nitrogen		2	120	mmol/mol	1	1	%	Yes	2	120	mmol/mol	1	1	%	Yes		
			carbon dioxide		0.5	80	mmol/mol	1	1	%	Yes	0.5	80	mmol/mol	1	1	%	Yes		
			helium		50	1000	µmol/mol	5	1.5	%	Yes									
			hydrogen sulphide		50	1000	µmol/mol	3	3	%	Yes									
			carbonyl sulphide		50	1000	µmol/mol	3	3	%	Yes									
51	Environmental	nitrogen	benzene	Amount-of-substance fraction	1	10	nmol/mol	3	3	%	Yes	1	10	nmol/mol	3	3	%	Yes	PRGM, SGS and calibration	
			toluene		1	10	nmol/mol	5	5	%	Yes	1	10	nmol/mol	5	5	%	Yes		
			ethylbenzene		1	10	nmol/mol	5	5	%	Yes	1	10	nmol/mol	5	5	%	Yes		
			o-xylene		1	10	nmol/mol	5	5	%	Yes	1	10	nmol/mol	5	5	%	Yes		
			m-xylene		1	10	nmol/mol	5	5	%	Yes	1	10	nmol/mol	5	5	%	Yes		
			p-xylene		1	10	nmol/mol	5	5	%	Yes	1	10	nmol/mol	5	5	%	Yes		

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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?		
52	Environmental	nitrogen	benzene	Amount-of-substance fraction	10	100	nmol/mol	3.5	3.5	%	Yes	10	100	nmol/mol	3.5	3.5	%	Yes	PRGM, SGS and calibration	
			toluene		10	100	nmol/mol	3.5	3.5	%	Yes	10	100	nmol/mol	3.5	3.5	%	Yes		
			ethylbenzene		10	100	nmol/mol	5	5	%	Yes	10	100	nmol/mol	5	5	%	Yes		
			o-xylene		10	100	nmol/mol	5	5	%	Yes	10	100	nmol/mol	5	5	%	Yes		
			m-xylene		10	100	nmol/mol	5	5	%	Yes	10	100	nmol/mol	5	5	%	Yes		
			p-xylene		10	100	nmol/mol	5	5	%	Yes	10	100	nmol/mol	5	5	%	Yes		
53	Environmental	nitrogen	ethyne	Amount-of-substance fraction	2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes	PRGM, SGS and calibration	
			ethene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			ethane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			ethylbenzene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			propene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			propane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			1,3-butadiene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			1-butene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			cis-2-butene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			trans-2-butene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			iso-butane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			n-butane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			2-methyl-1,3-butadiene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			cis-pentene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			trans-2-pentene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			iso-pentane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			n-pentane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			n-hexane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			3-methyl-pentane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
			2-methyl-pentane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes		
n-heptane		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes					
benzene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes					
toluene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes					
o-xylene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes					
m-xylene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	4	4	%	Yes					
1,3,5-trimethylbenzene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	10	10	%	Yes					

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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?		
			1,2,4 trimethylbenzene		2	50	nmol/mol	3	3	%	Yes	10	100	nmol/mol	10	10	%	Yes		
54	Environmental	nitrogen	ethyne	Amount-of-substance fraction	2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes	PRGM, SGS and calibration	
			ethene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			ethane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			ethylbenzene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			propene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			propane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			1,3-butadiene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			1-butene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			cis-2-butene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			trans-2-butene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			iso-butane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			n-butane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			iso-butylene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			2-methylpentane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			2-methyl-1,3-butadiene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			cis-pentene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			trans-2-pentene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			3-methylpentane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			2-methylpentane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			2,3-methylpentane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			n-hexane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			cyclohexane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			propyne		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			n-heptane		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			benzene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			toluene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			o-xylene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			m-xylene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
			1,3,5-trimethylbenzene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		

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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?		
			1,2,4-trimethylbenzene		2	10	nmol/mol	3	3	%	Yes	2	10	nmol/mol	3	3	%	Yes		
55	Environmental	nitrogen	dichloromethane	Amount-of-substance fraction	20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes	PRGM, SGS and calibration	
			trichlorofluoromethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,1-dichloroethene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			chloroform		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,2-dichloroethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,1,1-trichloroethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			tetrachloromethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,2-dichloropropane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			trichloroethene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,2-dibromoethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			tetrachloroethene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			chlorobenzene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,2-dichlorobenzene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			1,2-dichloroethane		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		
			trans-1,3-dichloropropene		20	200	nmol/mol	5	5	%	Yes	20	200	nmol/mol	5	5	%	Yes		

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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
			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?		
56	Forensic	synthetic air	ethanol	Amount-of-substance fraction	100	200	µmol/mol	1.5	1.5	%	Yes	100	200	µmol/mol	1.5	1.5	%	Yes	PRGM, SGS and calibration	
			methanol		10	100	µmol/mol	5	5	%	Yes	10	100	µmol/mol	5	5	%	Yes		
			acetone		10	100	µmol/mol	5	5	%	Yes	10	100	µmol/mol	5	5	%	Yes		
			methylethyl ketone		100	1000	µmol/mol	5	5	%	Yes	100	1000	µmol/mol	5	5	%	Yes		
			toluene		10	100	µmol/mol	5	5	%	Yes	10	100	µmol/mol	5	5	%	Yes		
57	Environmental	synthetic air	methane	Amount-of-substance fraction	1	10	µmol/mol	3	3	%	Yes	1	10	µmol/mol	3	3	%	Yes	PRGM, SGS and calibration	
			ethane		1	10	µmol/mol	3	3	%	Yes	1	10	µmol/mol	3	3	%	Yes		
			toluene		100	1000	nmol/mol	3	3	%	Yes	100	1000	nmol/mol	3	3	%	Yes		
			benzene		100	1000	nmol/mol	3	3	%	Yes	100	1000	nmol/mol	3	3	%	Yes		
			dichloromethane		100	1000	nmol/mol	3	3	%	Yes	100	1000	nmol/mol	3	3	%	Yes		
58	Environmental	nitrogen	carbon monoxide		10	100	µmol/mol	3	3	%	Yes	10	100	µmol/mol	3	3	%	Yes	PRGM, SGS and calibration	
			sulphur dioxide	Amount-of-substance fraction	50	150	µmol/mol	3	3	%	Yes	50	150	µmol/mol	3	3	%	Yes		
			nitrogen monoxide		50	150	µmol/mol	3	3	%	Yes	50	150	µmol/mol	3	3	%	Yes		
			carbon monoxide		50	150	µmol/mol	3	3	%	Yes	50	150	µmol/mol	3	3	%	Yes		
59	Environmental	nitrogen	carbon dioxide		100	200	mmol/mol	3	3	%	Yes	100	200	mmol/mol	3	3	%	Yes	PRGM, SGS and calibration	
			methane	Amount-of-substance fraction	500	950	mmol/mol	1	1	%	Yes	500	950	mmol/mol	1	1	%	Yes		
			carbon dioxide		300	500	mmol/mol	1	1	%	Yes	300	500	mmol/mol	1	1	%	Yes		
			oxygen		5	20	mmol/mol	1	1	%	Yes	5	20	mmol/mol	1	1	%	Yes		
			ethanethiol		100	1000	nmol/mol	3	3	%	Yes	100	1000	nmol/mol	3	3	%	Yes		
60	High purity	nitrogen	carbon monoxide	Amount-of-substance fraction	1	10	nmol/mol	10	10	%	Yes								Calibration	
			carbon dioxide		0.1	1	nmol/mol	10	10	%	Yes									
			hydrogen sulphide		100	1000	nmol/mol	1	1	%	Yes	100	1000	nmol/mol	1	1	%	Yes		

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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
			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?		
			oxygen		10	100	nmol/mol	10	10	%	Yes									
			water		10	100	nmol/mol	10	10	%	Yes									
			carbonyl sulphide		0.5	10	nmol/mol	10	10	%	Yes									
			sulfur dioxide		0.5	10	nmol/mol	10	10	%	Yes									
31b	Environmental	synthetic air	sulphur dioxide	Amount-of-substance fraction	10	100	µmol/mol	1	0.5	%	Yes	10	100	µmol/mol	1	0.5	%	Yes	PRGM and calibration	Approved on 29 April 2005
49 rev	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	5	35	mmol/mol	0.2	0.2	%	Yes	5	35	mmol/mol	0.2	0.2	%	Yes	PRGM, SGS and calibration	Approved on 29 April 2005
			carbon dioxide		60	140	mmol/mol	0.2	0.2	%	Yes	60	140	mmol/mol	0.2	0.2	%	Yes		
			propane		0.2	2	mmol/mol	0.5	0.5	%	Yes	0.2	2	mmol/mol	0.5	0.5	%	Yes		
5b	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	1	10	µmol/mol	1	0.5	%	Yes	1	10	µmol/mol	1	0.5	%	Yes	PRGM, SGS and calibration	Approved on 31 March 2006
12 rev	Environmental	nitrogen	nitrogen monoxide	Amount-of-substance fraction	1	10	µmol/mol	0.4	0.4	%	Yes	1	10	µmol/mol	0.6	0.6	%	Yes	PRGM, SGS and calibration	Approved on 02 July 2007
32b	Environmental	nitrogen	sulphur dioxide	Amount-of-substance fraction	10	100	µmol/mol	1.0	0.5	%	Yes	10	100	µmol/mol	1.0	0.5	%	Yes	PRGM, SGS and calibration	Approved on 02 July 2007
30b	Environmental	nitrogen	sulphur dioxide	Amount-of-substance fraction	100	1000	nmol/mol	2.0	1.5	%	Yes	100	1000	nmol/mol	2.0	2.0	%	Yes	SGS and calibration	Approved on 02 July 2007
11 rev2	Environmental	nitrogen	nitrogen monoxide	Amount-of-substance fraction	100	1000	nmol/mol	0.6	0.4	%	Yes	100	1000	nmol/mol	1.0	0.9	%	Yes	PRGM, SGS and calibration	Approved on 24 June 2008
13 rev	Environmental	nitrogen	nitrogen monoxide	Amount-of-substance fraction	10	100	µmol/mol	0.4	0.3	%	Yes	1	10	µmol/mol	0.6	0.3	%	Yes	PRGM, SGS and calibration	Approved on 24 June 2008
35b	Environmental	nitrogen	hydrogen sulphide	Amount-of-substance fraction	100	500	µmol/mol	0.8	0.5	%	Yes	100	500	µmol/mol	0.8	0.5	%	Yes	PRGM, SGS and calibration	Approved on 24 June 2008
32rev	Environmental	nitrogen	sulphur dioxide	Amount-of-substance fraction	100	1000	µmol/mol	0.5	0.5	%	Yes	100	1000	µmol/mol	0.5	0.5	%	Yes	SGS and calibration	Approved on 24 June 2008
61rev2	Fuel	synthetic natural gas	nitrogen	Amount-of-substance fraction	0.2	200	mmol/mol	0.15	0.1	%	Yes	0.2	200	mmol/mol	0.15	0.1	%	Yes	PRGM and calibration	Approved on 30 July 2009
			carbon dioxide		0.5	100	mmol/mol	0.2	0.1	%	Yes	0.5	100	mmol/mol	0.2	0.1	%	Yes		

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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
			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?		
			methane		600	980	mmol/mol	0.04	0.04	%	Yes	600	980	mmol/mol	0.04	0.04	%	Yes		
			ethane		1	200	mmol/mol	0.3	0.2	%	Yes	1	200	mmol/mol	0.3	0.2	%	Yes		
			propane		0.5	100	mmol/mol	0.15	0.12	%	Yes	0.5	100	mmol/mol	0.15	0.12	%	Yes		
			i-butane		0.1	15	mmol/mol	0.35	0.15	%	Yes	0.1	15	mmol/mol	0.35	0.15	%	Yes		
			n-butane		0.1	15	mmol/mol	0.35	0.15	%	Yes	0.1	15	mmol/mol	0.35	0.15	%	Yes		
			neo-pentane		0.2	20	mmol/mol	2	1.5	%	Yes	0.2	20	mmol/mol	2	1.5	%	Yes		
			i-pentane		0.2	20	mmol/mol	1	0.4	%	Yes	0.2	20	mmol/mol	1	0.4	%	Yes		
			n-pentane		0.2	20	mmol/mol	1	0.4	%	Yes	0.2	20	mmol/mol	1	0.4	%	Yes		
			n-hexane		0.1	20	mmol/mol	1	0.4	%	Yes	0.1	20	mmol/mol	1	0.4	%	Yes		
			helium		0.05	10	mmol/mol	1	0.5	%	Yes	0.05	10	mmol/mol	1	0.5	%	Yes		
63	Environmental	nitrogen	ethane	Amount-of-substance fraction	1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes	PRGM and calibration	Approved on 30 July 2009
			ethene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			propane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			propene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			iso-butane		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.5	%	Yes		
			n-butane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			ethyne		1	50	nmol/mol	2	2	%	Yes	1	50	nmol/mol	2	1.5	%	Yes		
			trans-2-butene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			1-butene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			cis-2-butene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			2-methylbutane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			n-pentane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			1,3-butadiene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			trans-2-pentene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			1-pentene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			2-methylpentane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			n-hexane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			2-methyl-1,3-butadiene		1	50	nmol/mol	2	2	%	Yes	1	50	nmol/mol	2	1.5	%	Yes		
			n-heptane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			benzene		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			2,2,4-trimethylpentane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			n-octane		1	50	nmol/mol	1.5	1.5	%	Yes	1	50	nmol/mol	1.5	1	%	Yes		
			toluene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1	%	Yes		

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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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
			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?		
			ethylbenzene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.2	%	Yes		
			m-xylene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.2	%	Yes		
			p-xylene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.2	%	Yes		
			o-xylene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.2	%	Yes		
			1,3,5-trimethylbenzene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.5	%	Yes		
			1,2,4-trimethylbenzene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.5	%	Yes		
			1,2,3-trimethylbenzene		1	50	nmol/mol	2.5	2.5	%	Yes	1	50	nmol/mol	2.5	1.5	%	Yes		
64	Environmental	nitrogen	benzene	Amount-of-substance fraction	100	1000	nmol/mol	1	0.8	%	Yes	100	1000	nmol/mol	1	0.8	%	Yes	PRGM and calibration	Approved on 30 July 2009
62rev	Fuel	methane	hydrogen sulphide	Amount-of-substance fraction	1	10	µmol/mol	2.5	1.6	%	Yes	1	10	µmol/mol	3.5	2.5	%	Yes	PRGM and calibration	Approved on 19 July 2010
			carbonyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			carbon disulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			dimethyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			ethyl methyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			diethyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			methanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			ethanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			2-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			1-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			2-methyl-2-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			butanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			tetrahydrothiophene		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
62b	Fuel	methane	hydrogen sulphide	Amount-of-substance fraction	10	100	µmol/mol	1.6	1.2	%	Yes	10	100	µmol/mol	2.5	2.0	%	Yes	PRGM and calibration	Approved on 19 July 2010
			carbonyl sulphide		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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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
			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?		
			carbon disulphide		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			dimethyl sulphide		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			ethyl methyl sulphide		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			diethyl sulphide		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			methanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			ethanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			2-propanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			1-propanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			2-methyl-2-propanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			butanethiol		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
			tetrahydrothiophene		10	100	µmol/mol	1.0	1.0	%	Yes	10	100	µmol/mol	1.3	1.3	%	Yes		
62c	Fuel	methane	carbonyl sulphide	Amount-of-substance fraction	100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes	PRGM and calibration	Approved on 19 July 2010
			carbon disulphide		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			dimethyl sulphide		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			ethyl methyl sulphide		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			diethyl sulphide		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			methanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			ethanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			2-propanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			1-propanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			2-methyl-2-propanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			butanethiol		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
			tetrahydrothiophene		100	1000	µmol/mol	1.0	1.0	%	Yes	100	1000	µmol/mol	1.3	1.3	%	Yes		
64a	Fuel	nitrogen	carbonyl sulphide	Amount-of-substance fraction	1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes	PRGM and calibration	Approved on 19 July 2010
			carbon disulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		

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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?		
			dimethyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			ethyl methyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			diethyl sulphide		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			methanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			ethanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			2-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			1-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			2-methyl-2-propanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			butanethiol		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
			tetrahydrothiophene		1	10	µmol/mol	2.5	1.0	%	Yes	1	10	µmol/mol	3.0	1.3	%	Yes		
64b	Fuel	nitrogen	carbonyl sulphide	Amount-of-substance fraction	10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes	PRGM and calibration	Approved on 19 July 2010
			carbon disulphide		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			dimethyl sulphide		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			ethyl methyl sulphide		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			diethyl sulphide		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			methanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			ethanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			2-propanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			1-propanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			2-methyl-2-propanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			butanethiol		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
			tetrahydrothiophene		10	1000	µmol/mol	1.0	1.0	%	Yes	10	1000	µmol/mol	1.3	1.3	%	Yes		
1 b	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	1	10	µmol/mol	0.3	0.2	%	Yes	1	10	µmol/mol	0.3	0.2	%	Yes	PRGM and calibration	Approved on 19 July 2010
1 rev	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	10	100	µmol/mol	0.1	0.1	%	Yes	10	100	µmol/mol	0.1	0.1	%	Yes	PRGM and calibration	Approved on 19 July 2010

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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
			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?		
2 rev	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	100	1000	µmol/mol	0.1	0.08	%	Yes	100	1000	µmol/mol	0.1	0.08	%	Yes	PRGM and calibration	Approved on 19 July 2010
3rev	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	1	10	mmol/mol	0.08	0.07	%	Yes	1	10	mmol/mol	0.08	0.07	%	Yes	PRGM and calibration	Approved on 19 July 2010
4 rev	Environmental	nitrogen	carbon monoxide	Amount-of-substance fraction	10	100	mmol/mol	0.07	0.06	%	Yes	10	100	mmol/mol	0.07	0.06	%	Yes	PRGM and calibration	Approved on 19 July 2010
5b rev	Environmental	synthetic air	carbon monoxide	Amount-of-substance fraction	1	10	µmol/mol	0.3	0.1	%	Yes	1	10	µmol/mol	0.1	0.1	%	Yes	PRGM and calibration	Approved on 19 July 2010
6 rev	Environmental	synthetic air	carbon monoxide	Amount-of-substance fraction	10	100	µmol/mol	0.1	0.1	%	Yes	10	100	µmol/mol	0.1	0.08	%	Yes	PRGM and calibration	Approved on 19 July 2010
7 rev	Environmental	synthetic air	carbon monoxide	Amount-of-substance fraction	100	1000	µmol/mol	0.1	0.08	%	Yes	100	1000	µmol/mol	0.08	0.07	%	Yes	PRGM and calibration	Approved on 19 July 2010
7b	Environmental	synthetic air	carbon monoxide	Amount-of-substance fraction	1	10	mmol/mol	0.08	0.07	%	Yes	1	10	mmol/mol	0.07	0.06	%	Yes	PRGM and calibration	Approved on 19 July 2010
8 rev	Environmental	nitrogen	carbon dioxide	Amount-of-substance fraction	100	1000	µmol/mol	0.4	0.3	%	Yes	100	1000	µmol/mol	0.4	0.3	%	Yes	PRGM and calibration	Approved on 19 July 2010
9 rev	Environmental	nitrogen	carbon dioxide	Amount-of-substance fraction	1	10	mmol/mol	0.3	0.2	%	Yes	1	10	mmol/mol	0.3	0.2	%	Yes	PRGM and calibration	Approved on 19 July 2010
10 rev	Environmental	nitrogen	carbon dioxide	Amount-of-substance fraction	10	100	mmol/mol	0.2	0.1	%	Yes	10	100	mmol/mol	0.2	0.1	%	Yes	PRGM and calibration	Approved on 19 July 2010
10b	Environmental	nitrogen	carbon dioxide	Amount-of-substance fraction	100	200	mmol/mol	0.1	0.1	%	Yes	100	200	mmol/mol	0.1	0.1	%	Yes	PRGM and calibration	Approved on 19 July 2010
8b2	Environmental	synthetic air	carbon dioxide	Amount-of-substance fraction	100	1000	µmol/mol	0.4	0.3	%	Yes	100	1000	µmol/mol	0.4	0.3	%	Yes	PRGM and calibration	Approved on 19 July 2010
9b2	Environmental	synthetic air	carbon dioxide	Amount-of-substance fraction	1	10	mmol/mol	0.3	0.2	%	Yes	1	10	mmol/mol	0.3	0.2	%	Yes	PRGM and calibration	Approved on 19 July 2010
10b2	Environmental	synthetic air	carbon dioxide	Amount-of-substance fraction	10	100	mmol/mol	0.2	0.1	%	Yes	10	100	mmol/mol	0.2	0.1	%	Yes	PRGM and calibration	Approved on 19 July 2010

Amount of substance, Gases, United Kingdom, NPL (National Physical Laboratory)

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
			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?		
37b	Environmental	nitrogen	oxygen	Amount-of-substance fraction	10	100	µmol/mol	0.6	0.3	%	Yes	10	100	µmol/mol	0.3	0.25	%	Yes	PRGM and calibration	Approved on 19 July 2010
37c	Environmental	nitrogen	oxygen	Amount-of-substance fraction	100	1000	µmol/mol	0.3	0.2	%	Yes	100	1000	µmol/mol	0.25	0.2	%	Yes	PRGM and calibration	Approved on 19 July 2010
37d	Environmental	nitrogen	oxygen	Amount-of-substance fraction	1	10	mmol/mol	0.2	0.2	%	Yes	1	10	mmol/mol	0.2	0.2	%	Yes	PRGM and calibration	Approved on 19 July 2010
46rev	Environmental Gases	purified air	ozone	Amount-of-substance fraction	0	1000	nmol/mol	Q[1.1, 0.022 x(O ₃)]		nmol/mol	no								Instrumental comparison against primary UV photometer	Approved on 19 July 2010