



INTERNATIONAL STANDARD ISO 14912:2003 TECHNICAL CORRIGENDUM 1

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Gas analysis — Conversion of gas mixture composition data

TECHNICAL CORRIGENDUM 1

Analyse des gaz — Conversion des données de composition de mélanges gazeux

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to ISO 14912:2003 was prepared by Technical Committee ISO/TC 158, *Analysis of gases*.

The objective of this Corrigendum is to correct uncertainty data for errors that occurred in data processing (inconsistent rounding, transcription errors).

In the original version of Table C.1, errors occurred in the preparation of the data for the uncertainty of the molar masses [4th column, $u(M)$]. These data were obtained by uncertainty propagation from published data for the uncertainty of atomic weights of the elements concerned, and subsequent rounding to four decimal places. This rounding was performed inconsistently. In addition, for one gas (Argon) a transcription error occurred. These errors are corrected in Table C.1.

In the computer programme CONVERT that is available for ISO 14912 (see Annex E), the uncertainty data are used as obtained from the calculation, i.e. without rounding. Therefore, this programme is not affected.

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Replace Table C.1 with the following table.

Table C.1 — Mixture component data

Component	Formula	M	$u(M)$	B'_0	B'_{30}	$u(B'_{\text{dat}})$	Z_{amb}
Acetylene	C_2H_2	26,037 3	0,001 6	- 8,4	- 5,8	0,5	0,992 90
Air	—	28,962 5	0,000 2	- 0,58	- 0,27	0,02	0,999 58
Ammonia	NH_3	17,030 6	0,000 2	- 14,9	- 9,7	0,5	0,987 70
Argon	Ar	39,948 0	0,001 0	- 0,96	- 0,61	0,05	0,999 22
Arsine	AsH_3	77,945 4	0,000 2	- 12	- 9	0,5	0,989 50
Benzene	C_6H_6	78,112 0	0,004 8	- 82	- 57	5	—
Boron trichloride	BCl_3	117,169 0	0,007 5	- 39	- 29	3	0,966 00
Boron trifluoride	BF_3	67,806 0	0,007 0	- 6	- 4	0,5	0,995 00
Bromochlorodifluoromethane	$CBrClF_2$	165,364 2	0,001 6	- 34	- 24	0,5	0,971 00
Bromomethane	CH_3Br	94,938 5	0,001 3	- 31,1	- 20,5	0,5	0,974 20
Bromotrifluoromethane	$CBrF_3$	148,909 9	0,001 3	- 17	- 13	0,5	0,985 00
1,2-Butadiene	C_4H_6	54,090 4	0,003 2	- 45	- 31	5	0,962 00
1,3-Butadiene	C_4H_6	54,090 4	0,003 2	- 34	- 24	1	0,971 00
<i>n</i> -Butane	C_4H_{10}	58,122 2	0,003 3	- 42,2	- 28,9	0,2	0,964 45
1-Butene	C_4H_8	56,106 3	0,003 3	- 35	- 25	1	0,970 00
<i>cis</i> -2-Butene	C_4H_8	56,106 3	0,003 3	- 39	- 27	2	0,967 00
<i>trans</i> -2-Butene	C_4H_8	56,106 3	0,003 3	- 38	- 27	2	0,967 50
1-Butyne	C_4H_6	54,090 4	0,003 2	- 43,6	- 29,9	1	0,963 25
Carbon dioxide	CO_2	44,009 5	0,001 0	- 6,69	- 4,75	0,03	0,994 28
Carbon disulfide	CS_2	76,143 0	0,012 2	- 45	- 32	1	—
Carbon monoxide	CO	28,010 1	0,000 9	- 0,66	- 0,31	0,05	0,999 52
Carbonyl chloride	$COCl_2$	98,915 5	0,002 0	- 32	- 22	3	0,973 00
Carbonyl fluoride	COF_2	66,006 9	0,000 9	- 8	- 6	0,2	0,993 00
Carbonyl sulfide	COS	60,076 0	0,006 2	- 14,9	- 10,8	0,5	0,987 15
Chlorine	Cl_2	70,905 4	0,001 8	- 15,8	- 11,8	0,1	0,986 20
Chlorine trifluoride	ClF_3	92,447 9	0,000 9	- 34	- 24	3	0,971 00
1-Chloro-1,1-difluoroethane	$C_2H_3ClF_2$	100,495 0	0,001 8	- 49,6	- 31	0,2	0,959 70
Chlorodifluoromethane	$CHClF_2$	86,468 1	0,001 2	- 19,1	- 13,7	0,1	0,983 60
Chloroethane	C_2H_5Cl	64,513 8	0,001 9	- 43	- 29	3	0,964 00
Chloromethane	CH_3Cl	50,487 2	0,001 2	- 23,1	- 15,8	0,1	0,980 55
Chloropentafluoride	ClF_5	130,444 7	0,000 9	- 27,5	- 19,3	1	0,976 60
Chloropentafluoroethane	C_2ClF_5	154,466 1	0,001 8	- 22,5	- 15,8	0,1	0,980 85
1-Chloro-1,1,2,2-tetrafluoroethane	C_2HClF_4	136,475 7	0,001 8	- 36,5	- 25,3	1	0,969 10
Chlorotrifluoroethene	C_2ClF_3	116,469 3	0,001 8	- 26	- 18	0,2	0,978 00
Chlorotrifluoromethane	$CClF_3$	104,458 6	0,001 2	- 12,1	- 8,6	0,1	0,989 65
Cyanogen	C_2N_2	52,035 0	0,001 6	- 24	- 15	0,5	0,980 50

Table C.1 (continued)

Component	Formula	M	$u(M)$	B'_0	B'_{30}	$u(B'_{\text{dat}})$	Z_{amb}
Cyanogen chloride	CCIN	61,470 1	0,001 2	- 35	- 23	3	0,971 00
Cyclobutane	C ₄ H ₈	56,106 3	0,003 3	- 36,2	- 25,3	0,5	0,969 25
Cyclohexane	C ₆ H ₁₂	84,160 0	0,004 9	- 101	- 66	5	—
Cyclopentane	C ₅ H ₁₀	70,133 0	0,004 1	- 64	- 43	3	—
Cyclopropane	C ₃ H ₆	42,079 7	0,002 5	- 21,1	- 15,0	0,1	0,981 95
<i>n</i> -Decane	C ₁₀ H ₂₂	142,282 0	0,008 2	- 558	- 312	10	—
Deuterium	D ₂	4,028 0	0,000 3	- 0,58	- 0,56	0,05	1,000 57
Diborane	B ₂ H ₆	27,670 0	0,014 1	- 10	- 7	0,5	0,991 50
Dichlorodifluoromethane	CCl ₂ F ₂	120,913 0	0,001 9	- 27,5	- 18,3	0,2	0,977 10
Dichlorofluoromethane	CHCl ₂ F	102,922 4	0,001 9	- 31,1	- 22,1	1	0,973 40
Dichlorosilane	SiH ₂ Cl ₂	101,006 8	0,001 8	- 34	- 25	3	0,970 50
1,2-Dichlorotetrafluoroethane	C ₂ Cl ₂ F ₄	170,920 4	0,002 4	- 39,9	- 27,5	1	0,966 30
1,1-Difluoroethane	C ₂ H ₄ F ₂	66,050 0	0,001 6	- 30,6	- 20,0	0,2	0,974 70
1,1-Difluoroethene	C ₂ H ₂ F ₂	64,034 1	0,001 6	- 10,4	- 7,4	0,5	0,991 10
2,2-Dimethylbutane	C ₆ H ₁₄	86,175 0	0,004 9	- 82,9	- 56,6	1	—
2,3-Dimethylbutane	C ₆ H ₁₄	86,175 0	0,004 9	- 81	- 59	5	—
Dimethyl ether	C ₂ H ₆ O	46,068 4	0,001 7	- 27	- 19	0,5	0,977 00
Dimethylamine	C ₂ H ₇ N	45,083 7	0,001 7	- 38,3	- 25,8	0,5	0,967 95
Disilane	Si ₂ H ₆	62,218 6	0,000 7	- 26	- 19	0,5	0,977 50
Ethane	C ₂ H ₆	30,069 0	0,001 7	- 9,86	- 7,16	0,05	0,991 49
Ethene	C ₂ H ₄	28,053 2	0,001 6	- 7,43	- 5,39	0,05	0,993 59
Ethyl methyl ether	C ₃ H ₈ O	60,095 0	0,002 5	- 33,7	- 22,8	1	0,971 75
Ethylamine	C ₂ H ₇ N	45,083 7	0,001 7	- 45,1	- 29,9	0,5	—
Ethylbenzene	C ₈ H ₁₀	106,165 0	0,006 5	- 233	- 137	10	—
Ethylcyclohexane	C ₈ H ₁₆	112,213 0	0,006 5	- 227	- 138	10	—
Ethylcyclopentane	C ₇ H ₁₄	98,186 0	0,005 7	- 157	- 98	10	—
Ethylene oxide	C ₂ H ₄ O	44,052 6	0,001 7	- 32	- 23	3	0,972 50
Fluorine	F ₂	37,996 8	0,000 0	- 0,66	- 0,37	0,02	0,999 49
Fluoroethane	C ₂ H ₅ F	48,059 5	0,001 6	- 19	- 14	0,5	0,983 50
Fluoromethane	CH ₃ F	34,032 9	0,000 8	- 11,7	- 8,0	0,2	0,990 15
Germane	GeH ₄	76,642 0	0,020 3	- 9,1	- 6,6	1	0,992 15
Helium	He	4,002 6	0,000 0	- 0,53	- 0,47	0,05	1,000 50
1-H-Heptafluoropropane	C ₃ HF ₇	170,029 0	0,002 4	- 42	- 29	0,5	0,964 50
<i>n</i> -Heptane	C ₇ H ₁₆	100,202 0	0,005 7	- 168	- 106	10	—
<i>n</i> -Hexane	C ₆ H ₁₄	86,176 0	0,004 9	- 106	- 70	5	—

Table C.1 (continued)

Component	Formula	M	$u(M)$	B'_0	B'_{30}	$u(B'_{\text{dat}})$	Z_{amb}
Hexafluoroethane	C_2F_6	138,011 8	0,001 6	- 14,2	- 9,94	0,02	0,987 93
Hexafluoropropene	C_3F_6	150,023 0	0,002 4	- 31	- 23	1	0,973 00
Hydrogen	H_2	2,015 9	0,000 1	- 0,605	- 0,574	0,001	1,000 59
Hydrogen bromide	HBr	80,911 9	0,001 0	- 9,6	- 7,0	1	0,991 70
Hydrogen chloride	HCl	36,460 6	0,000 9	- 9,3	- 6,4	0,1	0,992 15
Hydrogen cyanide	HCN	27,025 4	0,000 8	- 111	- 64	5	—
Hydrogen fluoride	HF	20,006 3	0,000 1	- 35,6	- 24,1	3	—
Hydrogen iodide	HI	127,912 4	0,000 1	- 15,1	- 11,1	1	0,986 90
Hydrogen selenide	H_2Se	80,976 0	0,030 0	- 12,9	- 9,5	1	0,988 80
Hydrogen sulfide	H_2S	34,082 0	0,006 1	- 10	- 7	0,5	0,991 50
Isobutane	C_4H_{10}	58,122 2	0,003 3	- 37,9	- 27,1	1	0,967 50
Isobutene	C_4H_8	56,106 3	0,003 3	- 35	- 25	1	0,970 00
Isopentane	C_5H_{12}	72,149 0	0,004 1	- 58	- 42	5	—
Krypton	Kr	83,800 0	0,010 1	- 2,74	- 1,95	0,02	0,997 66
Methane	CH_4	16,042 5	0,000 9	- 2,36	- 1,63	0,005	0,998 01
Methanol	CH_4O	32,041 9	0,000 9	- 173	- 73	5	—
Methylamine	CH_5N	31,057 1	0,000 9	- 30,7	- 19,8	0,1	0,974 75
Methylcyclohexane	C_7H_{14}	98,186 0	0,005 7	- 143,3	- 91,1	1	—
Methylcyclopentane	C_6H_{12}	84,160 0	0,004 9	- 96,8	- 63,7	1	—
Methyl mercaptan	CH_4S	48,108 0	0,006 2	- 27,4	- 19,3	1	0,976 65
2-Methylpentane	C_6H_{14}	86,175 0	0,004 9	- 90,4	- 65,1	1	—
3-Methylpentane	C_6H_{14}	86,175 0	0,004 9	- 90,3	- 64,3	1	—
Methyl vinyl ether	C_3H_6O	58,079 0	0,002 5	- 34	- 24	3	0,971 00
Neon	Ne	20,179 7	0,000 6	- 0,47	- 0,46	0,02	1,000 47
Neopentane	C_5H_{12}	72,149 0	0,004 1	- 53,1	- 35,4	1	0,955 75
Nitric oxide	NO	30,006 1	0,000 3	- 1,12	- 0,75	0,05	0,999 07
Nitrogen	N_2	28,013 5	0,000 1	- 0,452	- 0,151	0,001	0,999 70
Nitrogen dioxide	NO_2	46,005 5	0,000 6	- 26,4	- 17,0	2	—
Nitrogen trifluoride	NF_3	71,001 9	0,000 1	- 5	- 3	0,5	0,996 00
Nitrosyl chloride	NOCl	65,458 8	0,000 9	- 21	- 14	0,5	0,982 50
Nitrous oxide	N_2O	44,012 9	0,000 3	- 7,18	- 5,08	0,05	0,993 87
<i>n</i> -Nonane	C_9H_{20}	128,255 0	0,007 4	- 382	- 222	10	—
<i>n</i> -Octane	C_8H_{18}	114,229 0	0,006 6	- 255	- 155	10	—
Octafluoro-2-butene	C_4F_8	200,030 0	0,003 2	- 54	- 37	5	0,954 50
Octafluorocyclobutane	C_4F_8	200,030 0	0,003 2	- 43,7	- 29,8	0,5	0,963 25
Octafluoropropane	C_3F_8	188,019 0	0,002 4	- 30,1	- 20,6	0,5	0,974 65

Table C.1 (continued)

Component	Formula	M	$u(M)$	B'_0	B'_{30}	$u(B'_{\text{dat}})$	Z_{amb}
Oxygen	O ₂	31,998 8	0,000 6	– 0,97	– 0,60	0,02	0,999 22
Oxygen difluoride	OF ₂	53,996 2	0,000 3	– 3,3	– 2,3	0,3	0,997 20
<i>n</i> -Pentane	C ₅ H ₁₂	72,149 0	0,004 1	– 74	– 48,5	1	—
1-Pentene	C ₅ H ₁₀	70,133 0	0,004 1	– 61,1	– 42,1	0,5	—
Phosphine	PH ₃	33,997 6	0,000 2	– 9,2	– 6,7	0,1	0,992 05
Phosphorus pentafluoride	PF ₅	125,965 8	0,000 0	– 12,9	– 9,1	1	0,989 00
Phosphorus trifluoride	PF ₃	87,969 0	0,000 0	– 8,2	– 5,5	1	0,993 15
Propadiene	C ₃ H ₄	40,064 0	0,002 4	– 20,4	– 14,6	0,2	0,982 50
Propane	C ₃ H ₈	44,096 0	0,002 5	– 20,87	– 14,79	0,1	0,982 17
Propene	C ₃ H ₆	42,080 0	0,002 5	– 18,7	– 13,4	0,1	0,983 95
Propine	C ₃ H ₄	40,064 0	0,002 4	– 23,0	– 15,9	0,5	0,980 55
Silane	SiH ₄	32,117 3	0,000 4	– 7	– 5	0,2	0,994 00
Silicon tetrafluoride	SiF ₄	104,079 1	0,000 3	– 8	– 5	0,5	0,993 50
Sulfur dioxide	SO ₂	64,065 0	0,006 1	– 24	– 17	2	0,979 50
Sulfur hexafluoride	SF ₆	146,056 0	0,006 1	– 15,2	– 10,8	0,1	0,987 00
Sulfuryl fluoride	SO ₂ F ₂	102,062 0	0,006 1	– 15,5	– 11,4	1	0,986 55
Tetrafluoroethene	C ₂ F ₄	100,015 0	0,001 6	– 11,5	– 8,2	0,5	0,990 15
Tetrafluoromethane	CF ₄	88,004 3	0,000 8	– 4,9	– 3,4	0,05	0,995 85
Toluene	C ₇ H ₈	92,139 0	0,005 7	– 150	– 92,1	1	—
1,1,1-Trifluoroethane	C ₂ H ₃ F ₃	84,040 4	0,001 7	– 19,2	– 13,5	0,2	0,983 65
Trifluoromethane	CHF ₃	70,013 8	0,000 8	– 9,7	– 6,9	0,1	0,991 70
Trimethylamine	C ₃ H ₉ N	59,110 3	0,002 5	– 40,4	– 28,3	0,5	0,965 65
Tungsten hexafluoride	WF ₆	297,830 4	0,009 9	– 46	– 32	3	—
Vinyl bromide	C ₂ H ₃ Br	106,949 2	0,001 9	– 35	– 26	3	—
Vinyl chloride	C ₂ H ₃ Cl	62,497 9	0,001 8	– 22	– 16	1	0,981 00
Vinyl fluoride	C ₂ H ₃ F	46,043 6	0,001 6	– 15	– 10	0,5	0,987 50
Water	H ₂ O	18,015 3	0,000 3	– 80,75	– 42,61	0,1	—
Xenon	Xe	131,290 0	0,019 7	– 6,8	– 5,0	0,05	0,994 10
<i>m</i> -Xylene	C ₈ H ₁₀	106,165 0	0,006 5	– 248	– 145	10	—
<i>o</i> -Xylene	C ₈ H ₁₀	106,165 0	0,006 5	– 259	– 149	10	—
<i>p</i> -Xylene	C ₈ H ₁₀	106,165 0	0,006 5	– 246	– 144	10	—