

03 January 2006

GasAlertMicro 5 PID Correction Factors

Correction factors for chemicals with a specific CF value have been experimentally determined with the most recent version BW PID. Chemicals with CF values expressed as a range have values that may vary between batches of the chemical, or which are based on experience with prior version PID sensors and lamps. The “+” symbol indicates the chemical is detectable, but the CF for the chemical has not been experimentally determined. The “+” symbol is also used for chemicals that are detectable, but which are not present as vapor in standard temperature and pressure conditions (25°C, 1.0 atmosphere pressure).

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Acetaldehyde	C2H4O	10.23	Yes	4.7
Acetic acid	C2H4O2	10.66	Yes	20 - 24
Acetic Anhydride	C4H6O3	10.14	Yes	+
Acetone	C3H6O	9.69	Yes	1.1
Acrolien	C3H4O	10.22	Yes	+
Acrylic Acid	C3H4O2	10.6	Yes	+
Allyl alcohol	C3H6O	9.63	Yes	2.3 – 2.5
Allyl chloride	C3H5Cl	10.05	Yes	+
Ammonia	H3N	10.18	Yes	11.2
Ammonium chloride	NH4Cl	10.1	Yes	+
Amyl acetate, n-	C7H14O2	9.9	Yes	2.2 – 2.4
Amyl alcohol	C5H12O	10	Yes	4.8 – 5.2
Aniline	C6H7N	7.7	Yes	0.5
Anisole	C7H8O	8.21	Yes	0.7 – 0.9
Arsine	AsH3	9.89	Yes	1.8 – 2.0
Asphalt, petroleum fumes		9	Yes	+
Benzaldehyde	C7H6O	9.49	Yes	0.7
Benzenamene	C6H7N	7.7	Yes	0.5
Benzene	C6H6	9.24	Yes	0.5
Benzenethiol	C6H5SH	8.32	Yes	+

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Benzonitrile	C7H5N	9.62	Yes	+
Benzyl alcohol	C7H8O	8.26	Yes	1.0 – 1.2
Benzyl chloride	C7H7Cl	9.14	Yes	0.5 – 0.7
Benzyl formate	C8H8O2	9.32	Yes	0.6 – 0.8
Biphenyl	C12H10	8.23	Yes	+
Bis(2,3-epoxypropyl) ether	C6H10O3	9	Yes	+
Bitumen, petroleum fumes		9	Yes	+
Bromine	Br2	10.55	Yes	+
Bromobenzene	C6H5Br	8.98	Yes	+
Bromochloromethane	CH2ClBr	10.77	Yes	+
Bromoethane	C2H5Br	10.29	Yes	+
Bromoethyl methyl ether, 2-	C3H7OBr	10	Yes	0.8 – 0.9
Bromoform	CHBr3	10.48	Yes	+
Bromopropane, 1-	C3H7Br	10.18	Yes	+
Butadiene	C4H6	9.07	Yes	0.9
Butadiene diepoxide, 1,3-	C4H6O2	10	Yes	3.3 – 3.7
Butan-2-one	C4H8O	9.51	Yes	0.9
Butane, n-	C4H10	10.63	Yes	+
Butanol, 1-	C4H10O	10.04	Yes	+
Buten-3-ol, 1-	C4H8O		Yes	4.5 – 4.9
Butene, 1-	C4H8	9.58	Yes	0.8 – 1.0
Butoxyethanol, 2-	C6H14O2	10	Yes	1.1 – 1.3
2-butoxyethyl acetate	C8H16O3		Yes	+
Butyl acetate, n-	C6H12O2	10	Yes	2.4 – 2.8
Butyl acrylate, n-	C7H12O2	9	Yes	1.5 – 1.7
Butyl lactate	C7H14O3	9	Yes	+
Butyl mercaptan	C4H10S	9.15	Yes	0.5 – 0.6
t-Butyl methyl ether (MTBE)	C5H12O	9.24	Yes	0.8
Butylamine, 2-	C4H11N		Yes	+
Butylamine, n-	C4H11N	8.71	Yes	1.0 – 1.2

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Camphene	C10H16		Yes	+
Carbon disulfide	CS2	10.08	Yes	+
Carbon tetrabromide	CBr4	10.31	Yes	+
Chlorine dioxide	ClO2	10.36	Yes	+
Chloro-1,3-butadiene, 2-	C4H5Cl	8.79	Yes	2.5 – 3.5
Chlorobenzene	C6H5Cl	9.07	Yes	0.4
Chloroethyl methyl ether, 2-	C3H7ClO	9	Yes	2.8 – 3.2
Chlorotoluene, o-	C7H7Cl	8.83	Yes	0.5 – 0.6
Chlorotoluene, p-	C7H7Cl	8.69	Yes	0.5 – 0.6
Chlorotrifluoroethylene	C2ClF3	9.81	Yes	+
Cresol, m-	C7H8O	8.97	Yes	+
Cresol, o-	C7H8O	8.97	Yes	+
Cresol, p-	C7H8O	8.97	Yes	+
Crotonaldehyde	C4H6O	9.73	Yes	1.0 – 1.2
Cumene	C9H12	8.75	Yes	0.5 – 0.6
Cyanamide	CH2N2	10.65	Yes	+
Cyclohexane	C6H12	9.86	Yes	1.4
Cyclohexanol	C6H12O	10	Yes	2.9
Cyclohexanone	C6H10O	9.4	Yes	0.9
Cyclohexene	C6H10	8.95	Yes	0.8 – 0.9
Cyclohexylamine	C6H13N	8.37	Yes	1.1 – 1.3
Cyclopentane	C5H10	10.52	Yes	+
Decane, n-	C10H22	9.65	Yes	1.3
Diacetone alcohol	C6H12O2		Yes	0.7 – 0.8
Dibromochloromethane	CHBr2Cl	10.59	Yes	+
Dibromoethane 1,2-	C2H4Br2	9.45	Yes	1.6 – 1.8
Dichloro-1-propene, 2,3-	C3H4Cl2	10	Yes	0.9 – 1.0
Dichloroacetylene	C2Cl2	9.9	Yes	+
Dichlorobenzene o-	C6H4Cl2	9.06	Yes	0.4 – 0.5
Dichloroethene, 1,1-	C2H2Cl2	10	Yes	0.9 – 1.0

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Dichloroethene, cis-1,2-	C2H2Cl2	9.66	Yes	0.8 – 0.9
Dichloroethene, trans-1,2-	C2H2Cl2	9.65	Yes	0.4 – 0.5
Dichloroethylene, 1,1-	Cl2C2H2	9.81	Yes	0.9
Dichloroethylene 1,2-	C2H2Cl2	9.65	Yes	+
Dicyclopentadiene	C10H12	9	Yes	0.4 – 0.5
Diesel Fuel		9	Yes	1.0
Diethyl ether	C4H10O	9.53	Yes	1.1
Diethyl sulphide	C4H10S	8.43	Yes	0.5 – 0.6
Diethylamine	C4H11N	8.01	Yes	0.9 – 1.1
Diethylaminoethanol, 2-	C6H15ON		Yes	+
Diethylaminopropylamine, 3-	C7H18N2	9	Yes	1.2 – 1.4
Dihydrogen selenide	H2Se	9.88	Yes	+
Diisobutylene	C8H16		Yes	+
Diisopropyl ether	C6H14O	9.2	Yes	0.8 – 0.9
Diisopropylamine	C6H15N	7.73	Yes	0.7 – 0.8
Diketene	C4H4O2	9.6	Yes	1.9 – 2.1
Dimethoxymethane	C3H8O2	9.7	Yes	+
Dimethyl benzene	C8H10	8.56	Yes	0.5
Dimethyl disulphide	C2H6S2	7.4	Yes	0.2 – 0.3
Dimethyl ether	C2H6O	10.03	Yes	+
Dimethyl formamide, N,N- (DMF)	C3H7NO	9.13	Yes	0.8
Dimethyl phthalate	C10H10O4	9.64	Yes	+
Dimethyl sulphide	C2H6S	8.69	Yes	0.4 – 0.5
Dimethylacetamide N,N-	C4H9NO	8.81	Yes	0.8 – 0.9
Dimethylamine	C2H7N	8.24	Yes	1.4 – 1.6
Dimethylaminoethanol	C4H11NO	9	Yes	+
Dimethylaniline, NN-	C8H11N	9	Yes	+
Dimethylbutyl acetate	C8H16O2	7.74	Yes	+
Dimethylethylamine, NN-	C4H11N	9	Yes	0.9 – 1.1
Dimethylformamide	C3H7NO	9.13	Yes	0.8 – 0.9

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Dimethylheptan-4-one, 2,6-	C ₉ H ₁₈ O	9.04	Yes	+
Dimethylhydrazine, 1,1-	C ₂ H ₈ N ₂	8.05	Yes	0.8 – 0.9
Dinitrobenzene, m-	C ₆ H ₄ N ₂ O ₄	10.43	Yes	+
Dinitrobenzene, p-	C ₆ H ₄ N ₂ O ₄	10.5	Yes	+
Dinonyl phthalate	C ₂₆ H ₄₂ O ₄	9.19	Yes	+
Dioxane 1,2-	C ₄ H ₈ O ₂		Yes	+
Dioxane 1,4-	C ₄ H ₈ O ₂	9.13	Yes	1.2
Diphenyl ether	C ₁₂ H ₁₀ O	8.09	Yes	+
Diphenylamine	C ₁₂ H ₁₁ N	7.4	Yes	+
Divinylbenzene	C ₁₀ H ₁₀	9	Yes	+
Epichlorohydrin	C ₃ H ₅ ClO	10.2	Yes	+
Epoxypopyl isopropyl ether, 2,3-	C ₆ H ₁₂ O ₂		Yes	+
Ethanal	C ₂ H ₄ O	10.23	Yes	4.7
Ethanol	C ₂ H ₆ O	10.43	Yes	13.3
Ethanolamine	C ₂ H ₇ NO	10.47	Yes	+
Ethoxyethanol, 2-	C ₄ H ₁₀ O ₂	9.6	Yes	1.2 – 1.4
Ethyl (S)-(-)-lactate	C ₅ H ₁₀ O ₃	10	Yes	3.0 – 3.4
Ethyl acetate	C ₄ H ₈ O ₂	10.01	Yes	5.1
Ethyl alcohol	C ₂ H ₆ O	10.43	Yes	13.3
Ethyl acrylate	C ₅ H ₈ O ₂	10.3	Yes	+
Ethyl amine	C ₂ H ₇ N	8.86	Yes	0.8 – 0.9
Ethyl benzene	C ₈ H ₁₀	8.76	Yes	0.5 – 0.6
Ethyl butyrate	C ₆ H ₁₂ O ₂		Yes	+
Ethyl chloroformate	C ₃ H ₅ O ₂ Cl	10.64	Yes	+
Ethyl formate	C ₃ H ₆ O ₂	10.61	Yes	+
Ethyl hexyl acrylate, 2-	C ₁₁ H ₂₀ O ₂	9	Yes	1.0 – 1.2
Ethyl mercaptan	C ₂ H ₆ S	9.29	Yes	0.5 – 0.6
Ethylene	C ₂ H ₄	10.51	Yes	10.1
Ethylene glycol	C ₂ H ₆ O ₂	10.16	Yes	17.0
Ethylene oxide	C ₂ H ₄ O	10.56	Yes	12.5

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Ferrocene	C10H10Fe	6.88	Yes	+
Formamide	CH3ON	10.2	Yes	+
Furfural	C5H4O2	9.21	Yes	0.9 – 1.0
Furfuryl alcohol	C5H6O2	9.5	Yes	0.8 – 0.9
Gasoline vapors			Yes	0.7
Gasoline vapors 92 octane			Yes	0.7
Glutaraldehyde	C5H8O2	9	Yes	0.8 – 0.9
Heptan-2-one	C7H14O	9.33	Yes	0.9
Heptan-3-one	C7H14O	9.02	Yes	+
Heptane n-	C7H16	9.92	Yes	3.0
Hexamethyldisilazane, 1,1,1,3,3,3-	C6H19NSi2	8.6	Yes	0.2 – 0.3
Hexan-1-ol	C6H14O	9.89	Yes	2.3
Hexan-2-one	C6H12O	9.34	Yes	0.9
Hexane n-	C6H14	10.13	Yes	4.3
Hexene, 1-	C6H12	9.44	Yes	0.8 – 0.9
Hydrazine	H4N2	8.93	Yes	2.4 – 2.8
Hydrogen peroxide	H2O2	10.54	Yes	+
Hydrogen sulfide	H2S	10.46	Yes	3.3
Hydroquinone	C6H6O2	7.94	Yes	+
Hydroxypropyl acrylate 2-	C6H10O3	9	Yes	+
Iminodi(ethylamine) 2,2-	C4H13N3	9	Yes	+
Iminodiethanol 2,2'-	C4H11NO2	9	Yes	+
Indene	C9H8	8.81	Yes	+
Iodine	I2	9.31	Yes	0.1 – 0.2
Iodoform	CHI3	9.25	Yes	+
Iodomethane	CH3I	9.54	Yes	0.2 – 0.3
Isoamyl acetate	C7H14O2	10	Yes	1.9 – 2.3
isobutane	C4H10	10.57	Yes	+
isobutanol	C4H10O	10.12	Yes	+
isobutyl acetate	C6H12O2	9.9	Yes	2.4 – 2.8

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
isobutyl acrylate	C7H12O2		Yes	1.4 – 1.6
Isobutylene	C4H8	9.24	Yes	1.0
isobutyraldehyde	C4H8O	9	Yes	+
Isooctane (Naphtha)	C8H18	9.86	Yes	1.1
Isooctyl alcohol	C8H18O	9	Yes	+
Isopentane	C5H12	10.32	Yes	+
Isophorone	C9H14O	9.07	Yes	+
Isoprene	C5H8	8.85	Yes	0.6 – 0.7
Isopropanol	C3H8O	10.17	Yes	5.9
Isopropyl acetate	C5H10O2	9.99	Yes	2.4 – 2.8
Isopropyl alcohol	C3H8O	10.17	Yes	5.9
Isopropyl chloroformate	C4H7O2Cl		Yes	+
Isosafrole	C10H10O2		Yes	+
Jet Fuel JP-4		9	Yes	0.9 – 1.1
Jet Fuel JP-5		9	Yes	0.6 – 0.7
Jet Fuel JP-8, Jet A1		9	Yes	0.6
Kerosene		9	Yes	1.1
Ketene	C2H2O	9.617	Yes	+
n-Limonene	C10H16		Yes	0.7
Maleic anhydride	C4H2O3	9.9	Yes	+
Mesitylene	C9H12	8.41	Yes	0.3 – 0.4
Methacrylic acid	C4H6O2	10.15	Yes	+
Methacrylonitrile	C4H5N	10.34	Yes	+
Methanol	CH4O	10.85	No*	146.8
Methoxyethanol, 2-	C3H8O2	9.6	Yes	2.2 – 2.6
Methoxyethoxyethanol, 2-	C5H12O3	10	Yes	1.1 – 1.3
Methoxymethylethoxy-2-propanol	C6H14O3	9	Yes	+
2-methoxy-1-methylethyl acetate (PGMEA thinners)	C6H12O3		Yes	0.9 – 1.1
Methoxypropan-2-ol	C4H10O2	9	Yes	+
Methoxypropyl acetate	C6H12O3	9	Yes	+

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Methyl acetate	C3H6O2	10.27	Yes	+
Methyl acrylate	C4H6O2	9.9	Yes	3.5 – 3.9
Methyl alcohol	CH4O	10.85	No*	146.8
Methyl bromide	CH3Br	10.54	Yes	1.5
Methyl ethyl ketone (MEK)	C4H8O	9.51	Yes	0.9
Methyl isobutyl ketone (MIBK)	C6H12O	9.3	Yes	0.8
Methyl isothiocyanate	C2H3NS	9.25	Yes	4.3 – 4.9
Methyl mercaptan	CH4S	9.44	Yes	0.5 – 0.6
Methyl methacrylate	C5H8O2	9.7	Yes	3.5 – 3.9
Methyl oxirane	C3H6O	10.22	Yes	7.7
4-Methyl pentan-2-one	C6H12O	9.3	Yes	0.8
1-Methyl-prop-2-ene	C4H8	9.24	Yes	1.0
Methyl n-propyl ketone (MPK)	C5H10O	9.39	Yes	0.9
Methyl salicylate	C8H8O3	9	Yes	0.9 – 1.0
Methyl sulphide	C2H6S	8.69	Yes	0.4 – 0.5
Methyl t-butyl ether (MTBE)	C5H12O	9.24	Yes	0.8
Methyl-2-propen-1-ol, 2-	C4H8O		Yes	+
Methyl-2-pyrrolidinone, N-	C5H9NO	9.17	Yes	0.8 – 0.9
Methyl-5-hepten-2-one, 6-	C8H14O		Yes	+
Methylamine	CH5N	8.97	Yes	1.1 – 1.3
Methylbutan-1-ol, 3-	C5H12O	9.8	Yes	+
Methylcyclohexane	C7H14	9.85	Yes	0.9 – 1.0
Methylcyclohexanol, 4-	C7H14O	9.8	Yes	+
Methylcyclohexanone 2-	C7H12O	9	Yes	+
Methylheptan-3-one, 5-	C8H16O		Yes	+
Methylhexan-2-one, 5-	C7H14O	9.28	Yes	+
Methylhydrazine	CH6N2	8	Yes	1.1 – 1.3
Methyl-N-2,4, 6-tetranitroaniline, N-	C7H5N5O8	9	Yes	+
Methylpent-3-en-2-one, 4-	C6H10O	9	Yes	+
Methylpentan-2-ol, 4-	C6H14O	9	Yes	+

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Methylpentane-2,4-diol, 2-	C6H14O2	9	Yes	+
Methylpropan-2-ol, 2-	C4H10O	9.7	Yes	+
Methylstyrene	C9H10	8.2	Yes	0.5 – 0.6
Mineral spirits		9	Yes	0.7 – 0.8
Monochlorobenzene	C6H5Cl	9.07	Yes	0.4
Naphtha (iso-octane)	C8H18	9.86	Yes	1.1
Naphthalene	C10H8	8.14	Yes	0.4 – 0.5
Nitric oxide	NO	9.27	Yes	4.8 – 5.6
Nitroaniline 4-	C6H6N2O2	8.85	Yes	+
Nitrobenzene	C6H5NO2	9.92	Yes	1.9
Nitrogen dioxide	NO2	9.75	No	-
Nitrogen trichloride	NC13	10.22	Yes	+
Nonane, n-	C9H20	9.72	Yes	1.5
Octane, n-	C8H18	9.8	Yes	1.7
Octene, 1-	C8H16		Yes	+
Oxirane	C2H4O	10.56	Yes	12.5
Oxydiethanol 2,2-	C4H10O3		Yes	+
Pentan-2-one	C5H10O	9.38	Yes	0.9
Pentan-3-one	C5H10O	9.31	Yes	+
Pentandione, 2,4-	C5H8O2	8.85	Yes	+
Pentane, n-	C5H12	10.35	Yes	10.5
Phenol	C6H6O	8.51	Yes	0.9
Phenyl-2-propanone	C9H10O		Yes	+
Phenyl propene, 2-	C9H10	8.35	Yes	+
Phenyl-2,3-epoxypropyl ether	C9H10O2	9	Yes	+
Phenylenediamine, p-	C6H8N2	6.89	Yes	+
Phosphine	PH3	9.96	Yes	3.7 – 4.1
Picoline, 3-	C6H7N	9.04	Yes	0.9 – 1.0
Picric acid	C6H3N3O7	9	Yes	+
Pinene, alpha	C10H16	8.07	Yes	0.37

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
Pinene, beta	C10H16	8	Yes	0.3 – 0.4
Piperidine	C5H11N	9	Yes	+
Piperylene	C5H8	8.6	Yes	+
Prop-2-yn-1-ol	C3H4O	9	Yes	+
Propan-1-ol	C3H8O	10.2	Yes	5.9
Propan-2-ol	C3H8O	10.17	Yes	5.9
Propane-1,2-diol, total	C3H8O2		Yes	+
Propene	C3H6	9.73	Yes	1.3 – 1.5
Propionaldehyde	C3H6O	9.95	Yes	1.8 – 2.0
Propionic acid	C3H6O2	10.24	Yes	+
Propyl acetate, n-	C5H10O2	10.04	Yes	+
Propylene	C3H6	9.73	Yes	1.3 – 1.5
Propylene oxide	C3H6O	10.22	Yes	7.7
Propyleneimine	C3H7N	9	Yes	1.2 – 1.4
Pyridine	C5H5N	9.25	Yes	0.7 – 0.8
Pyridylamine 2-	C5H6N2	9	Yes	+
Pyrocatechol	C6H6O2	9	Yes	+
Resorcinol	C6H6O2	8.63	Yes	+
Safrole	C10H10O2		Yes	+
Styrene	C8H8	8.4	Yes	0.46
Terpinolene	C10H16		Yes	+
Tert-butanol	C4H10O	9.9	Yes	2.8 – 3.0
Tetrabromoethane, 1,1,2,2-	C2H2Br4		Yes	+
Tetracarbonylnickel	NiC4O4	8.28	Yes	+
Tetrachloroethylene	C2Cl4	9.326	Yes	0.52
Tetrachloronaphthalenes, all isomers	C10H4Cl4	9	Yes	+
Tetraethyl orthosilicate	C8H20O4Si	9.8	Yes	0.7 – 0.8
Tetrafluoroethylene	C2F4	10.12	Yes	+
Tetrahydrofuran	C4H8O	9.41	Yes	1.6 – 1.8
Tetrahydrothiophene	C4H8S	8.38	Yes	1.31
Therminol	C7H8		Yes	0.7 – 0.8

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Thiophane	C4H8S	8.38	Yes	1.31
Toluene	C7H8	8.82	Yes	0.53
Toluene-2,4-diisocyanate	C9H6N2O2	8.82	Yes	1.3 – 1.5
Tributylamine	C12H27N		Yes	+
Trichlorobenzene 1,2,4-	C6H3Cl3	9.04	Yes	0.4 – 0.5
Trichloroethylene	C2HCl3	9.45	Yes	0.53
Triethylamine	C6H15N	7.5	Yes	0.9 – 1.0
Trimethylamine	C3H9N	7.82	Yes	0.9 – 1.0
Trimethylbenzene mixtures	C9H12	8.41	Yes	0.3 – 0.4
Trimethylbenzene, 1,3,5-	C9H12	8.39	Yes	0.3 – 0.4
Trinitrotoluene 2,4,6-	C7H5N3O6	10.59	Yes	+
Turpentine	C10H16	8	Yes	0.45
TVOC			Yes	+
Undecane, n-	C11H24	9.56	Yes	1.9 – 2.1
Vinyl acetate	C4H6O2	9.19	Yes	1.2
Vinyl bromide	C2H3Br	9.8	Yes	0.4 – 0.5
Vinyl chloride	C2H3Cl	9.99	Yes	2.0
Vinylethylene	C4H6	9.07	Yes	0.9
Vinylidene chloride	C12C2H2	9.81	Yes	0.9
Vinyl-2-pyrrolidinone, 1-	C6H9NO		Yes	0.8 – 0.9
Xylene mixed isomers	C8H10	8.56	Yes	0.5
Xylene, m-	C8H10	8.56	Yes	0.5
Xylene, o-	C8H10	8.56	Yes	0.5
Xylene, p-	C8H10	8.44	Yes	0.5
Xylidine, all	C8H11N	7.5	Yes	+

*Some (very low) response with 10.6 eV lamp, not recommended for measurement