

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-	C9H18O	9.04	Yes	+
Dimethylhydrazine, 1,1-	C2H8N2	8.05	Yes	0.8 – 0.9
Dinitrobenzene, m-	C6H4N2O4	10.43	Yes	+
Dinitrobenzene, p-	C6H4N2O4	10.5	Yes	+
Dinonyl phthalate	C26H42O4	9.19	Yes	+
Dioxane 1,2-	C4H8O2		Yes	+
Dioxane 1,4-	C4H8O2	9.13	Yes	1.2
Diphenyl ether	C12H10O	8.09	Yes	+
Diphenylamine	C12H11N	7.4	Yes	+
Divinylbenzene	C10H10	9	Yes	+
Epichlorohydrin	C3H5ClO	10.2	Yes	+
Epoxypopyl isopropyl ether, 2,3-	C6H12O2		Yes	+
Ethanal	C2H4O	10.23	Yes	4.7
Ethanol	C2H6O	10.43	Yes	13.3
Ethanolamine	C2H7NO	10.47	Yes	+
Ethoxyethanol, 2-	C4H10O2	9.6	Yes	1.2 – 1.4
Ethyl (S)-(-)-lactate	C5H10O3	10	Yes	3.0 – 3.4
Ethyl acetate	C4H8O2	10.01	Yes	5.1
Ethyl alcohol	C2H6O	10.43	Yes	13.3
Ethyl acrylate	C5H8O2	10.3	Yes	+
Ethyl amine	C2H7N	8.86	Yes	0.8 – 0.9
Ethyl benzene	C8H10	8.76	Yes	0.5 – 0.6
Ethyl butyrate	C6H12O2		Yes	+
Ethyl chloroformate	C3H5O2Cl	10.64	Yes	+
Ethyl formate	C3H6O2	10.61	Yes	+
Ethyl hexyl acrylate, 2-	C11H20O2	9	Yes	1.0 – 1.2
Ethyl mercaptan	C2H6S	9.29	Yes	0.5 – 0.6
Ethylene	C2H4	10.51	Yes	10.1
Ethylene glycol	C2H6O2	10.16	Yes	17.0
Ethylene oxide	C2H4O	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

Gas Name	Formula	Ionization Potential	Detectable by 10.6 eV Lamp	BW 10.6 eV Lamp CF
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