PID Correction Factors

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Introduction

Photoionization Detectors (PIDs) respond to a broad range of chemicals including many volatile organic compounds (VOCs) like alcohols and solvents, and some inorganic compounds, like ammonia and hydrogen sulfide. If the compound to be measured is also used to calibrate the PID, then the display will show directly the concentration of that compound. However, it is often difficult or costly to obtain a gas standard of the compound to be measured, and therefore a surrogate standard gas, typically isobutylene (IBE) is commonly used to calibrate the PID. This Tech/App Note lists the correction factors used to allow accurate measurement of hundreds of VOCs with different sensitivity using only isobutylene to calibrate. Isobutylene has the advantages that it is low cost, readily available, has low toxicity, and is not prone to adsorption losses on tubing connections.

Correction Factor Definition

With a PID calibrated to isobutylene and used to measure another compound, the reading is multiplied by the correction factor to obtain the true concentration:

True Concentration = Reading x CF

For example, if the unit is calibrated with IBE but used to measure acrolein with a CF of 3.9 and the reading is 10 ppm, then the true concentration of acrolein is 10 x 3.9 = 39 ppm. The mPower NEO series PID has about 200 correction factors in a built-in library. When the appropriate factor is called up, the unit displays the corrected reading directly as the true concentration of the compound. A compound with CF<1 is more sensitive than IBE while one with CF>1 is less sensitive than IBE.

Unknown Compounds or Compound Mixtures

If the nature of the VOC is unknown, then the PID cannot apply a proper factor or calculate a true concentration. In such cases the response is deemed to be an "Isobutylene-equivalent" response. For known compound mixtures (such as paint solvents), an overall CF for the mixture can be calculated as:

CFmix = 1 / [X1/CF1 + X2/CF2 + ... Xn/CFn]

Where Xn and CFn are the mole fraction and correction factor for component n, respectively (In the case of a paint solvent the mole fractions can be obtained from the MSDS). However, if the mixture is variable over time, then it is again not possible to calculate an accurate CF or concentration.

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Matrix Gas Effects

These CFs apply to measurements in air, unless noted. In most cases, matrix gas effects can be ignored, but for unusual situations corrections may be needed.

- Oxygen at 100% reduces the VOC response by roughly 60% compared to pure nitrogen. Thus readings in pure N2 are about 20% higher than in air (78% N2/21% O2).
- Hydrogen/Helium/Argon have little effect other than removing the oxygen quenching, and thus they cause about 20% increase in VOC response compared to air.
- Methane/Propane cause significant quenching at concentrations above about 1% by volume. Therefore, PID measurements cannot be made in pure natural gas or liquid petroleum gas. In some cases, it is possible to dilute the fuel gas 100-fold to avoid the quenching and still have a measurable response to the minor component of interest.
- Water Vapor. Humidity near 100% at room temperature can reduce the PID response to VOCs by about 40%. Below 50% RH corrections are generally not needed. Contact mPower for more details on how to make measurements in high-humidity environments.
- Carbon Dioxide at 100% reduces the VOC response by about 20% compared to air.

Correction Factor Definition

The CFs in Table 1 were typically measured at 100 ppm or less and apply to concentration ranges from low ppb to a few thousand ppm. At higher concentrations, the factors are less accurate because curve-fitting is required to linearize the VOC response, and such curve fits are slightly different for each compound. For best accuracy, we recommend calibrating at concentrations in the general range of the expected VOC readings. Compound Formula and CAS No. In Table 1, the chemical formula together with the Chemical Abstracts Service Number (CAS No.) provide a means of uniquely identifying the compound.

Compound Boiling Point

Chemicals with low boiling points below about 100°C give a very fast response time of just a few seconds on the NEO series PIDs. Those with higher boiling points have increasingly slower response so that compounds boiling at 200°C may take up to a minute to obtain a steady reading. At even higher boiling points, accuracy begins to be impaired, as the compound vapors tend to be lost by deposition onto filters and inlet tubing and connections. For compounds like Therminol VP-1 with a b.p. of 257°C, the PID acts primarily as a leak detector without providing a precise concentration reading. A boiling point of 300°C is the upper limit for detectable compounds.

TWA

TThe Time-Weighted Average (TWA) is a dose limit for worker exposure. This is included in the table to give an estimate of the toxicity of the compound and the concentration range that typically needs to be measured when the PID is used for industrial hygiene purposes.

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Acetaldehyde	C2H4O	75-07-0	44.1	21	C25	0	6	10.23
Acetamide	C2H5NO	60-35-5	59.1			0	2.1	9.69
Acetic acid	C2H4O2	64-19-7	60.1	118	10	0	22	10.68
Acetic anhydride	C4H6O3	108-24-7	102.1		5	0	6.1	10.14
Acetoin	C4H8O2	513-86-0	88.1			2	1.1	~9.6
Acetone	C3H6O	67-64-1	58.1	56	250	1.2	1.1	9.69
Acetone cyanohydrin	C4H7NO	75-86-5	85.1		C5	0	0	11.1
Acetonitrile	C2H3N	75-05-8	41.1		20	NR	NR	12.20
Acetophenone	C8H8O	98-86-2	120.1		10	0	0.7	9.29
Acetyl bromide	C2H3BrO	506-96-7	122.9			0	7.9	10.24
Acetylene	C2H2	74-86-2	26	-84		NR	NR	11.40
Acetylglycine, N-	C4H7NO3	543-24-8	117.1			0	1.9	9.40
Acrolein	C3H4O	107-02-8	56.1	53	0.1	42	3.9	10.10
Acrylic acid	C3H4O2	79-10-7	72.1	141	2	0	12	10.60
Acrylonitrile	C3H3N	107-13-1	53.1		2	NR	NR	10.91
Allyl acetoacetate	C7H10O3	1118-84-9	142.2			0	1.6	~9.8
Allyl alcohol	C3H6O	107-18-6	58.1		2	4.5	2.4	9.63
Allylamine	C3H7N	107-11-9	57.1			0	0.9	8.80
Allyl bromide	C3H5Br	106-95-6	121			0	3.1	9.96
Allyl chloride	C3H5Cl	107-05-1	76.5		1	0	4.6	10.05
Allyl glycidyl ether	C6H10O2	106-92-3	114.1		1	0	0.9	~10
Aminomethylpropanol	C4H11NO	124-68-5	89.1			0	1.5	~8.7
Ammonia	NH3	7664-41-7	17	-33	25	0	12.7	10.07
Amyl acetate	C7H14O2	628-63-7	130.2		50	11	2.3	9.9
Amyl acetate, s-	C7H14O2	626-38-0	130.2		50	0	4.9	9.9
Amyl alcohol	C5H12O	71-41-0	88.1		100	9.9	2.5	10.00
Amyl alcohol, tert-	C5H12O	75-85-4	88.1			2.9	1.6	9.80
Amylene	C5H10	513-35-9	70.1			0.9	0.9	
Anethole	C10H12O	104-46-1	148.2			0	0.5	~9
Aniline	C7H7N	62-53-3	93.1	184	2	0.5	0.48	7.70
Anisole	C7H8O	100-66-3	108.1			0.89	0.58	8.21
Anisyl aldehyde	C8H8O2	123-11-5	136.1			0	0.5	~8
Arsine	AsH3	7784-42-1	77.9	-63	0.005	0	1.9	~9.6
Benzaldehyde	C7H6O	100-52-7	106.1		2	0.8	0.6	9.49
Benzene	C6H6	71-43-2	78.1	80	0.5	0.48	0.5	9.24
Benzenethiol	C7H7S	100-53-8	124.2			0.9	0.9	8.50
Benzoic acid	C7H6O2	65-85-0	122.1			0	0.8	9.30
Benzonitrile	C7H5N	100-47-0	103.1			0.9	0.8	9.62

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Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Benzoquinone, o-	C6H4O2	583-63-1	108.1			0	0.9	9.30
Benzoquinone, p-	C6H4O2	106-51-4	108.1		0.1	0	1.1	10.01
Benzoyl bromide	C7H5BrO	618-32-6	185			0	1.9	9.65
Benzyl acetate	C9H10O2	140-11-4	150.2		10	0	0.7	~8.5
Benzyl alcohol	C7H8O	100-51-6	108.1	205	10	1.4	1.1	8.26
Benzylamine	C7H9N	100-46-9	107.2			0	0.7	7.56
Benzyl chloride	C7H7Cl	100-44-7	126.6		1	0.7	0.6	9.14
Benzyl formate	C8H8O2	104-57-4	136.1			0.9	0.73	9.32
Benzyl isobutyrate	C11H14O2	103-28-6	178.2			0	0.6	~9
Benzyl nitrile	C8H7N	140-29-4	117.1			0	0.9	9.39
Benzyl propionate	C10H12O2	122-63-4	164.2			0	0.9	~9
Biphenyl	C12H10	92-52-4	154.2			0.7	0.5	8.23
Borneol	C10H18O	507-70-0	154.2			0	0.9	~9
Bromine	Br2	7726-95-6	159.8	59	0.1	0	1.3	10.55
Bromoacetone	C3H5BrO	598-31-2	137			0	0.9	9.73
Bromoacetylene	C2HBr	593-61-3	104.9			0	4.1	10.31
Bromobenzene	C6H5Br	108-86-1	157			0.3	0.3	8.98
Bromobutane, 1-	C4H9Br	109-65-9	137	102		14.1	1.7	10.13
Bromobutane, 2-	C4H9Br	78-76-2	137			1.5	0.9	10.01
Bromo-2-chloroethane, 1-	C2H4BrCl	107-04-0	143.4			0	3.1	~10.5
Bromocyclohexane	C6H11Br	108-85-0	163.1			0	1.9	9.87
Bromo-2,2-dimethylpropane, 1-	C5H11Br	630-17-1	151			0	1.9	10.04
Bromoethane	C2H5Br	74-96-4	109		5	NR	1.7	10.29
Bromoethanol, 2-	C2H5BrO	540-51-2	125			0	1.9	10.0
Bromoethyl methyl ether, 2-	C3H7OBr	6482-24-2	139			0	0.84	10.0
Bromoform	CHBr3	75-25-2	252.7	149	0.5	0	2.5	10.48
Bromo-2-methylpentane, 1-	C6H13Br	25346-33-2	165.1			0	2.1	10.09
Bromopentane, 1-	C5H11Br	110-53-2	151			3.4	1	10.10
Bromopropane, 1-	C3H7Br	106-94-5	123	71	10	150	1.5	10.18
Bromopyridine, 3-	C5H4BrN	626-55-1	158			0	2.1	9.75
Bromopyridine, 4-	C5H4BrN	1120-87-2	158			0	2.1	9.94
Bromotrimethylsilane	C3H9BrSi	2857-97-8	153.1			2.2	2	10.0
Butadiene diepoxide, 1,3-	C4H6O2	298-18-0	86.1			25	3.5	~10
Butadiene, 1,3-	C4H6	106-99-0	54.1	-4	1	0.8	0.85	9.07
Butane, i-	C4H10	106-97-8	58.1			NR	0	10.68
Butane, n-	C4H10	106-97-8	58.1	-1	1000	NR	0 (~50)	10.53
Butanediol, 2,3-	C4H10O2	513-85-9	90.1			15.1	5.1	10.26
Butanedione, 2,3-	C4H6O2	431-03-8	86.1			0.8	0.8	9.56

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Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Butanoic acid	C4H8O2	107-92-6	88.1			0	4.9	10.17
Butanol, 1-	C4H10O	71-36-3	74.1	118	20	70	4.7	10.04
Butanol, 2-	C4H10O	78-92-2	74.1			8.1	3.1	10.10
Butanol, t-	C4H10O	75-65-0	74.1	82	100	6.9	2.9	9.90
Butene, 1-	C4H8	106-98-9	56.1		250	0	1.6	9.58
Butene, 2-	C4H8	107-01-7	56.1		250	0	1.4	9.10
Butenenitrile, 3-	C4H5N	109-75-1	67.1			0	2.9	10.20
Butenoic acid, 3-	C4H6O2	107-93-7	86.1			0	2.1	9.75
Buten-3-ol, 1-	C4H8O	598-32-3	72.1			3.1	1.9	9.50
Butoxyethanol, 2-	C6H14O2	111-76-2	118.2	171	20	1.8	1.2	8.68
Butoxyethoxyethanol	C8H18O3	112-34-5	162.2		5	13.1	3.1	~9
Butoxyethyl acetate, 2-	C8H16O3	112-07-2	160.2		20	4.1	2.1	
Butyl acetate, n-	C6H12O2	123-86-4	116.6	126	50	0	2.6	
Butyl acetate, sec-	C6H12O2	105-46-4	116.6		50	5	1.7	
Butyl acrylate, n-	C7H12O2	141-32-2	128.2	145	2	0	1.6	~9.6
Butylamine, n-	C4H11N	109-73-9	73.1	78	C5	1.1	1.1	8.71
Butylamine, sec-	C4H11N	513-49-5	73.1		2	0	1	8.70
Butylamine, t-	C4H11N	75-64-9	73.1			1.4	1.1	8.64
Butylbenzene, n-	C10H14	104-51-8	134.2		10	0.5	0.6	8.69
Butylbenzene, sec-	C10H14	135-98-8	134.2			0.5	0.5	8.68
Butylbenzene, t-	C10H14	98-06-6	134.2			0.5	0.5	8.69
Butyl butyrate	C8H16O2	109-21-7	144.2			0	1.9	~9.7
Butyl Cellosolve (See Butoxyethanol)	C6H14O2	111-76-2	118.2	171	20	1.8	1.2	8.68
Butyl chloroformate	C5H9ClO2	592-34-7	136.6		0.2	0	3.1	~10.4
Butylcyclohexanol, 4-t-	C10H20O	98-52-2	156.3			0	1.5	~9
Butylcyclohexyl acetate, 2-t-	C12H22O2	88-41-5	198			0	1	~10
Butyl diglycol acetate	C10H20O4	124-17-4	204.3	243		0	2.9	~10
Butylene carbonate, 1,2-	C5H8O3	4437-85-8	116.1			NR	18.1	~10.4
Butyl ether, n-	C8H18O	142-96-1	130.2			1.2	0.9	9.28
Butyl glycidyl ether	C7H14O2	2426-08-6	130.2		5	0	1.9	~10.0
Butyl hydroperoxide, t-	C4H10O2	75-91-2	90.1		1	2	1.6	
Butyl isocyanate	C5H9NO	111-36-4	99.1			0	1.1	9.23
Butyl lactate	C7H14O3	138-22-7	146.2		5	0	2.4	9.80
Butyl mercaptan	C4H10S	109-79-5	90.2		0.5	0.55	0.52	9.15
Butyl mercaptan, t-	C4H10S	75-66-1	90.2			0.7	0.7	9.03
Butyl methacrylate	C8H14O2	97-88-1	142.2			0	1.1	~9.5
Butylphenol, o-s-	C10H14O	89-72-5	150.2		5	0	1	7.80

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Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Butyl propionate, n-	C7H14O2	590-01-2	130.2			4.1	2	
But-2-ynal	C4H4O	1119-19-3	68.1			0	3.1	10.20
But-3-ynal	C4H4O	52844-23-2	68.1			0	1.6	9.85
Butyn-1-ol, 2-	C4H6O	764-01-2	70.1			0	1.6	9.78
Butyraldehyde	C4H8O	123-72-8	72.1		20	1.8	1.6	9.86
Butyronitrile	C4H7N	109-74-0	69.1		8	NR	NR	~11.6
Butyryl chloride	C4H7ClO	141-75-3	106.5			0	3.1	~10.4
Carbon dioxide	CO2	124-38-9	44	-79	5000	NR	NR	13.77
Carbon disulfide	CS2	75-15-0	76.1	46	1	4	1.2	10.08
Carbon monoxide	CO	630-08-0	28	-191	25	NR	NR	14.01
Carbon suboxide	C3O2	504-64-3	68			0	10.1	10.60
Carbon tetrabromide	CBr4	558-13-4	331.6	190		0	2.9	10.31
Carbon tetrachloride	CCl4	56-23-5	153.8	77	5	NR	NR	11.47
Carbonyl fluoride	COF2	353-50-4	66	85	2	0	0	13.02
Carbonyl sulfide	COS	463-58-1	60.1	-50		0	0	11.08
Carene	C10H16	13466-78-9	136.2	171	20	0	0.6	8.40
Carvacrol	C10H14O	499-75-2	150.2	238		0	0.9	~9
Carvone, R-	C10H14O	6485-40-1	150.2	231		1.6	1.7	9.77
Chloramine	ClH2N	10599-90-3	51.5			0	1.9	9.85
Chlorine	Cl2	7782-50-5	70.9	-34	0.1	NR	NR	11.48
Chlorine dioxide	ClO2	10049-04-4	67.5		C0.1	NR	NR	10.57
Chloroacetaldehyde	C2H3OCl	107-20-0	78.5		C1	0	3.1	10.16
Chloroacetyl chloride	C2H2Cl2O	79-04-9	112.9		0.05	0	8.1	10.30
Chlorobenzene	C6H5Cl	108-90-7	112.6		10	0.44	0.4	9.07
Chlorobutane, 1-	C4H9Cl	109-69-3	92.6			0	10.1	10.64
Chlorobutane, 2-	C4H9Cl	78-86-4	92.6			0	6	10.57
Chlorocyclohexane	C6H11Cl	542-18-7	118.6			19.9	1.9	10.10
Chlorodifluoromethane	CHClF2	75-45-6	86.5		1000	NR	NR	12.2
Chloroethane	C2H5Cl	75-00-3	64.5		100	NR	NR	10.97
Chloroethanol, 2-	C2H5ClO	107-07-3	80.5		C1	0	9.9	10.52
Chloroethyl ether, 2-	C4H8Cl2O	111-44-4	143		5	8.6	3	
Chloroethyl methyl ether, 2-	C3H7ClO	627-42-9	94.5			0	2.5	10.25
Chloro-1-fluoroethane, 1-	C2H4ClF	1615-75-4	82.5			NR	NR	~11.7
Chloro-2-fluoroethane, 1-	C2H4ClF	762-50-5	82.5			NR	NR	~11.7
Chloroform	CHCl3	67-66-3	119.4		10	NR	NR	11.37
Chloromethoxyethane	C3H7ClO	3188-13-4	94.5			0	4.1	10.30
Chloro-2-methylpropene, 3-	C4H7Cl	563-47-3	90.6			1.4	1.2	
Chloropentafluoroethane	C2ClF5	76-15-3	154.5			NR	NR	12.96

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Chloropicrin	CCl3NO2	76-06-2	164.4		0.1	0	0	~11
Chloroprene	C4H5Cl	126-99-8	88.5		10	0	1.4	8.79
Chloro-2-propanone, 1-	C3H5ClO	78-95-5	92.5		C1	0	1.1	9.92
Chloropyridine, 2-	C5H4ClN	109-09-1	113.5			0	1.1	9.00
Chlorostyrene, o-	C8H7Cl	2039-87-4	138.6		50	0	0.5	~8.5
Chlorothiophene, 3-	C4H3ClS	17249-80-8	118.6			0.8	0.8	8.92
Chlorotoluene, m-	C7H7Cl	108-41-8	126.6			0	0.6	8.70
Chlorotoluene, o-	C7H7Cl	95-49-8	126.6		50	0	0.6	8.83
Chlorotoluene, p-	C7H7Cl	106-43-4	126.6			0.4	0.5	8.69
Chlorotrifluoroethene	C2ClF3	79-38-9	116.5		5	6.7	3.9	9.81
Chlorotrimethylsilane	C3H9ClSi	75-77-4	108.6	57		NR	0	10.83
Cinnamic aldehyde	C8H8O	104-55-2	132.2	248		0	0.5	~9
Cinnamyl acetate	C11H12O2	21040-45-9	176.2			0	0.5	~9
Cinnamyl alcohol	C9H10O	104-54-1	134.2			0	0.5	~9
Citral	C10H16O	5392-40-5	152.2	229		3.5	1.8	~8.7
Citronellal	C10H18O	106-23-0	154.2			0	1	~9
Citronellol	C10H20O	26489-01-0	156			0	1.1	~8.5
Citronellol acetate	C12H22O2	150-84-5	198.3			0	1.6	~9
Citronellol formate	C11H20O2	105-85-1	198.3			0	1.4	~9
Citronellyl isobutyrate	C14H26O2	97-89-2	226.4			0	0.8	~9
Clary propyl acetate	C11H20O3	131766-73-9	200			0	1.1	~9
Coumarin	C9H6O2	91-64-5	146.1			0	0.5	~9
Cresol methyl ether	C8H10O	104-93-8	122.2	174		0	0.9	~9
Cresol, m-	C7H8O	108-39-4	108.1	203	5	0.57	0.5	8.36
Cresol, o-	C7H8O	95-48-7	108.1	191	5	1.6	1.2	8.14
Cresol, p-	C7H8O	106-44-5	108.1	202	5	1.6	1.2	8.31
Cresyl acetate, p-	C9H10O2	140-39-6	150.2	211		0	1.1	8.60
Cresyl ethyl ether, p-	C9H12O	622-60-6	136.2	188		0	0.9	~9
Crotonaldehyde	C4H6O	123-73-9	70.1	104		1.5	1.1	9.73
Crotonyl alcohol	C4H8O	6117-91-5	72.1	121		0	0.9	9.13
Cumene	C9H12	98-82-8	120.2	152	50	0.58	0.54	8.73
Cyclobutanone	C4H6O	1191-95-3	70.1			0	1.1	9.35
Cyclobutene	C4H6	822-35-5	54.1			0	3.1	9.43
Cycloheptane	C7H14	291-64-5	98.2			0	1	9.82
Cyclohex-2-enedione, 1,4-	C6H6O2	4505-38-8	110.1			0	0.9	9.77
Cyclohexane	C6H12	110-82-7	84.2	81	100	3.3	1.4	9.98
Cyclohexanethiol	C6H12S	1569-69-3	116.2			0	0.6	~9
Cyclohexanol	C6H12O	108-93-0	100.2		50	1.5	0.94	10.00

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Cyclohexanone	C6H10O	108-94-1	98.1	156	20	1	0.9	9.16
Cyclohexene	C6H10	110-83-8	82.1		20	0	0.8	8.95
Cyclohexyl acetate	C8H14O2	622-45-7	142.2			0	1.3	~9.5
Cyclohexylamine	C6H13N	108-91-8	99.2		10	21	2.9	8.37
Cyclooctadiene	C8H12	29965-97-7	108.2			1.2	1.1	~9.5
Cyclopentadiene	C5H6	542-92-7	66.1		75	0	0.9	8.56
Cyclopentane	C5H10	287-92-3	70.1		600	0	15	10.52
Cyclopentanone	C5H8O	120-92-3	84.1			0.9	0.8	9.26
Cyclopentene	C5H8	142-29-0	68.1			1.4	1.4	9.01
Cyclopentene-1,3-dione, 4-	C5H4O2	930-60-9	96.1			0	1.1	9.60
Cyclopropylamine	C3H7N	765-30-0	57.1			1.1	0.9	8.80
Cymene, p-	C10H14	99-87-6	134.2	177		0	0.5	8.29
Decahydronaphthalene	C10H18	91-17-8	138.2		5	0	1	9.14
Decanal	C10H20O	112-31-2	156.3			0	1.1	~9
Decane	C10H22	124-18-5	142.3	174		4	1.4	9.65
Decenal, t-4-	C10H18O	65405-70-1	154.2			0	1.5	~9
Decene	C10H22	872-05-9	140.3		100	0	0.9	~9.5
Decyne, 1-	C10H18	764-93-2	138.2			0.8	0.4	9.91
Desflurane	C3H2F6O	57041-67-5	168			0	0	~11
Diacetone alcohol	C6H12O2	123-42-2	116.2		50	0.8	0.8	~9.6
Diazine, 1,2-	C4H4N2	289-80-5	80.1			0	2.9	9.65
Diazine, 1,3-	C4H4N2	289-95-2	80.1			0	3.1	9.33
Dibromoacetylene	C2Br2	624-61-3	183.8			0	2.1	9.65
Dibromochloromethane	CHBr2Cl	124-48-1	208.3			0	5.3	10.59
Dibromo-3-chloropropane, 1,2- DBCP	C3H5Br2Cl	96-12-8	236.3	198	0.001	0	1.7	~10.3
Dibromocyclohexane, 1,2-	C6H10Br2	5401-62-7	242			0	3.1	10.02
Dibromocyclopentane	C5H8Br2	33547-17-0	227.9			0	3.1	10.06
Dibromodichloromethane	CBr2Cl2	594-18-3	242.7			NR	4.1	10.40
Dibromodifluoromethane	CF2Br2	75-61-6	209.8			NR	3.1	11.07
Dibromoethane, 1,2-	C2H4Br2	106-93-4	187.9	131	0.045	NR	1.7	10.35
Dibromoethene, 1,1-	C2H2Br2	593-92-0	185.8			0	1.6	9.78
Dibromoethene, 1,2-	C2H2Br2	540-49-8	185.8			0	1.6	9.63
Dibromomethane	CH2Br2	74-95-3	173.8			NR	2	10.41
Di-n-butylamine	C8H19N	111-92-2	129.2		C5	4.1	6.1	
Dichloroacetylene	C2Cl2	7572-29-4	94.9		C0.1	0	5.1	9.9
Dichlorobenzene, m-	C6H4Cl2	541-73-1	147		2	0.6	0.6	9
Dichlorobenzene, o-	C6H4Cl2	95-50-1	147	180	25	0.54	0.47	9.06

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Dichlorobenzene, p-	C6H4Cl2	106-46-7	147		10	0.6	0.5	9.06
Dichloro-1,3-butadiene, 1,4-	C4H4Cl2	2984-42-1	123			0	0.7	~9.5
Dichloro-2-butene, 1,4-	C4H7Cl	764-41-0	125		0.005	0	2.1	~9.5
Dichloro-2-butene, trans-1,4-	C4H7Cl	110-57-6	125			0	2.1	~9.5
Dichloro-1,1-difluoroethane, 1,2-	C2H2Cl2F2	1649-08-7	134.9			0	0	
Dichloro-1,2-difluoroethane, 1,2-	C2H2Cl2F2	431-06-1	134.9			0	0	
Dichloro-1,2-difluoroethene, 1,2-	C2Cl2F2	598-88-9	132.9			0	2.1	~10.2
Dichloro-2,2-difluoroethene, 1,1-	C2Cl2F2	79-35-6	132.9			0	0.9	9.69
Dichlorodimethylsilane	C2H6Cl2Si	75-78-5	129.1		C2	0	0	
Dichloroethane, 1,1-	C2H4Cl2	75-34-3	99		100	0	0	11.06
Dichloroethane, 1,2-	C2H4Cl2	107-06-2	99		10	0	0	11.05
Dichloroethene, 1,1-	C2H2Cl2	75-35-4	96.9	32	5	0	0.82	11.00
Dichloroethene, 1,2-	C2H2Cl2	540-59-0	96.9	49	200	0.3	0.3	9.65
Dichloroethene, c-1,2-	C2H2Cl2	156-59-2	96.9	60	200	0	0.9	9.66
Dichloroethene, t-1,2-	C2H2Cl2	156-60-5	96.9	49	200	0	0.45	9.65
Dichloro-1-fluoroethane, 1,1-	C2H3Cl2F	1717-00-6	117		500	0	0	>11.0
Dichloro-1-fluoroethane, 1,2-	C2H3Cl2F	430-57-9	117			0	0	>11.0
Dichloromethane	CH2Cl2	75-09-2	84.9			0	0	11.32
Dichloropropane, 1,2-	C3H6Cl2	78-87-5	113			0	0	10.87
Dichloro-1-propene, 1,3-	C3H4Cl2	542-75-6	111		1	1.3	0.96	<10
Dichloro-1-propene, 2,3-	C3H4Cl2	78-88-6	111			1.9	1.3	<10
Dichloro-1,1,1-trifluoroethane, 2,2-	C2HCl2F3	306-83-2	152.9		50	NR	NR	11.5
Dichloro-2,4,6-trifluoropyridine, 3,5-	C5Cl2F3N	1737-93-5	202			1.1	0.9	
Dichlorvos	C4H7Cl2O4P	62-73-7	221	74	0,1	0	0.9	<9.4
Dicyclohexylamine	C12H23N	101-83-7	181.3			0	1	~8.5
Dicyclopentadiene	C10H12	77-73-6	132.2	170	5	0.57	0.48	~8
Diesel fuel #2, whole	------	68334-30-5	216	200-350	14	1.3	0.7	
Diethoxyethane, 1,1-	C6H14O2	105-57-7	118.2			1.1	1.7	9.78
Diethylacetylene	C6H10	928-49-4	82.1			0	1.9	10.03
Diethylamine	C4H11N	109-89-7	73.1		5	0	0.97	8.01
Diethylaminoethanol, 2-	C6H15ON	100-37-8	117.2		2	0	2.8	8.58
Diethylaminopropylamine, 3-	C7H18N2	104-78-9	130.2			3.1	5	~9
Diethyl carbonate	C5H10O3	105-58-8	118.1			0	7.1	~10.3
Diethylene glycol monoethyl ether	C6H14O3	111-90-0	134.2			0	0.7	~9
Diethylenetriamine	C4H13N3	111-40-0	103.2		1	0	1.1	~8.5

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Diethylhydroxylamine	C4H11NO	3710-84-7	89.1		2	1.6	1.6	~9
Diethyl maleate	C8H12O4	141-05-9	172.2			0	2.1	~10
Diethyl malonate	C7H12O4	105-53-3	160.2			0	3.9	10.31
Diethyl phosphite	C4H11O3P	762-04-9	138.1			0	1.9	10.31
Diethylsilane	C4H12Si	542-91-6	88.2			0	2.1	
Diethyl sulfate	C4H10SO4	64-67-5	154.2		Skin 2	0	3.1	~10.5
Diethyl sulfone	C4H10O2S	597-35-3	122.2			0	2.1	9.96
Diglycidyl ether	C6H10O3	2238-07-5	130		0.1	0	2.9	~9.6
Diglyme	C6H14O3	111-96-6	134.2			0.64	0.54	<9.8
Dihydroeugenol	C10H14O2	2785-87-7	166.2			0	0.5	~9
Dihydroisojasmone	C11H18O	95-41-0	262			0	0.8	~9
Dihydrojasmone	C11H18O	1128-08-1	166.3			0	0.7	~9
Dihydromyrcenol	C10H20O	18479-58-8	156.3			0	0.9	~9
Dihydroxybenzene, 1,2-	C6H6O2	120-80-9	110.1		5	0	0.9	8.56
Dihydroxybenzene, 1,3-	C6H6O2	108-46-3	110.1		10	0	0.9	8.63
Diiodomethane	CH2I2	75-11-6	267.8			0	1.3	9.46
Diisobutylene	C8H16	107-39-1	112.2		75	0.8	0.6	8.91
Diisobutyl ketone	C9H18O	108-83-8	142.2		25	0.6	0.7	9.04
Diisopropylamine	C6H15N	108-18-9	101.2		5	0.84	0.74	7.73
Diisopropylbenzene	C12H18	25321-09-9	162.3			0	0.6	~8.8
Diisopropyl ether	C6H14O	108-20-3	102.2			0.9	0.6	9.20
Diketene	C4H4O2	674-82-8	84.1			2.6	2	9.60
Dimethoxybenzene, 1,4-	C8H10O2	150-78-7	138.2			0	1.2	~9
Dimethoxymethane	C3H8O2	109-87-5	76.1		1000	13.1	2.9	10.0
Dimethylacetamide, N,N-	C4H9NO	127-19-5	87.1		10	0.87	0.8	8.81
Dimethylacetylene	C4H6	503-17-3	54.1			0	1.1	9.58
Dimethylamine	C2H7N	124-40-3	45.1		5	0	1.4	8.23
Dimethylaminoethanol, 2-	C4H11NO	108-01-0	89.1			0	1.4	8.8
Dimethylaniline, N,N-	C8H11N	121-69-7	121.2		5	0.6	0.7	7.12
Dimethylboron bromide	C2H6BBr	5158-50-9	120.8			0	4.1	10.25
Dimethylbutyl acetate, 1,3-	C8H16O2	108-84-9	144.2			0	1.7	~9.5
Dimethyl carbonate	C3H6O3	616-38-6	90.1			NR	~70	10.52
Dimethylcycloheptane, 1,2-	C9H18	13151-50-3	126.2			0	1.4	10.21
Dimethylcyclohexane, 1,2-	C8H16	583-57-3	112.2			1	0.6	9.41
Dimethylcyclopentane	C7H14	1192-18-3	98.2			0	1.3	9.92
Dimethyl disulfide	C2H6S2	624-92-0	94.2		0.5	0.2	0.2	8.46
Dimethylethylamine	C4H11N	598-56-1	73.1			1.1	1	7.74

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Dimethylformamide, N,N-	C3H7NO	68-12-2	73.1	153	5	0.7	0.7	9.13
Dimethylhydrazine, 1,1-	C2H8N2	57-14-7	60.1	63	0.01	0	0.78	7.28
Dimethyl methylphosphonate	C3H9O3P	756-79-6	124.1	181		0	4.3	9.94
Dimethyloctan-1-ol, 3,7-	C10H22O	106-21-8	158.3			0	1.3	~9.5
Dimethyloctan-3-ol, 3,7-	C10H22O	78-69-3	158.3			0	1.1	~9.5
Dimethylpentane, 2,4-	C7H16	108-08-7	100.2			0	1.1	~9.8
Dimethyl phosphite	C2H7O3P	868-85-9	110			NR	7.9	10.53
Dimethyl phthalate	C10H10O4	131-11-3	194.2	284		0	0.9	9.64
Dimethylsilane	C2H8Si	1111-74-6	60.2			NR	1.9	10.30
Dimethyl sulfate	C2H6O4S	77-78-1	126.1		0.1	23	20	~12
Dimethyl sulfoxide	C2H6OS	67-68-5	78.1			0	1.4	9.10
Dimethylthiophosphoryl chloride	C2H6ClO2PS	2524-03-0	160.6			0	1.1	
Dioxane, 1,4-	C4H8O2	123-91-1	88.1		20	1.8	1.5	9.19
Dioxolane, 1,3-	C3H6O2	646-06-0	74.1		20	4	2.3	~9.6
Dipentene	C10H16	138-86-3	136.2	176	30	0.9	1	~8.6
Diphenyl ether	C12H10O	101-84-8	170.2	259		1.8	1.6	8.09
Di-n-propylamine	C6H15N	142-84-7	101.2			1.6	1.6	7.80
Dipropyl ether	C6H14O	111-43-3	102.2			0	1.1	9.30
Dipropylene glycol	C6H14O3	110-98-5	134.2	231		0	4.1	~10
Disilane	Si2H6	1590-87-0	62.2			0	1.9	9.74
Disulfur dibromide	S2Br2	13172-31-1	223.9	47		0	1.6	9.23
Disulfur dichloride	S2Cl2	10025-67-9	135			0	2.9	9.4
Di-tert-butyl-p-cresol	C15H24O	128-37-0	220.4	265		0	0.4	7.80
Divinylbenzene	C10H10	1321-74-0	130	195	10	0.7	0.8	~8.2
Divinylbenzene, 1,3-	C10H10	108-57-6	130.2	195		0.7	0.7	~8.3
Dodecene	C12H24	112-40-3	170.3			0	1.1	~9
DS-108F Wipe Solvent	C5H10O3	97-64-3	118.1			3.3	1.6	
Epichlorohydrin	C2H5ClO	106-89-8	92.5	118	0.5	0	8.5	10.2
Epoxypropyl isopropyl ether, 2,3-	C6H12O2	4016-14-2	116.2			1.2	1.3	~9
Estragole	C10H12O	140-67-0	148.2			0	0.8	~9
Ethane	C2H6	74-84-0	30.1	-89	1000	0	0	11.52
Ethanol	C2H6O	64-17-5	46.1	78	1000	0	10	10.47
Ethanolamine	C2H7NO	141-43-5	61.1		3	5.6	1.6	8.96
Ethene	C2H4	74-85-1	28.1	-128	200	0	9	10.51
Ethoxybutane, 2-	C6H14O	19316-73-5	104.1			0	0.9	9.32

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Ethoxyethanol, 2-	C4H10O2	110-80-5	90.1		5	5.1	2.1	9.6
Ethoxyethanol, 2-	C6H12O3	111-15-9	132.2		5	0	2.9	~9.5
Ethoxy-2-methylpropane, 1-	C6H14O	627-02-1	102.2			0	0.9	9.3
Ethoxy-2-propanol, 1-	C5H12O2	1569-02-4	104.1			0	2.5	~9.5
Ethoxypropyl acetate	C7H14O3	98516-30-4	146		20	0	1.1	~9.5
Ethyl acetate	C4H8O2	141-78-6	88.1	77	400	0	4.6	10.01
Ethyl acetoacetate	C6H10O3	141-97-9	130.1			3.1	2.6	~9.5
Ethylacetylene	C4H6	107-00-6	54.1			0	2.9	10.18
Ethyl acrylate	C5H8O2	140-88-5	100.1	99	5	0	2.4	<10
Ethylamine	C2H7N	75-04-7	45.1		5	0	0.8	8.86
Ethylbenzene	C8H10	100-41-4	106.2	136	20	0.52	0.52	8.77
Ethyl benzoate	C9H10O2	93-89-0	150.2			0	1	8.90
Ethyl t-butyl ether	C6H14O	637-92-3	102.2		25	0	0.9	9.39
Ethyl butyrate	C6H12O2	105-54-4	116.2			3.4	1.5	~9.8
Ethyl chloroformate	C3H5O2Cl	541-41-3	108.5			0	79	10.64
Ethyl cyanoacrylate	C6H7O2N	7085-85-0	125		0.2	0	1.6	~10
Ethylcyclohexane	C8H16	1678-91-7	112.2			1.4	0.9	~9.5
Ethyl decanoate	C12H24O2	110-38-3	200.3	245		0	1.9	~9.6
Ethylenediamine	C2H8N2	107-15-3	60.1	116	10	0.9	0.8	8.6
Ethylene glycol	C2H6O2	107-21-1	62.1	197	10	0	16	10.16
Ethylene glycol dimethyl ether	C4H10O2	110-71-4	90.1	85		1.1	0.86	9.2
Ethylene oxide	C2H4O	75-21-8	44.1	11	1	0	13	10.57
Ethyl ether	C4H10O	60-29-7	74.1	35	400	0	1.1	9.51
Ethyl 3-ethoxypropionate	C7H14O3	763-69-9	146.2		100	1.2	0.75	
Ethyl formate	C3H6O2	109-94-4	74.1		100	0	34	10.61
Ethyl hexanoate	C8H16O2	123-66-0	144.2			3.4	1.7	
Ethylhexanol, 2-	C8H18O	104-76-7	130.2		10	0	1.6	~9.8
Ethylhexyl acrylate,2-	C11H20O2	103-11-7	184.3	216	5	0	1.1	~9
Ethylidenenorbornene	C9H12	16219-75-3	120.2		2	0.43	0.39	≤8.8
Ethyl iodide	C2H5I	75-03-6	156			0.4	0.4	9.34
Ethyl isopropyl ketone	C6H12O	565-69-5	100.2			0	0.9	9.1
Ethyl (S)-(-)-lactate	C5H10O3	687-47-8	118.1			13	3.2	~10
Ethyl mercaptan	C2H6S	75-08-1	62.1	35	0.5	0.6	0.56	9.29
Ethyl methacrylate	C6H10O2	97-63-2	114.1			1.5	1	
Ethyl 2-methylbutyrate	C7H14O2	7452-79-1	130.2			1.9	1.5	
Ethyl methyl carbonate	C4H8O3	623-53-0	104.1			NR	19	10.4
Ethyl octanoate	C10H20O2	106-32-1	172.3	207		0	2.4	~9.7

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Ethyl perfluorobutyl ether	C6H5F9O	163702-05-4	264.1	50		NR	NR	~11
Ethyl phenyl acetate	C10H12O2	101-97-3	164.2			0	1.3	~9
Ethyl propanoate	C5H10O2	105-37-3	102.1			6.1	2.6	10.01
Ethyl sulfide	C4H10S	352-93-2	90.2			0	0.51	8.43
Ethyl 2,2,2-trifluoroethyl ether	C4H7F3O	461-24-5	128.1			0	5.1	~10.4
Eucalyptol	C10H18O	470-82-6	154.2			0	0.7	~9
Eugenol	C10H12O2	97-53-0	164.2			0	0.5	~9
Fluorine	F2	7782-41-4	38		0.1	NR	NR	15.70
Fluoro-2-propanone, 1-	C3H5FO	430-51-3	76.1			0	0	9.92
Fluorobenzene	C6H5F	462-06-6	96.1			0.8	0.7	9.20
Fluorobenzoic acid, 4-	C7H5FO2	456-22-4	140.1			0	2.1	9.91
Formaldehyde	CH2O	50-00-0	30		0.1	NR	NR	10.87
Formamide	CH3NO	75-12-7	45		1	0	6.9	10.20
Formic acid	CH2O2	64-18-6	46		5	0	0	11.05
Furan	C4H4O	110-00-9	68.1		0.02	0	0.5	8.88
Furfural	C5H4O2	98-01-1	96.1		0.2	0	0.92	9.21
Furfuryl alcohol	C5H6O2	98-00-0	98.1		0.2	0	0.8	~8.5
Furfuryl mercaptan	C5H6OS	98-02-2	114.1	155		0.9	0.9	~8.5
Gasoline	------	8006-61-9	93	35-200	300	1.3	1	
Geranial	C10H16O	141-27-5	152.2	229		0	0.5	~8.7
Geraniol	C10H18O	106-24-1	154.2	230		0	0.8	~9
Geranyl acetate	C12H20O2	105-87-3	196.3	245		0	1.3	~9
Geranyl acetate	C5H8O2	111-30-8	100.1	187	C0.05	1.1	0.8	
Glycidol	C3H6O2	556-52-5	74.1	167	2	0	0	~10.8
Glycidyl methacrylate	C7H10O3	106-91-2	142.2	189	0.5	0	1.1	~10
Glycolaldehyde	C2H4O2	141-46-8	60.1	131		0	4.9	~10.4
Glyoxal	C2H2O2	107-22-2	58	51	0.1	0	0.9	10.2
Guaiacol	C7H8O2	90-05-1	124.1	205		0	0.9	~8
Halothane	CF3CHBrCl	151-67-7	197.4	50	50	NR	NR	11.0
Heptan-2-one	C7H14O	110-43-0	114.2	151	50	1	0.9	9.33
Heptan-3-one	C7H14O	106-35-4	114.2	146	50	0.9	0.8	9.02
Heptan-4-one	C7H14O	123-19-3	114.2	144	50	0.9	0.8	9.10
Heptane, n-	C7H16	142-82-5	100.2	98	400	45	2.8	9.92
Heptanol	C7H16O	53535-33-4	116.2			0	1.8	~9.8
Heptene, 1-	C7H14	592-76-7	98.2			1.2	0.9	9.34
Heptylcyclopentan-1-one, 2-	C12H22O	137-03-1	182.3			0	0.9	~9
Heptyne, 1-	C7H12	628-71-7	96.2			0	1.9	10.04

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Hex-1-en-3-ol	C6H12O	4798-44-1	100.2			0	1	~9
Hexachlorodisilane	Cl6Si2	13465-77-5	268.9	144		0	8.1	~10.4
Hexachloroethane	C2Cl6	67-72-1	236.7	187	1	NR	NR	11.22
Hexafluoropropylene	C3F6	116-15-4	150	-28	0.1	NR	0	10.60
Hexamethyldisilazane, 1,1,1,3,3,3-	C6H19NSi2	999-97-3	161.4	127	10	~0.5	0.24	~8.6
Hexamethyldisiloxane	C6H18OSi2	107-46-0	162.4			~0.35	0.3	9.64
Hexamethylene diisocyanate	C8H12N2O2	822-06-0	168.2		0.005	0	1.4	~9
Hexamethyleneimine	C6H13N	111-49-9	99.2			0	1	8.41
Hexan-2-one	C6H12O	591-78-6	100.2			0.8	0.9	9.34
Hexane, n-	C6H14	110-54-3	86.2	68	50	350	4.3	10.13
Hexanoic acid	C6H12O2	142-62-1	116.2			0	4.1	10.12
Hexanol, 1-	C6H14O	111-27-3	102.2	157		9	2.5	9.89
Hexene, 1-	C6H12	592-41-6	84.2		50	1.2	1	9.44
Hexenyl acetate, cis-3-	C8H14O2	3681-71-8	142.2			1.3	1.1	~9
Hexenyl butyrate, cis-3-	C10H18O2	16491-36-4	170.2			0	1.6	~9
Hexylaldehyde	C6H12O	66-25-1	100.2	129		1.9	1.3	9.72
Histoclear	C10H16	5989-27-5	136.2	179	5	0.5	0.4	~8.8
Hydrazine	H4N2	302-01-2	32	114	0.01	8	3	~8.9
Hydrogen	H2	1333-74-0	2	-253		NR	NR	15.43
Hydrogen chloride	HCl	7647-01-0	36.5	-85	C2	NR	NR	12.74
Hydrogen cyanide	HCN	74-90-8	27	26	C4.7	NR	NR	13.60
Hydrogen fluoride	HF	7664-39-3	20	20	0.5	NR	NR	15.98
Hydrogen iodide	HI	10034-85-2	127.9	-35		0	0.6	10.39
Hydrogen selenide	H2Se	7783-07-5	81	-41	0.05	0	2.1	9.88
Hydrogen sulfide	H2S	7783-06-4	34.1	-60	1	0	3.3	10.46
Hydrogen telluride	H2Te	7783-09-7	129.6	-2		0	2.1	9.14
Hydroxybutanal, 3-	C4H6O2	107-89-1	88.1			0	2.1	~9.5
Hydroxycitronellal	C10H20O2	107-75-5	172.3			0	1.1	~9
Hydroxyethyl acrylate	C5H8O3	818-61-1	116.1			0	1.3	~10
Hydroxylamine	H3NO	7803-49-8	33			0	2.1	10.00
Hydroxynonyl acetate	C11H22O3	1322-17-4	202			0	1.5	~9.5
Hydroxypropyl acrylate, 2-	C6H10O3	999-61-1	130		0.5	0	1.6	~9
Indene	C9H8	95-13-6	116.2		5	0.5	0.6	8.81
Indole	C8H7N	120-72-9	117.1			0	0.5	7.76
Iodine	I2	7553-56-2	253.8	184	0.015	0.1	0.1	9.31
Iodobenzene	C6H5I	591-50-4	204			0	0.3	8.73
Iodoethene	C2H3I	593-66-8	153.9			0	1.3	9.30

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Iodoform	CHI3	75-47-8	393.7		0.2	0	1.6	9.25
Iodomethane	CH3I	74-88-4	141.9	42	2	0.21	0.22	9.54
Isoamyl acetate	C7H14O2	123-92-2	130.2			10.1	2.1	~9.7
Isobornyl acetate	C12H20O2	125-12-2	196.3			0	0.6	~9
Isobutane	C4H10	75-28-5	58.1	-12	1000	NR	8	10.47
Isobutanol	C4H10O	78-83-1	74.1	108	50	19	3.8	10.02
Isobutyl acetate	C6H12O2	110-19-0	116.2			9.9	1.9	9.9
Isobutyl acrylate	C7H12O2	106-63-8	128.2			0	1.5	~9.5
Isobutylamine	C4H11N	78-81-9	73.1			3.1	1.1	8.70
Isobutylbenzene	C10H14	538-93-2	134.2			0.5	0.5	8.68
Isobutylene	C4H8	115-11-7	56.1	-7	250	1	1	9.24
Isobutylene epoxide	C4H8O	558-30-5	72.1			0	3.1	10.0
Isobutyraldehyde	C4H8O	78-84-2	72.1		25	0	1.1	9.74
Isobutyric acid	C4H8O2	79-31-2	88.1			15.1	4.5	10.24
Isodecanol	C10H22O	25339-17-7	158			0	1	~9.8
Isodihydrolavandulal	C10H18O	35158-25-9	154.2			~0.9	0.8	~9
Isoeugenol	C10H12O2	97-54-1	164.2	266		0	0.5	~9
Isoflurane	C3H2ClF5O	26675-46-7	184.5	49	5	NR	NR	~11
Isoheptane	C7H16	591-76-4	100.2			0	1.1	9.84
Isomenthone	C10H18O	1196-31-2	154.2			0	0.7	9.86
Isononanal	C9H18O	5435-64-3	142.2			1.5	1	~9.6
Isononanol	C9H20O	3452-97-9	144.3			0	1.4	~9.8
Isooctane	C8H18	540-84-1	114.2	99		3.3	1.2	9.86
Isooctanol	C8H18O	26952-21-6	130		50	0	1.6	~9.8
Isopar E Solvent	------	64741-66-8	121			1.7	0.8	
Isopar G Solvent	------	64742-48-9	148			0	0.79	~9.5
Isopar K Solvent	------	64742-48-9	156			0.85	0.53	
Isopar L Solvent	------	64742-48-9	163			0.86	0.52	
Isopar M Solvent	------	64742-47-8	191			0	0.66	~9.5
Isopentane	C5H12	78-78-4	72.1			0	4.1	10.32
Isopentanol	C5H12O	137-32-6	88.1			5.9	1.9	9.86
Isopentene	C5H10	563-46-2	70.1			0	0.9	9.12
Isophorone	C9H14O	78-59-1	138.2		2	1.1	0.9	9.07
Isophorone diisocyanate	C12H18N2O2	4098-71-9	222		0.005	0	0.7	~9
Isoprene	C5H8	78-79-5	68.1		2	0.69	0.63	8.85
Isopropanol	C3H8O	67-63-0	60.1	83	200	500	6	10.12
Isopropanolamine	C3H9NO	78-96-6	75.1			0	1.6	~9.6

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Isopropoxyethanol, 2-	C5H12O2	109-59-1	104.1		25	1.6	1.3	
Isopropoxyethyl acetate	C7H14O2	19234-20-9	146			0	1.3	~9.5
Isopropyl acetate	C5H10O2	108-21-4	102.1		100	8.1	2.5	9.99
Isopropylamine	C3H9N	75-31-0	59.1		5	0.9	0.9	8.72
Isopropylaminoethanol, 2-	C5H13NO	109-56-8	103.2			0	1.9	~9
Isopropyl chloroformate	C4H7O2Cl	108-23-6	122.6			0	1.7	~10.2
Isopropylcyclohexane	C9H18	696-29-7	126.2			1.2	0.8	9.33
Isopropyl nitrite	C3H7NO2	541-42-4	89.1			0	3.9	10.23
Isothiazole	C3H3NS	288-16-4	85.1			0	2.9	9.55
Isovaleraldehyde	C5H10O	590-86-3	86.1			1.6	1.4	9.72
Isovaleric acid	C5H10O2	503-74-2	102.1			26	5.6	~10.2
Jasmone, cis-	C11H16O	488-10-8	164.2			0	0.6	~9
Jet fuel JP-4	------	------	115	70-240		0	1	~9
Jet fuel JP-5	------	------	167	180-270	29	0	0.6	~9
Jet fuel JP-8	------	------	165	170-270	30	0	0.6	~9
Jet fuel TS	------	------	165		30	0.9	0.6	~9
Kerosene	------	8008-20-6	170		29	0.8	0.9	~9
Ketene	C2H2O	463-51-4	42			0	2.9	9.62
Limonene, D-	C10H16	5989-27-5	136.2	179	5	0	0.33	~8.8
Linalool oxide	C10H18O2	14049-11-7	170.2			0	0.7	~9
Linalyl acetate	C12H20O2	115-95-7	196.3			0	1.2	~9
Maleic anhydride	C4H2O3	108-31-6	98.1	202	0.0025	0	1.9	9.90
Menthol	C10H20O	1490-04-6	156.3			0	0.6	~9
Menthone	C10H18O	89-80-5	154.2			0	0.5	~9
Mercaptoacetic acid	C2H4O2S	68-11-1	92.1			0	0.9	~9.8
Mesitylene	C9H12	108-67-8	120.2	165	25	0.36	0.35	8.41
Metaldehyde	C8H16O4	108-62-3	176.2			0	1.9	~9.7
Methacrylamide	C4H7NO	79-39-0	85.1			0	1.9	~10
Methacrylic acid	C4H6O2	79-41-4	86.1		20	0	2.4	10.15
Methacrylonitrile	C4H5N	126-98-7	67.1			0	4.9	10.34
Methane	CH4	74-82-8	16	-162	1000	NR	NR	12.61
Methanol	CH4O	67-56-1	32	65	200	NR	NR	10.85
Methoxy-1-butanol, 3-	C5H12O2	2517-43-3	104.1			0	2.9	~9.5
Methoxybutyl acetate, 3-	C7H14O3	4435-53-4	146.2			0	1.9	~9.5
Methoxy-2,2-dimethyl-propane, 1-	C6H14O	1118-00-9	102.2			0	1	9.3
Methoxyethane	C3H8O	540-67-0	60.1			0	0.9	9.72

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Methoxyethanol, 2-	C3H8O2	109-86-4	76.1		0.1	4.8	2.4	9.6
Methoxyethene	C3H6O	107-25-5	58.1			0	0.9	8.95
Methoxyethoxy ethanol, 2-	C7H16O3	111-77-3	120.1	194		2.3	1.2	
Methoxyethyl acetate, 2-	C5H10O3	110-49-6	118.1		0.1	7.9	4.9	
Methoxymethy-lethoxy-2-propanol	C7H16O3	34590-94-8	148.2			0	1.2	9.3
Methoxypropane, 2-	C4H10O	598-53-8	74.1			0	1.3	9.45
Methoxy-1-propanol, 2-	C4H10O2	1589-47-5	90.1		50	0	1.9	~9.6
Methyl acetate	C3H6O2	79-20-9	74.1	57	200	0	6.6	10.27
Methyl acetoacetate	C5H8O3	105-45-3	116.1			0	2.9	9.81
Methyl acrylate	C4H6O2	96-33-3	86.1		2	0	3.7	10.25
Methylamine	CH5N	74-89-5	31.1		5	0	1.4	8.97
Methyl anthranilate	C8H9NO2	134-20-3	151.2	256		0	0.5	~9
Methyl benzoate	C8H8O2	93-58-3	136.1			0	1.3	9.32
Methyl bromide	CH3Br	74-83-9	94.9	4	1	110	1.7	10.54
Methylbutan-1-ol, 3-	C5H12O	123-51-3	88.1	131		10.1	2.4	9.8
Methylbutanal, 2-	C5H10O	96-17-3	86.1			1.4	1.3	~9.7
Methyl t-butyl ether	C5H12O	1634-04-4	88.1	55	50	0	0.91	9.24
Methylbutyric acid, 2-	C5H10O2	116-53-0	102.1			21	6.1	
Methyl chloride	CH3Cl	74-87-3	50.5		50	NR	NR	11.22
Methyl chloroformate	C2H3O2Cl	79-22-1	94.5		0.2	NR	NR	11.36
Methyl cyanoacrylate	C5H5O2N	137-05-3	111.1		2	NR	NR	10.98
Methylcyclohexane	C7H14	108-87-2	98.2		400	1.6	0.97	9.64
Methylcyclohexanol	C7H14O	25639-42-3	114.2		50	0	2.5	~9.8
Methylcyclopentane	C6H12	96-37-7	84.2			0	1.6	9.85
Methyldichloramine	CH3Cl2N	7651-91-4	99.9			0	2.1	9.5
Methyl-3,3-dimethacrylate	C6H10O2	924-50-5	114.1			0	2.6	~9.5
Methylene chloride	CH2Cl2	75-09-2	84.9		25	NR	NR	11.32
Methyl ether	C2H6O	115-10-6	46.1	-24	1000	4.8	3.1	10.03
Methyl ethyl ketone	C4H8O	78-93-3	72.1	80	200	0.86	0.86	9.51
Methyl ethyl ketone peroxide	C8H18O6	1338-23-4	146			0	0.9	~9.5
Methyl formate	C2H4O2	107-31-3	60.1		50	NR	NR	10.82
Methyl heptyne carbonate	C9H14O2	111-12-6	154.2			0	1.2	~9
Methylhydrazine	CH6N2	60-34-4	46.1	87	0.01	1.4	1.2	7.7
Methyl ionone	C14H22O	1335-46-2	192.3	127		0	0.5	~9
Methyl isobutyl ketone	C6H12O	108-10-1	100.2	117	20	0.9	0.8	9.30
Methyl Isocyanate	C2H3NO	624-83-9	57.1	40	0.02	0	4.6	10.67
Methyl isopropyl ketone	C5H10O	563-80-4	86.1	94	20	0.9	0.9	9.31

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Methyl isothiocyanate	C2H3NS	556-61-6	73.1	119	IDLH3	0.5	0.45	9.25
Methyl mercaptan	CH3SH	74-93-1	48.1	6	0.5	0.65	0.54	9.44
Methyl methacrylate	C5H8O2	80-62-6	100.1	101	50	2.7	1.5	9.7
Methylpentan-2-ol, 4-	C6H14O	108-11-2	102.2			2.9	1.3	~9.8
Methylpentane, 2-	C6H14	107-83-5	86.2			33	2.9	10.12
Methyl perfluorobutyl ether	C5H3F9O	163702-07-6	250.1			NR	NR	~11
Methyl phenethyl ether	C9H12O	3558-60-9	136.2			0	0.7	~7.7
Methyl phenylacetate	C9H10O2	101-41-7	150.2			0	0.5	~9
Methyl propargyl ether	C4H6O	627-41-8	70.1			0	2.1	9.78
Methyl propionate	C4H8O2	554-12-1	88.1			0	3.9	10.15
Methyl propyl ketone	C5H10O	107-87-9	86.1		150	0	0.93	9.38
Methyl propynoate	C4H4O2	922-67-8	84.1			0	9.9	10.3
Methylpyrrole, N-	C5H7N	96-54-8	81.1			0.9	1	
Methyl-2-pyrrolidinone, N-	C5H9NO	872-50-4	99.1	202	10	1	0.8	9.17
Methyl salicylate	C8H8O3	119-36-8	152.1	222		1.3	0.9	7.65
Methylstyrene	C9H10	25013-15-4	118		10	0.6	0.6	8.18
Methyl sulfide	C2H6S	75-18-3	62.1	37	10	0.49	0.44	8.69
Methyl thiocyanate	C2H3NS	556-64-9	73.1			3.1	2.1	9.96
Methyl thioglycolate	C3H6O2S	2365-48-2	106.1			3.9	1.9	~10
Methylundecanal, 2-	C12H24O	110-41-8	184.3			0	0.9	~9.5
Methyl vinyl ketone	C4H6O	78-94-4	70.1			0	0.7	9.65
Mineral spirits	------	8020-83-5	144	130-200	100	1	0.71	
Morpholine	C4H9NO	110-91-8	87.1			2.1	4.1	~9
Myrcene	C10H16	123-35-3	136.2			0	0.6	~8.2
Naphtha, heavy aromatic	------	64742-94-5	128.2			0	0.5	~9
Naphtha, light aromatic	------	64742-95-6	128.2			0	0.6	~9
Naphtha, medium aliphatic	------	64742-88-7	128.2			0	0.9	~10
Naphthalene	C10H8	91-20-3	128.2	218	10	0.45	0.42	8.14
Naphthol methyl ether, 2-	C11H10O	93-04-9	158.2			0	0.6	~8.5
Neopentane	C5H12	463-82-1	72.1			0	2.9	10.21
Neopentyl alcohol	C5H12O	75-84-3	88.1			0	1.9	9.72
Nickel carbonyl in CO	C4O4Ni	13463-39-3	170.7		0.001	0	0.17	<8.8
Nitric oxide	NO	10102-43-9	30	-152	25	6	5.2	9.25
Nitrobenzene	C6H5NO2	98-95-3	123.1		1	2.6	1.9	9.81
Nitroethane	C2H5NO2	79-24-3	75.1		100	0	0	10.88
Nitrogen	N2	7727-37-9	28		Asphix	0	0	15.58
Nitrogen dioxide	NO2	10102-44-0	46	21	0.2	23	16	9.75

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Nitromethane	CH3NO2	75-52-5	61		20	0	0	11.02
Nitropropane, 2-	C3H7NO2	79-46-9	89.1		10	0	0	10.71
N-Methylolacrylamide	C4H7NO2	924-42-5	101.1			0	1.9	~10.3
Nonanal	C9H18O	124-19-6	142.2			0	1.2	~9
Nonane	C9H20	111-84-2	128.3		200	4.6	1.3	9.72
Nonanol (mixed isomers)	C9H20O	143-08-8	144.3			0	1.3	~9.8
Nonene (mixed isomers)	C9H18	27215-95-8	126			0	0.7	~9.3
Nonene, 1-	C9H18	124-11-8	126.2			0	0.7	~9.4
Norbornadiene, 2,5-	C7H8	121-46-0	92.1			0.8	0.7	8.38
Norpar 12	------	64771-72-8	161			3.2	1.1	
Norpar 13	------	64771-72-8	189			2.7	1	
Octalactone, gamma-	C8H14O	104-50-7	142.2			0	2.9	~9
Octamethylcyclotetrasiloxane	C6H12O4Si4	556-67-2	296.6	176		0.2	0.2	<9
Octamethyltrisiloxane	C8H24O2Si3	107-51-7	236.5	153		0.24	0.22	<9
Octane, n-	C8H18	111-65-9	114.2	125	300	13.2	1.8	9.82
Octanol (mixed isomers)	C8H18O	111-87-5	130.2			0	1.4	~9.8
Octene (mixed isomers)	C8H16	25377-83-7	112			0	0.8	9.4
Octene, 1-	C8H16	111-66-0	112.2			0.9	0.75	9.42
Oxalyl bromide	C2Br2O2	15219-34-8	215.8			0	4.9	10.49
Oxydiethanol, 2,2´-	C4H10O3	111-46-6	106.1	245	10	0	1.9	~9
Oxygen	O2	7782-44-7	32	-186	NA	NR	NR	12.07
Ozone	O3	10028-15-6	48	-112	0.05	NR	NR	12.52
Paraldehyde	C6H12O3	123-63-7	132.2			4.9	2.3	~9.7
Pentacarbonyl iron	FeC5O5	13463-40-6	195.9			0	1.1	~8
Pentanal	C5H10O	110-62-3	86.1			1.8	1.6	9.74
Pentandione, 2,4-	C5H8O2	123-54-6	100.1		25	0.9	1.3	8.85
Pentane	C5H12	109-66-0	72.1	36	1000	80	8.4	10.35
Pentanoic acid	C5H10O2	109-52-4	102.1			52.1	8.1	10.53
Pentanol, 2-	C5H12O	6032-29-7	88.1		20	16.1	2.1	9.78
Pentanol, 3-	C5H12O	584-02-1	88.1		20	3.6	1.8	9.76
Pentan-3-one	C5H10O	96-22-0	86.1		200	0.8	0.8	9.31
Pentene, 1-	C5H10	109-67-1	70.1			1.1	1	9.49
Pentylcyclopentan-1-one, 2-	C10H18O	4819-67-4	154			0	1.1	~9
Pentylcyclopentane	C10H20	3741-00-2	140.3			0	1	9.91
Pentyne, 1-	C5H8	627-19-0	68.1			0	1	10.1
Peracetic acid	C2H4O3	79-21-0	76.1		STEL0.4	NR	NR	~11
Perchloroethene	C2Cl4	127-18-4	165.8	121	25	0.69	0.57	9.32

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Perchloryl fluoride	ClO3F	7616-94-6	102.5			NR	NR	13.6
Perfluorobutadiene	C4F6	685-63-2	162			0	2.9	9.50
Perfluorocyclobutane	C4F8	115-25-3	200			NR	NR	13.50
Perfluoropropane	C3F8	76-19-7	188			NR	NR	13.38
Perfluoro-tert-butylamine	C4H2F9N	2809-92-9	235.1			0	4.9	10.40
Petroleum ether	------	8032-32-4	90.1			0	1	~10
PGME	C4H12O2	107-98-2	90.1			2.4	1.5	
PGMEA	C6H12O3	108-65-6	132.2	146	50	1.65	1	
Phellandrene	C10H16	99-83-2	136.2			0	0.9	~8.2
Phenol	C6H6O	108-95-2	94.1	182	5	1	1	8.51
Phenoxyethanol, 2-	C8H10O2	122-99-6	138.2			9.9	4.4	~8.5
Phenylacetaldehyde	C8H8O	122-78-1	120.1			0	0.6	8.80
Phenylacetic acid	C8H8O2	103-82-2	136.1			0	1.1	8.26
Phenyl chloroformate	C7H5ClO2	1885-14-9	156.6			0	1	~9
Phenylcyclohexane	C12H16	827-52-1	160.3			0	0.5	~9
Phenyl-2,3-epoxypropyl ether	C9H10O2	122-60-1	150.2			0	0.9	~8.6
Phenylethyl acetate, 1-	C10H12O2	93-92-5	164.2			0	0.8	~9
Phenylethyl alcohol	C8H10O	60-12-8	122.2			0	1.3	~9
Phenyl ethyl isobutyrate, 2-	C12H16O2	103-48-0	192.3			0	1.4	~9
Phenylpropene, 2-	C9H10	98-83-9	118.2			0.5	0.5	~8.5
Phosgene	COCl2	75-44-5	98.9	9	0.1	NR	NR	11.55
Phosphine (coats lamp)	PH3	7803-51-2	34	-88	0.05	28	3.9	9.87
Phthalonitrile	C8H5N2	91-15-6	128.1			0	1.3	9.9
Picoline, 3-	C6H7N	108-99-6	93.1			0.9	0.8	9.04
Pine oil	------	8002-09-3	136			0	1.1	~9.5
Pinene, a-	C10H16	2437-95-8	136.2			0	0.31	8.07
Pinene, b-	C10H16	18172-67-3	136.2	166	20	0.38	0.37	8.10
Piperazine	C4H10N2	110-85-0	86.1		0.03	0	0.9	8.72
Piperidine	C5H11N	110-89-4	85.1		1	0.9	1.1	8.02
Piperylene, Isomer Mix	C5H8	504-60-9	68.1	43	100	0.76	0.69	8.6
Propadiene	C3H4	463-49-0	40.1			0	0.9	9.83
Propanamide	C3H7NO	79-05-0	73.1			0	2.1	~9.5
Propane	C3H8	74-98-6	44.1	-42	1000	0	0	10.94
Propanol, n-	C3H8O	71-23-8	60.1		100	40.1	5.5	10.22
Propanolamine	C3H9NO	156-87-6	75.1			0	1.6	~9.5
Propargyl chloride	C3H3Cl	624-65-7	74.5			0	8.3	9.82
Propene	C3H6	115-07-1	42.1	-48	500	1.5	1.4	9.73

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Propen-1-imine, 2-	C3H5N	73311-40-7	55.1			0	1.9	9.65
Propiolic acid	C3H2O2	471-25-0	70			0	7.9	10.45
Propionaldehyde	C3H6O	123-38-6	58.1		20	0	1.6	9.95
Propionic acid	C3H6O2	79-09-4	74.1		10	0	10.1	10.44
Propionitrile	C3H5NO	107-12-0	55.1		6	0	0	11.5
Propoxy-2-propanol, 1-	C6H14O2	1569-01-3	118.2			1.7	1.3	~9.5
Propyl acetate, n-	C5H10O2	109-60-4	102.1		100	18	3.1	10.04
Propylamine, n-	C3H9N	107-10-8	59.1			1.1	1.1	8.5
Propylbenzene	C9H12	103-65-1	120.2			0.5	0.4	8.72
Propylbenzene (all isomers)	C9H12	74296-31-4	120			0	0.6	8.7
Propyl butanoate	C7H14O2	105-66-8	130.2			2.8	1.4	
Propylene carbonate	C4H6O3	108-32-7	102.1			0	0	~10.5
Propylene glycol	C3H8O2	57-55-6	76.1	188	3	18	5.5	
Propyleneimine	C3H7N	75-55-8	57.1	67	0.2	1.5	1.25	9.0
Propylene oxide	C3H6O	16088-62-3	58.1	34	2	0	6.6	10.22
Propyl formate	C4H8O2	110-74-7	88.1			0	20	10.54
Propyl iodide	C3H7I	107-08-4	170			0	0.9	9.26
Propyl mercaptan	C3H8S	107-03-9	76.2		C0.5	1	1.1	9.20
Propyl mercaptan, 2-	C3H8S	75-33-2	76.2			0.64	0.66	9.15
Propylnitrate, n-	C3H7NO3	627-13-4	105.1		25	NR	NR	11.07
Propyne	C3H4	74-99-7	40.1		1000	0	4.1	
Prop-2-yn-1-ol	C3H4O	107-19-7	56.1		1	0	3.8	10.5
Pyrazine	C4H4N2	290-37-9	80.1	115		0	3.1	9.29
Pyridine	C5H5N	110-86-1	79.1	115	1	0.78	0.68	9.25
Pyridinol, 4-	C5H5NO	626-64-2	95.1			0	2.9	9.75
Pyridylamine, 2-	C5H6N2	504-29-0	94.1			0	0.9	8.10
Pyrrole	C4H5N	109-97-7	67.1	130		1	1.3	8.02
Pyrrolidine (Coats Lamp)	C4H9N	123-75-1	71.1	87		2.1	1.3	8.77
Pyruvaldehyde	C3H4O2	78-98-8	72.1			0	0.8	9.6
Rose oxide, cis-	C10H18O	16409-43-1	154.2			0	0.7	~9
Sevoflurane	C3H3F7O	28523-86-6	200.1	59		NR	NR	~11
Silane	SiH4				5	NR	NR	11.0
Stibine	SbH3	7803-52-3	124.8			0	1.4	9.89
Styrene	C8H8	100-42-5	104.1	145	20	0.45	0.4	8.43
Sulfur dichloride	Cl2S	10545-99-0	103			0	2.1	9.47
Sulfur dioxide	SO2	7446-09-5	64.1	-10	STEL0.25	NR	NR	12.30
Sulfur hexafluoride	SF6	2551-62-4	146.1			NR	NR	19.30
Sulfur tetrafluoride	SF4	7783-60-0	108.1		C0.1	NR	NR	12.63

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Terpineol, a-	C10H18O	98-55-5	154.2	217		0	0.7	~9
Terpinolene	C10H16	586-62-9	136.2			1	0.7	8.1
Terpinyl acetate, a-	C12H20O2	80-26-2	196.3	220		0	1.3	~9
Terpinyl methyl ether	C11H20O	14576-08-0	168			0	0.6	~9
Tetrabromoethane, 1,1,2,2-	C2H2Br4	79-27-6	345.7	244	0.1	0	1.9	~10
Tetrachloroethane, 1,1,1,2-	C2H2Cl4	630-20-6	167.8	131		NR	NR	~11.1
Tetrachloroethane, 1,1,2,2-	C2H2Cl4	79-34-5	167.8	147	1	NR	NR	~11.1
Tetrachloropyridine, 2,3,5,6-	C5HNCl4	2402-79-1	216.9	252	0.6	0	0.9	~9
Tetrachlorosilane	SiCl4	10026-04-7	169.9		C1	NR	NR	11.79
Tetraethyllead	C8H20Pb	78-00-2	323.4	85	0.008	NR	NR	~11.1
Tetraethyl orthosilicate	C8H20O4Si	78-10-4	208.3	169	10	0	0.71	9.77
Tetrafluoroethylene	C2F4	116-14-3	100		2	0	16	10.12
Tetrafluoromethane	CF4	75-73-0	88			NR	NR	15.3
Tetrahydrofuran	C4H8O	109-99-9	72.1	66	50	1.9	1.7	9.41
Tetrahydronaphthalene	C10H12	119-64-2	132.2		2	0	0.5	8.46
Tetrahydropyran	C5H10O	142-68-7	86.1			1.6	1.6	9.25
Tetrahydrothiophene	C4H8S	110-01-0	88.2		50	0.6	0.8	8.38
Tetramethylbenzene (all isomers)	C10H14	95-93-2	134.2	192		0	0.4	8.16
Tetramethylbutane, 2,2,3,3-	C8H18	594-82-1	114.2			0	1.1	9.8
Tetramethyldisiloxane, 1,1,3,3-	C4H14OSi2	3277-26-7	134.32			1	0.8	~9
Tetramethylgermane	C4H12Ge	865-52-1	132.8			0	1.9	9.34
Tetramethylguanidine, N,N,N´,N´	C5H13N3	80-70-6	115.2	163		0	0.7	8.43
Tetramethyl orthosilicate	C4H12O4Si	681-84-5	152.2	122	1	10	1.9	
Tetramethylsilane	C4H12Si	75-76-3	88.2			0	2.1	9.80
Tetramethyl succinonitrile	C8H12N2	3333-52-6	136.2		0.09	0	0	~11
Therminol VP-1	C12H10O & C12H10	101-84-8 & 92-52-4	165.8	257	1	0	0.4	~9
Thioacetic acid	C2H4OS	507-09-5	76.1			0	1.9	10.0
Thioanisole	C7H8S	100-68-5	124.2			0.8	0.7	7.94
Thiocarbonyl fluoride	CSF2	420-32-6	82.1			0	6.1	10.45
Thiocyanogen	C2S2N2	505-14-6	116.2			0	7.9	10.5
Thioformaldehyde trimer	C3H6S3	291-21-4	138.3			0	1.6	9.35
Thiophene	C4H4S	110-02-1	84.1			0.5	0.5	8.86
Thiophosgene	CSCl2	463-71-8	115			0	1.1	9.61
Thymol	C10H14O	89-83-8	150.2			0	0.8	~9

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Titanium-n-propoxide	C12H28O4Ti	3087-37-4	284.2			0	3.1	~9
Toluene	C7H8	108-88-3	92.1	111	20	0.54	0.5	8.82
Toluenesulfonyl chloride, p-	C7H7SO2Cl	98-59-9	190.6			0	3.1	~9
Toluidine, o-	C7H9N	95-53-4	107.2		2	0	0.6	7.40
Tolylaldehyde, p-	C8H8O	104-87-0	120.1			0	0.9	9.33
Tolylene-2,4-diisocyanate	C9H6N2O2	584-84-9	174.2	251	0.001	1.4	1.4	~8.8
Triazine, 1,3,5-	C3H3N3	290-87-9	81.1			0	6.1	10.01
Tributyl phosphate	C12H27O4P	126-73-8	266.3		0.2	0	5.1	8.91
Tributylamine	C12H27N	102-82-9	185.3			0	0	7.40
Trichlorobenzene, 1,2,4-	C6H3Cl3	120-82-1	181.4		C5	0.7	0.46	9.04
Trichloroethane, 1,1,1-	C2H3Cl3	71-55-6	133.4		350	NR	NR	11
Trichloroethane, 1,1,2-	C2H3Cl3	79-00-5	133.4		10	NR	NR	11.0
Trichloroethene	C2HCl3	79-01-6	131.4	87	10	0.62	0.54	9.47
Trichloro-2-fluoroethane, 1,1,2- R-131	C2H2Cl3F	359-28-4	151.4			NR	NR	~11
Trichloromethylsilane	CH3Cl3Si	75-79-6	149.5			0	0	
Trichloropropane, 1,2,3-	C3H5Cl3	96-18-4	147.4			NR	NR	~11
Trichlorotrifluoroethane, 1,1,1-	C2Cl3F3	354-58-5	187.4			NR	NR	11.50
Trichlorotrifluoroethane, 1,1,2-	C2Cl3F3	76-13-1	187.4			NR	NR	11.99
Triethylaluminum	C6H15Al	97-93-8	114.2			0	1.1	~10
Triethylamine	C6H15N	121-44-8	101.2	89	0.5	0.95	0.9	7.53
Triethylbenzene	C12H18	25340-18-5	162		5	0	0.5	~8.3
Triethyl borate	C6H15O3B	150-46-9	146			0	2.2	10.13
Triethyl phosphate	C6H15O4P	78-40-0	182.2		1	50	3.1	9.79
Triethyl phosphite	C6H15O3P	122-52-1	166.2			0	1.4	8.30
Triethyl silane	C6H16Si	617-86-7	116.3			0	2.1	9.50
Trifluoroethane, 1,1,2-	C2H3F3	430-66-0	84			NR	NR	12.9
Trifluoroethanol, 2,2,2-	C2H3F3O	75-89-8	100		0.3	NR	NR	~12
Trifluoroethene	C2HF3	359-11-5	82			0	5.1	10.14
Trifluoroethyl methyl ether, 2,2,2-	C3H5F3O	460-43-5	114.1			0	10.1	10.53
Trifluoroiodomethane	CF3I	2314-97-8	195.9		500	0	2.1	10.28
Trimethoxymethane	C4H10O3	149-73-5	106.1			10.1	4.1	9.50
Trimethoxyvinylsilane	C5H12O3Si	2768-02-7	148.2			0	2.1	~9.5
Trimethylamine	C3H9N	75-50-3	59.1		5	0.6	0.6	7.82
Trimethylbenzene mixtures	C9H12	25551-13-7	120		25	0.4	0.4	8.41
Trimethylbenzene, 1,2,4-	C9H12	95-63-6	120.2		25	0.7	0.7	8.39
Trimethyl borate	C3H9O3B	121-43-7	103.9			0	5.1	10.0

PID Correction Factors

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Table 1. Correction Factors for Measuring Various Compounds by PID

Compound Name	Formula	CAS No.	m.w.	b.p. (°C)	TWA* (ppm)	CF @ 9.8 eV	CF @ 10.6 eV	IE (eV)
Trimethylcyclohexane, 1,2,4-	C9H18	2234-75-5	126.2			0	1.1	9.35
Trimethylene oxide	C3H6O	503-30-0	58.1			0	1.6	9.65
Trimethyl phosphate	C3H9O4P	512-56-1	140.1			0	8	9.99
Trimethyl phosphite	C3H9O3P	121-45-9	124.1		2	0	1.1	~9
Trimethylsilane	C3H10Si	993-07-7	74.2			0	1.1	9.9
Trioxane	C3H6O3	110-88-3	90.1			0	2.1	10.3
Tropathiane	C8H16OS	67715-80-4	160			0	0.56	~9
Turpentine	C10H16	8006-64-2	136.2	90-115	20	0.4	0.3	
Undecane	C11H24	1120-21-4	156.3			3	1	9.56
Vanillin	C8H8O3	121-33-5	152.1			0	1.1	~9
Vinyl actetate	C4H6O2	108-05-4	86.1			1.5	1.2	9.19
Vinyl bromide	C2H3Br	593-60-2	106.9			1	1.6	9.82
Vinyl chloride	C2H3Cl	75-01-4	62.5	-13	1	0	2	9.99
Vinyl-1-cyclohexene, 4-	C8H12	100-40-3	108.2	129	0.1	0.6	0.56	8.93
Vinylene carbonate	C3H2O3	872-36-6	86			5.1	3.6	10.08
Vinyl ethyl ether	C4H8O	109-92-2	72.1			0.99	1.1	8.98
Vinyl fluoride	C2H3F	75-02-5	46		1	0	2.1	10.36
Vinylidene difluoride	C2H2F2	75-38-7	64		500	0	5.1	10.29
Vinyl-2-pyrrolidinone, 1-	C6H9NO	88-12-0	111.1	94	0.05	1	0.8	9.0
Vinylsilane	C2H6Si	7291-09-0	58.2			0	1.4	10.10
Xylene mixed isomers	C8H10	1330-20-7	106.2	140	100	0.49	0.44	8.56
Xylene, m-	C8H10	108-38-3	106.2	139	100	0.5	0.44	8.56
Xylene, o-	C8H10	95-47-6	106.2	144	100	0.56	0.46	8.56
Xylene, p-	C8H10	106-42-3	106.2	138	100	0.48	0.39	8.44
Xylidine mixed isomers	C8H11N	1300-73-8	121.2			0.5	0.6	7.50

* TWA taken as ACGIH 8-hr value wherever available. A few of these are AIHA WEELs, NIOSH RELs, or German MAKs. C = Ceiling, STEL = Short Term Exposure Limit. NA = Not Available.

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