

Compur Statox 501 PID Response Factors (10.6 eV)

Photoionisation cells are calibrated using isobutylene, but PID is a broadband VOC detection technique, with a sensitivity that differs for each VOC. If you know what VOC you are measuring, then the table below will allow you to calculate the concentration for your specific VOC. Remember, these are approximate values, so for best accuracy you should calibrate with the relevant VOC.

The table includes five columns:

- 1 **Gas/ VOC** The most common name for the VOC. If you can not find the name of your VOC of concern, then email us at compur@compur.de and we will help
- 2 **CAS No.** Sometimes it is easier to identify a VOC from the internationally recognised CAS No.: ask your supplier.
- 3 **Formula** To further assist in identifying the VOC, this also is helpful in identifying its molecular weight, from which ppm measurements can be converted to say, mg/m³ measurements.
- 4 **Response Factor (RF)** also known as correction factor. Multiply the output response from the cell by the RF to provide a normalised scale of VOC concentration.
- 5 **Relative sensitivity (%)** This is the inverse of the correction factor, specifying the percent response of the VOC, relative to isobutylene. If less than 100%, then the VOC is less responsive than isobutylene; if the relative sensitivity is greater than 100%, then the VOC is more responsive than isobutylene. Relative sensitivity (%) is specified the same way as cross-sensitivity for toxic gas sensors.

The RF is measured in dry air; high humidity will reduce this factor by 10% to 20%, so the RF should be increased in high humidities.

VOC response

The PID can not measure all VOCs or gases. Two types of VOCs are not measured:

ZR: No response. The 10.6 eV lamp does not ionise the VOC and the VOC can not be measured.

NV: The vapour pressure of the VOC at 20°C is less than a few ppm, so this Semi-Volatile Organic Compound can not be measured.

Frequently you will be measuring a mixture of VOCs. If the total concentration is within the linear range of your PID, then it is reasonable to assume that the concentrations are additive without interference between the different VOCs. Remember that if you are measuring a combination of VOCs, then accurate measurement of one of these VOCs will be difficult; without careful data analysis, you will get only a CF averaged measurement. Be cautious when reporting actual VOC concentration if you know that there may be several VOCs present.

Balance gas

The relative response is measured in laboratory air, with 20.9% oxygen, balance nitrogen. Some gases absorb UV light (oxygen, methane), so in gases where there are significant concentrations of oxygen or methane, the apparent concentration will be less than is actually present. Methane absorbs UV strongly, so for accurate measurements in methane, calibrate with your target VOC in the expected methane concentration. 50% LEL methane reduces reading by up to 50%. Gases such as nitrogen and helium do not absorb UV and do not affect the relative response.

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Acetaldehyde	75-07-0	C ₂ H ₄ O	4.9	21
Acetic Acid	64-17-7	C ₂ H ₄ O ₂	36	3
Acetic Anhydride	108-24-7	C ₄ H ₆ O ₃	4.0	25
Acetone	67-64-1	C ₃ H ₆ O	0.7	140
Acetonitrile	75-05-8	CH ₃ CN	ZR	
Acetylene	74-86-2	C ₂ H ₂	ZR	
Acrolein	107-02-8	C ₃ H ₄ O	4.0	25
Acrylic Acid	79-10-7	C ₃ H ₄ O ₂	2.7	36
Acrylonitrile	107-13-1	C ₃ H ₃ N	ZR	
Allyl alcohol	107-18-6	C ₃ H ₆ O	2.1	48
Allyl chloride	107-05-1	C ₃ H ₅ Cl	4.5	22
Ammonia	7664-41-7	H ₃ N	8.5	12
Amyl acetate, n-	628-63-7	C ₇ H ₁₄ O ₂	1.8	56
Amyl alcohol	71-41-0	C ₅ H ₁₂ O	3.2	31
Aniline	62-53-3	C ₆ H ₇ N	0.5	200
Anisole	100-66-3	C ₇ H ₈ O	0.5	211
Arsine	7784-42-1	AsH ₃	2.5	40
Asphalt, petroleum fumes	8052-42-4		1.0	100
Benzaldehyde	100-52-7	C ₇ H ₆ O	0.9	117
Benzene	71-43-2	C ₆ H ₆	0.5	200
Benzenethiol	108-98-5	C ₆ H ₅ SH	0.7	143
Benzonitrile	100-47-0	C ₇ H ₅ N	0.7	141
Benzyl alcohol	100-51-6	C ₇ H ₈ O	1.3	80
Benzyl chloride	100-44-7	C ₇ H ₇ Cl	0.6	182
Benzyl formate	104-57-4	C ₈ H ₈ O ₂	0.8	130
Biphenyl	92-52-4	C ₁₂ H ₁₀	0.4	250
Bis(2,3-epoxypropyl) ether	2238-07-5	C ₆ H ₁₀ O ₃	3.0	33
Boron trifluoride	7637 07 2	BF ₃	ZR	
Bromine	7726-95-6	Br ₂	20	5
Bromine pentafluoride	7789-30-2	BrF ₅	ZR	
Bromobenzene	108-86-1	C ₆ H ₅ Br	0.7	143
Bromochloromethane	74-97-5	CH ₂ ClBr	ZR	
Bromoethane	74-96-4	C ₂ H ₅ Br	5.0	20
Bromoethyl methyl ether, 2-	6482-24-2	C ₃ H ₇ OBr	2.5	40
Bromoform	75-25-2	CHBr ₃	2.8	36
Bromopropane, 1-	106-94-5	C ₃ H ₇ Br	1.3	77
Bromotrifluoromethane	75-63-8	CF ₃ Br	ZR	
Butadiene	106-99-0	C ₄ H ₆	0.8	120
Butadiene diepoxide, 1,3-	1464-53-5	C ₄ H ₆ O ₂	4.0	25
Butane, n-	106-97-8	C ₄ H ₁₀	46	2
Butanol, 1-	71-36-3	C ₄ H ₁₀ O	4.0	25
Buten-3-ol, 1-	598-32-3	C ₄ H ₈ O	1.2	87
Butene, 1-	106-98-9	C ₄ H ₈	1.3	77
Butoxyethanol, 2-	111-76-2	C ₆ H ₁₄ O ₂	1.1	91
Butyl acetate, n-	123-86-4	C ₆ H ₁₂ O ₂	2.4	41
Butyl acrylate, n-	141-32-2	C ₇ H ₁₂ O ₂	1.5	67
Butyl lactate	138-22-7	C ₇ H ₁₄ O ₃	2.5	40
Butyl mercaptan	109-79-5	C ₄ H ₁₀ S	0.5	185
Butylamine, 2-	513-49-5	C ₄ H ₁₁ N	0.9	111
Butylamine, n-	109-73-9	C ₄ H ₁₁ N	1.0	100
Camphene	565-00-4	C ₁₀ H ₁₆	0.5	222
Carbon dioxide	124-38-9	CO ₂	ZR	
Carbon disulfide	75-15-0	CS ₂	1.4	71
Carbon monoxide	630-08-0	CO	ZR	
Carbon tetrabromide	558-13-4	CBr ₄	3.0	33
Carbon tetrachloride	56-23-5	CCl ₄	ZR	
Carbonyl sulphide	463-58-1	COS	ZR	

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Carvone, R-	6485-40-1	C ₁₀ H ₁₄ O	1.0	100
Chlorine	7782-50-5	Cl ₂	ZR	
Chlorine dioxide	10049-04-4	ClO ₂	1.0	100
Chlorine trifluoride	7790-91-2	ClF ₃	ZR	
Chloro-1,1,1,2-tetrafluoroethane	2837-89-0	C ₂ HClF ₄	ZR	
Chloro-1,1,1-trifluoroethane, 2-	75-88-7	C ₂ H ₂ ClF ₃	ZR	
Chloro-1,1,2,2-tetrafluoroethane	354-25-6	C ₂ HClF ₄	ZR	
Chloro-1,1,2-trifluoroethane, 1-	421-04-5	C ₂ H ₂ ClF ₃	ZR	
Chloro-1,1-difluoroethane, 1-	75-68-3	C ₂ H ₃ ClF ₂	ZR	
Chloro-1,1-difluoroethane, 1-	75-68-3	C ₂ H ₃ ClF ₂	ZR	
Chloro-1,1-difluoroethane, 2-	338-65-8	C ₂ H ₃ ClF ₂	ZR	
Chloro-1,2,2-trifluoroethane	431-07-2	C ₂ H ₂ ClF ₃	ZR	
Chloro-1,3-butadiene, 2-	126-99-8	C ₄ H ₅ Cl	3.2	30
Chloro-1-fluoroethane, 1-	1615-75-4	C ₂ H ₄ ClF	ZR	
Chloro-2-fluoroethane, 1-	762-50-5	C ₂ H ₄ ClF	ZR	
Chloroacetaldehyde	107-20-0	C ₂ H ₃ OCl	ZR	
Chlorobenzene	108-90-7	C ₆ H ₅ Cl	0,5	220
Chlorodifluoromethane	75-45-6	CHClF ₂	ZR	
Chloroethane	75-00-3	C ₂ H ₅ Cl	ZR	
Chloroethanol 2-	107-07-3	C ₂ H ₅ ClO	10.0	10
Chloroethyl methyl ether, 2-	627-42-9	C ₃ H ₇ ClO	2,6	40
Chlorofluoromethane	593-70-4	CH ₂ ClF	ZR	
Chloroform	67-66-3	CHCl ₃	ZR	
Chloromethane	74-87-3	CH ₃ Cl	ZR	
Chloropentafluoroethane	76-15-3	C ₂ ClF ₅	ZR	
Chlorotoluene, o-	95-49-8	C ₇ H ₇ Cl	0.5	220
Chlorotoluene, p-	108-41-8	C ₇ H ₇ Cl	0.5	200
Chlorotrifluoroethylene	79-38-9	C ₂ ClF ₃	1.0	100
Chlorotrifluoromethane	75-72-9	CClF ₃	ZR	
Citral	5392-40-5	C ₁₀ H ₁₆ O	1.0	100
Citronellol	26489-01-0	C ₁₀ H ₂₀ O	1.0	100
Cresol, m-	108-39-4	C ₇ H ₈ O	1.1	95
Cresol, o-	95-48-7	C ₇ H ₈ O	1.1	95
Cresol, p-	106-44-5	C ₇ H ₈ O	1.1	95
Crotonaldehyde	4170-30-3	C ₄ H ₆ O	1.0	100
Cumene	98-82-8	C ₉ H ₁₂	0.6	170
Cyanamide	420-04-2	CH ₂ N ₂	ZR	
Cyanogen bromide	506-68-3	CNBr	ZR	
Cyanogen chloride	506-77-4	CNCl	ZR	
Cyclohexane	110-82-7	C ₆ H ₁₂	1.3	77
Cyclohexanol	108-93-0	C ₆ H ₁₂ O	2.9	34
Cyclohexanone	108-94-1	C ₆ H ₁₀ O	1.1	91
Cyclohexene	110-83-8	C ₆ H ₁₀	0.8	133
Cyclohexylamine	108-91-8	C ₆ H ₁₃ N	1.0	102
Cyclopentane	287-92-3	C ₅ H ₁₀	4.0	25
Decane, n-	124-18-5	C ₁₀ H ₂₂	1.0	96
Diacetone alcohol	123-42-2	C ₆ H ₁₂ O ₂	0.8	125
Dibenzoyl peroxide	94-36-0	C ₁₄ H ₁₀ O ₄	0.8	125
Diborane	19287-45-7	B ₂ H ₆	ZR	
Dibromochloromethane	124-48-1	CHBr ₂ Cl	10.0	10
Dibromodifluoromethane	75-61-6	CF ₂ Br ₂	ZR	
Dibromoethane 1,2-	106-93-4	C ₂ H ₄ Br ₂	2.0	50
Dibromotetrafluoroethane, 1,2-	124-73-2	C ₂ F ₄ Br ₂	ZR	
Dibutyl hydrogen phosphate	107-66-4	HC ₈ H ₁₈ PO ₄	4.0	25
Dichloro-1,1,1-trifluoroethane, 2,2-	306-83-2	C ₂ HCl ₂ F ₃	ZR	
Dichloro-1,1-difluoroethane, 1,2-	1649-08-7	C ₂ H ₂ Cl ₂ F ₂	ZR	
Dichloro-1,2,2-trifluoroethane, 1,2-	354-23-4	C ₂ HCl ₂ F ₃	ZR	
Dichloro-1,2-difluoroethane, 1,2-	631-06-1	C ₂ H ₂ Cl ₂ F ₂	ZR	

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Dichloro-1-fluoroethane, 1,1-	1717-00-6	C ₂ H ₃ Cl ₂ F	ZR	
Dichloro-1-fluoroethane, 1,1-	1717-00-6	C ₂ H ₃ Cl ₂ F	ZR	
Dichloro-1-fluoroethane, 1,2-	430-57-9	C ₂ H ₃ Cl ₂ F	ZR	
Dichloro-1-propene, 2,3-	78-88-6	C ₃ H ₄ Cl ₂	1.4	70
Dichloro-2,2,-difluoroethane, 1,1-	79-35-6	C ₂ H ₂ Cl ₂ F ₂	ZR	
Dichloroacetylene	7572-29-4	C ₂ Cl ₂	5.0	20
Dichlorobenzene o-	95-50-1	C ₆ H ₄ Cl ₂	0.5	200
Dichlorodifluoromethane	75-71-8	CCl ₂ F ₂	ZR	
Dichloroethane 1,2-	107-06-2	C ₂ H ₄ Cl ₂	ZR	
Dichloroethane, 1,1-	75-34-3	C ₂ H ₄ Cl ₂	ZR	
Dichloroethene, 1,1-	75-35-4	C ₂ H ₂ Cl ₂	1.0	105
Dichloroethene, cis-1,2-	156-59-2	C ₂ H ₂ Cl ₂	0.8	125
Dichloroethene, trans-1,2-	540-59-0	C ₂ H ₂ Cl ₂	0.7	143
Dichloroethylene 1,2-	540-59-0	C ₂ H ₂ Cl ₂	0.8	133
Dichlorofluoromethane	75-43-4	CHCl ₂	ZR	
Dichloromethane	75-09-2	CH ₂ Cl ₂	39	3
Dichloropropane, 1,2-	78-87-5	C ₃ H ₆ Cl ₂	ZR	
Dichlorotetrafluoroethane, 1,1-	374-07-2	C ₂ Cl ₂ F ₄	ZR	
Dichlorotetrafluoroethane, 1,2-	76-14-2	C ₂ Cl ₂ F ₄	ZR	
Dicyclopentadiene	77-73-6	C ₁₀ H ₁₂	0.9	110
Diesel Fuel	68334-30-5		0.8	130
Diethyl ether	60-29-7	C ₄ H ₁₀ O	0.9	110
Diethyl maleate	141-05-9	C ₈ H ₁₂ O ₄	2.0	50
Diethyl phthalate	84-66-2	C ₁₂ H ₁₄ O ₄	1.0	100
Diethyl sulphate	64-67-5	C ₄ H ₁₀ SO ₄	3.0	33
Diethyl sulphide	352-93-2	C ₄ H ₁₀ S	0.6	180
Diethylamine	109-89-7	C ₄ H ₁₁ N	1.0	100
Diethylaminoethanol, 2-	100-37-8	C ₆ H ₁₅ ON	2.7	40
Diethylaminopropylamine, 3-	104-78-9	C ₇ H ₁₈ N ₂	1.0	100
Difluoroethane, 1,1-	75-37-6	C ₂ H ₄ F ₂	ZR	
Difluoroethane, 1,2-	624-72-6	C ₂ H ₄ F ₂	ZR	
Difluoromethane	75-10-5	CH ₂ F ₂	ZR	
Dihydrogen selenide	7783 07 5	H ₂ Se	1.0	100
Dihydroxybenzene, 1,2	120-80-9	C ₆ H ₆ O ₂	1.0	100
Dihydroxybenzene, 1,3	108-46-3	C ₆ H ₆ O ₂	1.0	100
Diisobutylene	107-39-1	C ₈ H ₁₆	0.6	156
Diisopropyl ether	108-20-3	C ₆ H ₁₄ O	0.7	150
Diisopropylamine	108-18-9	C ₆ H ₁₅ N	0.7	140
Diketene	674-82-8	C ₄ H ₄ O ₂	2.2	45
Dimethoxymethane	109-87-5	C ₃ H ₈ O ₂	1.4	71
Dimethyl cyclohexane, 1,2-	583-57-3	C ₈ H ₁₆	1.1	95
Dimethyl disulphide	624-92-0	C ₂ H ₆ S ₂	0.2	435
Dimethyl ether	115-10-6	C ₂ H ₆ O	1.3	80
Dimethyl phthalate	131-11-3	C ₁₀ H ₁₀ O ₄	1.0	100
Dimethyl sulphate	77-78-1	C ₂ H ₆ O ₄ S	ZR	
Dimethyl sulphide	75-18-3	C ₂ H ₆ S	0.5	200
Dimethylacetamide N,N-	127-19-5	C ₄ H ₉ NO	1.3	75
Dimethylamine	124-40-3	C ₂ H ₇ N	1.4	70
Dimethylaminoethanol	108-01-0	C ₄ H ₁₁ NO	1.5	70
Dimethylaniline, NN-	121-69-7	C ₈ H ₁₁ N	0.6	167
Dimethylbutyl acetate	108-84-9	C ₈ H ₁₆ O ₂	1.6	60
Dimethylethylamine, NN-	598-56-1	C ₄ H ₁₁ N	0.8	125
Dimethylformamide	68-12-2	C ₃ H ₇ NO	0.9	110
Dimethylheptan-4-one, 2,6-	108-83-8	C ₉ H ₁₈ O	0.8	125
Dimethylhydrazine, 1,1-	57-14-7	C ₂ H ₈ N ₂	1.0	100
Dinitrobenzene, m-	99-65-0	C ₆ H ₄ N ₂ O ₄	3.0	33
Dinitrobenzene, o-	528-29-0	C ₆ H ₄ N ₂ O ₄	ZR	
Dinitrobenzene, p-	100-25-4	C ₆ H ₄ N ₂ O ₄	5.0	20

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Dinonyl phthalate	84-76-4	C ₂₆ H ₄₂ O ₄	1.0	100
Dioxane 1,2-		C ₄ H ₈ O ₂	1.5	67
Dioxane 1,4-	123-91-1	C ₄ H ₈ O ₂	1.5	67
Dipentene	138-86-3	C ₁₀ H ₁₆	0.9	110
Diphenyl ether	101-84-8	C ₁₂ H ₁₀ O	0.8	125
Disulphur decafluoride	5714-22-7	S ₂ F ₁₀	ZR	
Disulphur dichloride	10025-67-9	S ₂ Cl ₂	3.0	33
Di-tert-butyl-p-cresol	2409-55-4	C ₁₁ H ₁₆ O	1.0	100
Divinylbenzene	1321-74-0	C ₁₀ H ₁₀	0.4	250
Dodecanol	112-53-8	C ₁₂ H ₂₆ O	0.9	110
Enflurane	13838-16-9	C ₄ H ₂ F ₅ ClO	ZR	
Epichlorohydrin	106-89-8	C ₃ H ₅ ClO	8.0	15
Epoxypropyl isopropyl ether, 2,3-	4016-14-2	C ₆ H ₁₂ O ₂	1.1	90
Ethane	74-84-0	C ₂ H ₆	ZR	
Ethanol	64-17-5	C ₂ H ₆ O	8.7	10
Ethanolamine	141-43-5	C ₂ H ₇ NO	3.0	33
Ethoxy-2-propanol, 1-	1569-02-4	C ₅ H ₁₀ O ₂	2.0	50
Ethoxyethanol, 2-	110-80-5	C ₄ H ₁₀ O ₂	29.8	3
Ethoxyethyl acetate, 2-	111-15-9	C ₆ H ₁₂ O ₃	3.0	33
Ethyl (S)-(-)-lactate	97-64-3	C ₅ H ₁₀ O ₃	3.0	33
Ethyl acetate	141-78-6	C ₄ H ₈ O ₂	3.6	28
Ethyl acrylate	140-88-5	C ₅ H ₈ O ₂	2.0	50
Ethyl amine	75-04-7	C ₂ H ₇ N	1.0	100
Ethyl benzene	100-41-4	C ₈ H ₁₀	0.5	185
Ethyl butyrate	105-54-4	C ₆ H ₁₂ O ₂	1.0	105
Ethyl chloroformate	541-41-3	C ₃ H ₅ O ₂ Cl	80	1
Ethyl cyanoacrylate	7085-85-0	C ₆ H ₇ O ₂ N	1.5	67
Ethyl decanoate	110-38-3	C ₁₂ H ₂₄ O ₂	1.8	56
Ethyl formate	109-94-4	C ₃ H ₆ O ₂	30	3
Ethyl hexanoate	123-66-0	C ₈ H ₁₆ O ₂	2.6	38
Ethyl hexanol, 2-	105-76-7	C ₈ H ₁₈ O	1.5	67
Ethyl hexyl acrylate, 2-	103-11-7	C ₁₁ H ₂₀ O ₂	1.0	100
Ethyl mercaptan	75-08-1	C ₂ H ₆ S	0.7	145
Ethyl octanoate	106-32-1	C ₁₀ H ₂₀ O ₂	2.3	40
Ethylene	74-85-1	C ₂ H ₄	8.0	13
Ethylene dinitrate	628-96-6	C ₂ H ₄ O ₆ N ₂	ZR	
Ethylene glycol	107-21-1	C ₂ H ₆ O ₂	20.0	5
Ethylene oxide	75-21-8	C ₂ H ₄ O	15.0	7
Ferrocene	102-54-5	C ₁₀ H ₁₀ Fe	0.8	125
Fluorine	7782-41-4	F ₂	ZR	
Fluoroethane	353-33-6	C ₂ H ₅ F	ZR	
Fluoromethane	593-53-3	CH ₃ F	ZR	
Formaldehyde	50-00-0	CH ₂ O	ZR	
Formamide	75-12-7	CH ₃ ON	2.0	50
Formic acid	64-18-6	CH ₂ O ₂	ZR	
Furfural	98-01-1	C ₅ H ₄ O ₂	1.4	70
Furfuryl alcohol	98-00-0	C ₅ H ₆ O ₂	2.0	50
Gasoline vapors	8006-61-9		1.1	95
Gasoline vapors	8006-61-9		0.8	125
Gasoline vapors 92 octane	8006-61-9		0.8	125
Germane	7782-65-2	GeH ₄	10.0	10
Glutaraldehyde	111-30-8	C ₅ H ₈ O ₂	0.9	111
Halothane	151-67-7	CF ₃ CHBrCl	ZR	
Helium		He	ZR	
Heptan-2-one	110-43-0	C ₇ H ₁₄ O	0.7	140
Heptan-3-one	106-35-4	C ₇ H ₁₄ O	0.8	133
Heptane n-	142-82-5	C ₇ H ₁₆	2.1	50
Hexachloroethane	67-72-1	C ₂ Cl ₆	ZR	

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Hexafluoroethane	76-16-4	C ₂ F ₆	ZR	
Hexamethyldisilazane, 1,1,1,3,3,3-	999-97-3	C ₆ H ₁₉ NSi ₂	1.0	100
Hexamethyldisiloxane.	107-46-0	C ₆ H ₁₈ OSi ₂	0.3	350
Hexan-2-one	591-78-6	C ₆ H ₁₂ O	0.8	125
Hexane n-	110-54-3	C ₆ H ₁₄	4.2	25
Hexene, 1-	592-41-6	C ₆ H ₁₂	0.9	110
Hydrazine	302-01-2	H ₄ N ₂	3.0	33
Hydrazoic acid	7782-79-8	HN ₃	ZR	
Hydrogen	1333-74-0	H ₂	ZR	
Hydrogen bromide	10035-10-6	HBr	ZR	
Hydrogen chloride	7647-01-0	HCl	ZR	
Hydrogen cyanide	74-90-8	HCN	ZR	
Hydrogen fluoride	7664-39-3	HF	ZR	
Hydrogen peroxide	7722-84-1	H ₂ O ₂	4.0	25
Hydrogen sulfide	7783-06-4	H ₂ S	4.0	25
Hydroquinone	123-31-9	C ₆ H ₆ O ₂	0.8	125
Hydroxypropyl acrylate 2-	999-61-1	C ₆ H ₁₀ O ₃	1.5	67
Iminodi(ethylamine) 2,2-	111-40-0	C ₄ H ₁₃ N ₃	0.9	110
Iminodiethanol 2,2'-	111-42-2	C ₄ H ₁₁ NO ₂	1.6	60
Indene	95-13-6	C ₉ H ₈	0.5	220
Iodine	7553-56-2	I ₂	0.2	667
Iodoform	75-47-8	CHI ₃	1.5	67
Iodomethane	74-88-4	CH ₃ I	0.4	250
Isoamyl acetate	123-92-2	C ₇ H ₁₄ O ₂	1.6	60
Isobutane	75-28-5	C ₄ H ₁₀	8.0	15
Isobutanol	78-83-1	C ₄ H ₁₀ O	3.5	30
Isobutyl acetate	110-19-0	C ₆ H ₁₂ O ₂	2.3	45
Isobutyl acrylate	106-63-8	C ₇ H ₁₂ O ₂	1.3	80
Isobutylene	115-11-7	C ₄ H ₈	1.0	100
Isobutyraldehyde	78-84-2	C ₄ H ₈ O	1.2	80
Isocyanates, all			NV	
Isodecanol	25339-17-7	C ₁₀ H ₂₂ O	0.9	110
Isoflurane	26675-46-7	C ₃ H ₂ ClF ₅ O	ZR	
Isononanol	2452-97-9	C ₉ H ₂₀ O	1.5	67
Isooctane	565-75-3	C ₈ H ₁₈	1.1	90
Isooctanol	26952-21-6	C ₈ H ₁₈ O	1.7	60
Isopentane	78-78-4	C ₅ H ₁₂	6.0	20
Isophorone	78-59-1	C ₉ H ₁₄ O	0.8	133
Isoprene	78-79-5	C ₅ H ₈	0.7	140
Isopropanol	67-63-0	C ₃ H ₈ O	4.4	20
Isopropyl acetate	108-21-4	C ₅ H ₁₀ O ₂	2.2	50
Isopropyl chloroformate	108-23-6	C ₄ H ₇ O ₂ Cl	1.6	60
Jet Fuel JP-4			0.8	133
Jet Fuel JP-5			0.7	150
Jet Fuel JP-8			0.7	150
Kerosene	8008-20-6		0.8	120
Ketene	463-51-4	C ₂ H ₂ O	3.0	33
Liquefied petroleum gas	68476-85-7		ZR	
Maleic anhydride	108-31-6	C ₄ H ₂ O ₃	2.0	50
Mercaptoacetic acid	68-11-1	C ₂ H ₄ O ₂ S	1.0	100
Mercury	7439-97-6	Hg	NV	
Mercury alkyls			NV	
Mesitylene	108-67-8	C ₉ H ₁₂	0.3	300
Methacrylic acid	79-41-4	C ₄ H ₆ O ₂	2.3	40
Methacrylonitrile	126-98-7	C ₄ H ₅ N	5.0	20
Methane	74-82-8	CH ₄	ZR	
Methanol	67-56-1	CH ₄ O	200	1
Methoxyethanol, 2-	109-86-4	C ₃ H ₈ O ₂	2.7	40

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Methoxyethoxyethanol, 2-	111-77-3	C ₅ H ₁₂ O ₃	1.4	70
Methoxymethylethoxy-2-propanol	34590-94-8	C ₇ H ₁₆ O ₃	1.3	80
Methoxypropan-2-ol	107-98-2	C ₄ H ₁₀ O ₂	3.0	33
Methoxypropyl acetate	108-65-6	C ₆ H ₁₂ O ₃	1.2	80
Methyl acetate	79-20-9	C ₃ H ₆ O ₂	5.2	20
Methyl acrylate	96-33-3	C ₄ H ₆ O ₂	3.4	30
Methyl bromide	74-83-9	CH ₃ Br	1.9	50
Methyl cyanoacrylate	137-05-3	C ₅ H ₅ O ₂ N	5.0	20
Methyl ethyl ketone	78-93-3	C ₄ H ₈ O	0.8	130
Methyl ethyl ketone peroxides	1338-23-4	C ₈ H ₁₈ O ₂	0.8	125
Methyl formate	107-31-3	C ₂ H ₄ O ₂	ZR	
Methyl isobutyl ketone	108-10-1	C ₆ H ₁₂ O	0.8	125
Methyl isocyanate	624-83-9	C ₂ H ₃ NO	ZR	
Methyl isothiocyanate	556-61-6	C ₂ H ₃ NS	0.6	167
Methyl mercaptan	74-93-1	CH ₄ S	0.7	140
Methyl methacrylate	80-62-6	C ₅ H ₈ O ₂	1.6	60
Methyl propyl ketone	107-87-9	C ₅ H ₁₀ O	0.8	130
Methyl salicylate	119-36-8	C ₈ H ₈ O ₃	1.2	80
Methyl sulphide	75-18-3	C ₂ H ₆ S	0.5	200
Methyl t-butyl ether	1634-04-4	C ₅ H ₁₂ O	0.8	125
Methyl-2-propen-1-ol, 2-	51-42-8	C ₄ H ₈ O	1.1	90
Methyl-2-pyrrolidinone, N-	872-50-4	C ₅ H ₉ NO	0.9	110
Methyl-4,6-dinitrophenol, 2-	534-52-1	C ₇ H ₆ N ₂ O ₅	3.0	33
Methyl-5-hepten-2-one, 6-	110-93-0	C ₈ H ₁₄ O	0.8	125
Methylamine	74-89-5	CH ₅ N	1.4	70
Methylbutan-1-ol, 3-	123-51-3	C ₅ H ₁₂ O	3.4	30
Methylcyclohexane	108-87-2	C ₇ H ₁₄	1.1	90
Methylcyclohexanol, 4-	589-91-3	C ₇ H ₁₄ O	2.4	40
Methylcyclohexanone 2-	583-60-8	C ₇ H ₁₂ O	1.0	100
Methylheptan-3-one, 5-	541-85-5	C ₈ H ₁₆ O	0.8	133
Methylhexan-2-one, 5-	110-12-3	C ₇ H ₁₄ O	0.8	133
Methylhydrazine	60-34-4	CH ₆ N ₂	1.3	80
Methyl-N,2,4, 6-tetranitroaniline, N-	479-45-8	C ₇ H ₅ N ₅ O ₈	3.0	33
Methylpent-3-en-2-one, 4-	141-79-7	C ₆ H ₁₀ O	0.7	140
Methylpentan-2-ol, 4-	108-11-2	C ₆ H ₁₄ O	2.8	40
Methylpentane-2,4-diol, 2-	107-41-5	C ₆ H ₁₄ O ₂	4.0	25
Methylpropan-2-ol, 2-	75-65-0	C ₄ H ₁₀ O	3.5	30
Methylstyrene	25013-15-4	C ₉ H ₁₀	0.5	200
Mineral oil	8042-47-5		0.8	125
Mineral spirits	64475-85-0		0.8	125
Naphthalene	91-20-3	C ₁₀ H ₈	0.4	230
Nitric oxide	10102-43-9	NO	8.0	15
Nitroaniline 4-	100-01-6	C ₆ H ₆ N ₂ O ₂	0.8	125
Nitrobenzene	98-95-3	C ₆ H ₅ NO ₂	1.7	60
Nitroethane	79-24-3	C ₂ H ₅ NO ₂	ZR	
Nitrogen dioxide	10102-44-0	NO ₂	10.0	10
Nitrogen trichloride	10025-85-1	NCl ₃	1.0	100
Nitrogen trifluoride	7783-54-2	NF ₃	ZR	
Nitromethane	75-52-5	CH ₃ NO ₂	ZR	
Nitropropane, 1-	108-03-2	C ₃ H ₇ NO ₂	ZR	
Nitropropane, 2-	79-46-9	C ₃ H ₇ NO ₂	ZR	
Nitrous oxide	10024-97-2	N ₂ O	ZR	
Nonane, n-	111-84-2	C ₉ H ₂₀	1.3	80
Norbornadiene, 2,5-	121-46-0	C ₇ H ₈	0.6	167
Octachloronaphthalene	2234-13-1	C ₁₀ Cl ₈	1.0	100
Octane, n-	111-65-9	C ₈ H ₁₈	1.6	60
Octene, 1-	111-66-0	C ₈ H ₁₆	0.7	140
Oxalic acid	144-62-7	C ₂ H ₂ O ₄	ZR	

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Oxalonnitrile	460-19-5	C ₂ N ₂	ZR	
Oxydiethanol 2,2-	111-46-6	C ₄ H ₁₀ O ₃	4.0	25
Oxygen		O ₂	ZR	
Ozone	10028-15-6	O ₃	ZR	
Paraffin wax, fume	8002-74-2		1.0	100
Paraffins, normal	64771-72-8		1.0	105
Pentacarbonyl iron	13463-40-6	FeC ₅ O ₅	1.0	100
Pentachloroethane	76-01-7	C ₂ HCl ₅	ZR	
Pentachlorofluoroethane	354-56-3	C ₂ Cl ₅ F	ZR	
Pentafluoroethane	354-33-6	C ₂ HF ₅	ZR	
Pentan-2-one	107-87-9	C ₅ H ₁₀ O	0.8	125
Pentan-3-one	96-22-0	C ₅ H ₁₀ O	0.8	125
Pentandione, 2,4-	123-54-6	C ₅ H ₈ O ₂	0.8	133
Pentane, n-	109-66-0	C ₅ H ₁₂	7.9	15
Peracetic acid	79-21-0	C ₂ H ₄ O ₃	2.0	50
Perchloryl fluoride	7616-94-6	ClO ₃ F	ZR	
Perfluoropropane	76-19-7	C ₃ F ₈	ZR	
Petroleum ether			0.9	110
Phenol	108-95-2	C ₆ H ₆ O	1.2	85
Phenyl propene, 2-	98-83-9	C ₉ H ₁₀	0.4	230
Phenyl-2,3-epoxypropyl ether	122-60-1	C ₉ H ₁₀ O ₂	0.8	125
Phenylenediamine, p-	106-50-3	C ₆ H ₈ N ₂	0.6	167
Phosgene	75-44-5	COCl ₂	ZR	
Phosphine	7803-51-2	PH ₃	2.0	50
Picoline, 3-	108-99-6	C ₆ H ₇ N	0.9	110
Pinene, alpha	80-56-8	C ₁₀ H ₁₆	0.3	315
Pinene, beta	127-91-3	C ₁₀ H ₁₆	0.3	315
Piperidine	110-89-4	C ₅ H ₁₁ N	0.9	110
Piperylene	504-60-9	C ₅ H ₈	0.7	150
Prop-2-yn-1-ol	107-19-7	C ₃ H ₄ O	1.3	80
Propan-1-ol	71-23-8	C ₃ H ₈ O	4.8	20
Propane	74-98-6	C ₃ H ₈	ZR	
Propane-1,2-diol, total	57-55-6	C ₃ H ₈ O ₂	10.0	10
Propene	115-07-1	C ₃ H ₆	1.4	70
Propionaldehyde	123-38-6	C ₃ H ₆ O	1.7	60
Propionic acid	79-09-4	C ₃ H ₆ O ₂	8.0	15
Propyl acetate, n-	109-60-4	C ₅ H ₁₀ O ₂	2.5	40
Propylene dinitrate	6423-43-4	C ₃ H ₆ N ₂ O ₆	ZR	
Propylene oxide	75-56-9	C ₃ H ₆ O	7.0	15
Propyleneimine	75-55-8	C ₃ H ₇ N	1.3	80
Pyridine	110-86-1	C ₅ H ₅ N	0.8	133
Pyridylamine 2-	504-29-0	C ₅ H ₆ N ₂	0.8	125
Silane	7803-62-5	SiH ₄	ZR	
Sodium fluoroacetate	62-74-8	C ₂ H ₂ O ₂ FNa	ZR	
Styrene	100-42-5	C ₈ H ₈	0.4	230
Sulphur dioxide	7446-09-5	SO ₂	ZR	
Sulphur hexafluoride	2551-62-4	SF ₆	ZR	
Sulphur tetrafluoride	7783-60-0	SF ₄	ZR	
Sulphuric acid	7664-93-9	H ₂ SO ₄	ZR	
Sulphuryl fluoride	2699-79-8	SO ₂ F ₂	ZR	
Terphenyls		C ₁₈ H ₁₄	0.6	167
Terpinolene	586-62-9	C ₁₀ H ₁₆	0.5	210
Tert-butanol	75-65-0	C ₄ H ₁₀ O	2.6	40
Tetrabromoethane, 1,1,2,2-	79-27-6	C ₂ H ₂ Br ₄	2.0	50
Tetracarbonylnickel	13463-39-3	NiC ₄ O ₄	1.0	100
Tetrachloro-1,2-difluoroethane, 1,1,2,2-	76-12-0	C ₂ Cl ₄ F ₂	ZR	
Tetrachloro-1-fluoroethane, 1,1,2,2-	354-14-3	C ₂ HCl ₄ F	ZR	
Tetrachloro-2,2-difluoroethane, 1,1,1,2-	76-11-9	C ₂ Cl ₄ F ₂	ZR	

Gas/ VOC	CAS No.	Formula	Relative response	Relative sensitivity (%)
Tetrachloro-2-fluoroethane, 1,1,1,2-	354-11-0	C ₂ HCl ₄ F	ZR	
Tetrachloroethane, 1,1,1,2-	630-20-6	C ₂ H ₂ Cl ₄	ZR	
Tetrachloroethane, 1,1,2,2-	79-34-5	C ₂ H ₂ Cl ₄	ZR	
Tetrachloroethylene	127-18-4	C ₂ Cl ₄	0.7	140
Tetrachloronaphthalenes, all isomers	20020-02-4	C ₁₀ H ₄ Cl ₄	1.0	100
Tetraethyl orthosilicate	78-10-4	C ₈ H ₂₀ O ₄ Si	2.0	50
Tetraethyllead	78-00-2	C ₈ H ₂₀ Pb	ZR	
Tetrafluoroethane, 1,1,1,2-	811-97-2	C ₂ H ₂ F ₄	ZR	
Tetrafluoroethane, 1,1,2,2-	359-35-3	C ₂ H ₂ F ₄	ZR	
Tetrafluoroethylene	116-14-3	C ₂ F ₄	1.0	100
Tetrafluoromethane	75-73-0	CF ₄	ZR	
Tetrahydrofuran	109-99-9	C ₄ H ₈ O	1.6	65
Tetramethyl orthosilicate	681-84-5	C ₄ H ₁₂ O ₄ Si	ZR	
Tetramethyl succinonitrile	3333-52-6	C ₈ H ₁₂ N ₂	1.0	100
Therminol			1.0	100
Thionyl chloride	7719-09-7	SOCl ₂	ZR	
Toluene	108-88-3	C ₇ H ₈	0.5	200
Toluene-2,4-diisocyanate	584-84-9	C ₉ H ₆ N ₂ O ₂	1.6	60
Toluenesulphonyl chloride, p-	98-59-9	C ₇ H ₇ SO ₂ Cl	3.0	33
Toluidine, o-	95-53-4	C ₇ H ₉ N	0.5	200
Tributyl phosphate	126-73-8	C ₁₂ H ₂₇ O ₄ P	5.0	20
Tributylamine	102-82-9	C ₁₂ H ₂₇ N	1.0	100
Trichloro-1,1-difluoroethane, 1,2,2-	354-21-2	C ₂ HCl ₃ F ₂	ZR	
Trichloro-1,2-difluoroethane, 1,1,2-	354-15-4	C ₂ HCl ₃ F ₂	ZR	
Trichloro-2,2-difluoroethane, 1,1,1-	354-12-1	C ₂ HCl ₃ F ₂	ZR	
Trichloro-2-fluoroethane, 1,1,2-	359-28-4	C ₂ H ₂ Cl ₃ F	ZR	
Trichlorobenzene 1,2,4-	120-82-1	C ₆ H ₃ Cl ₃	0.6	180
Trichloroethane, 1,1,1-	71-55-6	C ₂ H ₃ Cl ₃	ZR	
Trichloroethane, 1,1,2-	79-00-5	C ₂ H ₃ Cl ₃	ZR	
Trichloroethylene	79-01-6	C ₂ HCl ₃	0.7	150
Trichlorofluoromethane	75-69-4	CCl ₃ F	ZR	
Trichloronitromethane	76-06-2	CCl ₃ NO ₂	ZR	
Trichlorophenoxyacetic acid, 2,4,5-	93-76-5	C ₈ H ₅ O ₃ Cl ₃	1.0	100
Trichloropropane 1,2,3-	96-18-4	C ₃ H ₅ Cl ₃	ZR	
Trichlorotrifluoroethane, 1,1,1-	354-58-5	C ₂ Cl ₃ F ₃	ZR	
Trichlorotrifluoroethane, 1,1,2-	76-13-1	C ₂ Cl ₃ F ₃	ZR	
Triethylamine	121-44-8	C ₆ H ₁₅ N	0.9	110
Trifluoroethane, 1,1,1-	420-46-2	C ₂ H ₃ F ₃	ZR	
Trifluoroethane, 1,1,2-	430-66-0	C ₂ H ₃ F ₃	ZR	
Trifluoroethanol, 2,2,2-	75-89-8	C ₂ H ₃ F ₃ O	ZR	
Trifluoromethane	75-46-7	CHF ₃	ZR	
Trimethylamine	53-50-3	C ₃ H ₉ N	0.5	200
Trimethylbenzene mixtures		C ₉ H ₁₂	0.3	300
Trimethylbenzene, 1,3,5-	108-67-8	C ₉ H ₁₂	0.3	300
Trinitrotoluene 2,4,6-	118-96-7	C ₇ H ₅ N ₃ O ₆	ZR	
Turpentine	8006-64-2	C ₁₀ H ₁₆	0.6	167
TVOC			1.0	100
Undecane, n-	1120-21-4	C ₁₁ H ₂₄	0.9	110
Vinyl acetate	108-05-2	C ₄ H ₆ O ₂	1.1	90
Vinyl bromide	593-60-2	C ₂ H ₃ Br	1.0	100
Vinyl chloride	75-01-4	C ₂ H ₃ Cl	2.1	50
Vinyl-2-pyrrolidinone, 1-	88-12-0	C ₆ H ₉ NO	0.9	110
Xylene mixed isomers	1330-20-7	C ₈ H ₁₀	0.4	230
Xylene, m-	108-38-3	C ₈ H ₁₀	0.4	230
Xylene, o-	95-47-6	C ₈ H ₁₀	0.6	167
Xylene, p-	106-42-3	C ₈ H ₁₀	0.6	180
Xylidine, all	1300-73-8	C ₈ H ₁₁ N	0.7	140