Technical Information Bulletin

Chemical Name		Formula	Mol. Weight	OSHA TWA (PPM)	Odor Threshold (PPM)*	Odor Characteristics	Generally Recommended Control Media**
Acetaldehyde	L	CH3CHO	44.05	200	0.031 - 23	penetrating fruity	Aluminium
Acetic acid	L	CH3COOH	60.05	10	0.2 - 24	strong vinegar-like	Carbon/Aluminium
Acetone	L	CH3COCH3	58.08	1000	100	characteristic odor	Carbon/Aluminium
Acetylene	G	HCCH	26.02	--	--	not unpleasant when pure but disagreeable when impure	Aluminium
Acrolein	L	CH2CHCHO	56.06	0.1	0.2 - 15	piercing, disagreeable, causes tears	Carbon/Aluminium
Acrylonitrile	L	CH2CHCN	53.06	2s	21.4	mild	Carbon/Aluminium
Ammonia	G	NH3	17.03	50	1 - 46.8	penetrating, pungent, suffocating	Puracarb AM
Arsine	G	AsH3	77.93	0.05	--	disagreeable garlic	Aluminium***
Benzene	L	C6H6	78.11	10	4.68	characteristic	Carbon
1.3-Butadiene	G	CH2CHCHCH2	54.09	1000	0.16	mild aromatic	Carbon/Aluminium
Butane	G	C4H10	58.12	--	odorless	odorless	Carbon
Butyric acid	L	CH3CH2CH2COOH	88.1	--	0.001	unpleasant, rancid	Carbon/Aluminium
Carbon dioxide	G	CO2	44.01	5000	odorless	odorless	soda lime
Carbon disulfide	L	CS2	76.14	20	0.0011 - 7.7	strong, disagreeable or sweetish	Carbon/Aluminium
Carbon monoxide	G	CO	28.01	50	odorless	odorless	Hopcalite
Carbon tetrachloride	L	CCI4	153.84	10	21.4 - 100.0	ether-like	Carbon
Chlorine	G	CI2	70.91	1	0.01- 0.314	suffocating, irritating	Carbon / Puracarb / Chlorosorb
Chlorine dioxide	G	CI02	67.46	0.1	0.1	unpleasant, similar to that of chlorine & reminiscent of nitric acid	Carbon / Puracarb / Chlorosorb
Chloroform	L	CHCI3	119.39	50c	50 -300	pleasant, sweet	Carbon
Chloropicrin	L		164.39	0.1	1.1	sharp, penetrating, causes tears	Carbon
Cresol	L		108.13	5s	--	phenolic	Carbon/Aluminium
Cyclohexane	L	C6H12	84.16	300	0.41	mild, sweet, resembling chloroform or benzene	Carbon
Cyclohexanone	L	C6H10O	98.14	50	--	reminiscent of peppermint and acetone	Carbon/Aluminium
1.1 Dichloroethane	L		98.96	100	100	chloroform-like	Carbon
Diethylamine	L	(C2H9)2NH	73.14	25	0.14	fishy, ammonia-like	Carbon/Aluminium
Dimethylamine	G	(CH3)2NH	45.08	10	0.021 -23	pungent, fishy or ammonia-like	Carbon/Aluminium
Ethane	G	C2H6	30.07	--	odorless	odorless	not controlled by adsorption
Ethanol	L		46.07		10	pleasant	Carbon/Aluminium
Ethyl acetate	L	CH3COOC2H5	88.1	400	0.0056 - 50	pleasant, fruity	Carbon/Aluminium
Ethyl acrylate	L	CH2CHCOOC2H5	100.11	25s	0.00047 - 8	sharp, acrid	Carbon/Aluminium
Ethylamine	L		45.08	10	--	ammonia-like	Carbon/Aluminium
Ethylene	G	CH2CH2	28.05	--	--	sweet	Aluminium
Ethylene oxide	G	CH2CH2O	44.05	50	--		Carbon
Formaldehyde	G	HCHO	30.03	3	1.0	pungent, suffocating	Aluminium
Formic acid	L	HCOON	46.02	5	2.1	pungent, penetrating	Carbon/Aluminium
Freon 1.1	G		137.38	--	--	faint ether-like	Carbon
Hydrazine	L	H2NNH2	32.05	1s	--	penetrating, resembling that of ammonia	Aluminium
Hydrogen chloride	G	HCI	36.47	5c	1 - 10.0	irritating, pungent	Aluminium/Carbon
Hydrogen cyanide	G	HCN	27.03	10	1	bitter almond-like	Aluminium
Hydrogen sulfide	G		34.08	20	0.00047 - 4.6	strong, like rotten eggs	Aluminium and/or Carbon
Indole	S		117.14	--	--	intense, fecal	Carbon
Isoprene	L		68.11	--	--	--	Carbon/Aluminium
Isopropanol	L	CH3CHOHCH3	60.09	400	45 - 200	like rubbing alcohol	Carbon/Aluminium
Methane	G	CH4	16.04		odorless	odorless	not controlled by adsorption
Methanol	L	CH3OH	32.04	200	100 - 5900	slight alcoholic odor when pure	Carbon/Aluminium
Methyl acrylate	L		86.09	10s	20	sharp, sweet, fruity	Carbon/Aluminium
Methyl chloride	G	CH3CI	50.49	100	0-10 or greater	faint sweet odor; not noticeable at dangerous concentration	Carbon
Methyl chloroform	L	CH3CCI3	133.42	350	20 -400	mild, like chloroform	Carbon
Methyl disulfide	L	CH3SSCH3	94.19	--	--	disagreeable	Carbon/Aluminium
Methyl ethylketone	L	CH3COCH2CH3	72.1	200	10	acetone-like	Carbon/Aluminium
Methyl mercaptan	G	CH3SH	48.11	100	0.0021	like rotten cabbage	Carbon/Aluminium
Methyl sulfide	L		62.13		0.0037	disagreeable	Carbon/Aluminium
Methyl vinylketone	L	CH3COCHCH2	70.09	--	--	pungent	Carbon/Aluminium
Methylamine	G	CH3NH2	31.06	10	0.021 - 3.3	strong ammoniacal odor, but more fishy, particularly at lower concentrations	Carbon/Aluminium
Methylene chloride	L	CH2CI2	84.94	500	25 - 320	like chloroform	Carbon
Nitric oxide	G	NO	30.01	25	0.3 -1	sharp, sweet	Aluminium
Nitrobenzene	L	C6H5NO2	123.11	1s	0.0047-1.9	like black paste shoe polish	Carbon
Nitrogen dioxide	G	NO2	46.01	5	5	pungent, acrid	Aluminium
Nitroglycerine	L	C3H5N3O9	227.09	0.2s	--	--	Carbon+Aluminium***
Nitrous oxide	G	N2O	44.02		--	slightly sweetish, laughing gas	not controlled by adsorption
Ozone	G	O3	48	0.1	0.1	pleasant, characteristic in concentrations less than 2 ppm	Carbon/Aluminium
Phenol	S	C6H5OH	94.11	5s	0.047 - 5	characteristic, sweet tarry	Carbon/Aluminium
Phosgene	G	COC I2	98.92	0.1	0.125 - 1.0	sweet, like hay at low concentrations, but sharp and pungent at high concentrations	Carbon
Phosphine	G	PH3	34	0.3	0.02 - 3.0	fishy	Aluminium***
Propane	G	CH3CH2CH3	44.09	1000	odorless	odorless	not controlled by adsorption
Pyridine	L	C3H3N	79.1	5	0.012 - 0.23	penetrating, sickening	Carbon
Silane	G	SIH4	32.09	--	--	repulsive	Aluminium
Skatole	S	C9H9N	131.17	--	--	fecal	Carbon/Aluminium
Styrene	L	C6H5CHCH2	104.14	100	0.047 - 0.1	sweet aromatic at low concentrations but sharp penetrating,and disagreeable at high concentrations	Carbon/Aluminium
Sulfur dixide	G	SO2	64.07	5	0.47 - 5	strong, suffocating	Aluminium and/or Carbon
Sulfuric acid	L		98.08	--	odorless	odorless	Carbon
Sulfur trioxide	G	SO3	80.07	--	--		Carbon/Aluminium
Toluene	L	C6H9CH3	92.13	200	2.14 -15	benzene-like	Carbon
Trichloroethylene	L	CCI2CHCI	131.4	100	21.4	characteristic odor resembling chloroform	Carbon/Aluminium
Triethylamine	L		101.19	25	--	strong, ammonia-like, fishy	Carbon/Aluminium
Trimethylamine	G	(CH3)3N	59.11	--	--	pungent, fishy, ammonia-like odor	Carbon/Aluminium
Vinyl chloride	G	CH2CHCI	62.5	1	--	ether-like odor	Carbon/Aluminium
Xylene	L	C6H4(CH3)2	106.16	100	0.47 - 200	aromatic odor	Carbon

Chemical Name		Formula	Mol. Weight	OSHA TWA (PPM)	Odor Threshold (PPM)*	Odor Characteristics	Generally Recommended Control Media**

Key:
Physical State:
G: Gas
L: Liquid
S: Solid

OSHA: Occupational Safety & Health Administration
TWA : Time Weighted Average (for 8 hr. day)
(PPM): Parts Per Million

s: skin
c: ceiling

* Odor threshold is defined as the lowest concentration of a molecular species that can be reliably detected by a panel of untrained observers. Variations of one to four orders of magnitude have been reported by different investigators for many chemicals. This is due to differences in test methods such as temperature and humidity control and reporting methods. The range of values reported here represent the extremes we have found in an extensive literature search.

** This list of gases has a corresponding media or combination of media to be used for gaseous contaminant control. The selection of media is based upon light concentrations, i. e. generally 10 PPM or less. When dealing with higher ambient concentrations than 10 PPM or when available space precludes dual media design, please contact the factory for design assistance and media selection.

The life expectancy of any purification system is dependent on the concentration of the contaminants to which the system is exposed. Obviously, the consumption rate or life of the media will be shorter as the concentration of the gaseous contaminant increases. Also, be aware that in most real world cases, there is no airstream with just one contaminant, but it almost always is accompanied by other gases. This must be taken into consideration when selecting and designing the media and system for control.

*** no laboratory test work