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Chemical Filtration Table

The table below indicates the filter recommended for use with a wide range of chemicals commonly found in laboratory and manufacturing environments. For each chemical, it also provides an estimate of filter capacity.

Unless otherwise specified, filter efficiency with the chemical indicated approaches 100%. An asterisk (*) indicates poor adsorption by any filter; use of the specified filter is not recommended with these chemicals except where they occur in low concentrations, and frequent exhaust testing is advised.

Filter capacity is given as the equilibrium saturation capacity, a standard test procedure for activated carbon (ASTM-D3467). The capacity is expressed as the final filter weight at saturation as a percentage of initial filter weight. The actual capacity obtained will depend on the conditions of use (concentration of contaminant feed, temperature, humidity, etc.).

Note: All data below represent typical, not guaranteed, test results. Terra recommends thorough testing of filter performance in each application prior to exhaust release, and assumes no responsibility for damage or injury that may result as a consequence of improper filter selection or use.

Chemical	Filter	Satur. Cap. (%)
Acids		
Acetic	AC	33
Acetic anhydride	AC	33
Acrylic	AC	40
Butyric	AC	40
Caprylic	AC	40
Carbolic	AC	40
Formic	AC/I	20
Lactic	AC	40
Osmium tetroxide	AC	40
Palmitic	AC	40
Phenol	AC	40
Proprionic	AC	40
Valeric	AC	40
Alcohols	x	x
Amyl	AC	40
Butyl	AC	40
Cyclohexanol	AC	45
Ethyl	AC	32
Isopropyl	AC	40
Methyl (methanol)	AC	32
Propyl	AC	40
Aliphatic Hydrocarbons		

Chemical	Filter	Satur. Cap. (%)
Aromatic Hydrocarbons		
Benzene	AC	40
Napthalene	AC	47
Ninhydrin	AC	47
Styrene monomer	AC	47
Toluene	AC	47
Toluidine	AC	47
Xylene	AC	40
Esters		
Butyl acetate	AC	40
Cellosolve acetate	AC	45
Ethyl acetate	AC	40
Ethyl acrylate	AC	45
Ethyl formate	AC	40
Isopropyl acetate	AC	45
Methyl acetate	AC	40
Methyl acrylate	AC	45
Methyl formate	AC	40
Aldehydes & Ketones		
Acetone	AC	32
Acetaldehyde	FOR	10
Acrolein	AC	32
Benzaldehyde	AC	40

Acetylene	AC	20
Iso-butane	AC	10
Butylene	AC	10
Butadiene*	AC	--
Cyclohexane	AC	35
N-decane*	AC	--
Ethane*	AC	--
Ethylene*	AC	--
N-heptane*	AC	--
Heptylene*	AC	--
Hexane	AC	35
Hexylene*	AC	--
Methane*	AC	--
N-nonane*	AC	--
N-octane*	AC	--
N-octylene*	AC	--
Pentane	AC	26
Propane*	AC	--
Propylene	AC	10

Butyraldehyde	AC	32
Caproaldehyde	AC	40
Crotonaldehyde	AC	40
Cyclohexanol	AC	40
Diethyl ketone	AC	32
Dipropyl ketone	AC	40
Formaldehyde	FOR	10
Mesityl oxide	AC	40
Methyl butyl ketone	AC	40
Methyl ethyl ketone	AC/I	32
Methyl isobutyl ketone	AC	40
Propionaldehyde	AC	32
Valeraldehyde	AC	40
Valeric aldehyde	AC	40
Ethers		
Amyl	AC	35
Butyl	AC	35
Cellosolve	AC	40
Dioxan	AC	45
Diethyl (ethyl)	ETH	10
Ethylene oxide	AC	20
Isopropyl	AC	25
Methyl	ETH	10
Methyl cellosolve	AC	45
Propyl	AC	30

Chemical	**Filter**	**Satur. Cap. (%)**
Halogens		
Bromine	AC	53
Butyl chloride	AC	40
Carbon tetrachloride	AC	65
Chlorine	AC	20
Chlorobenzene	AC	53
Chlorobutadiene	AC	40
Chloroform	AC	60
Chloro picrin	AC	65
Chloro nitropropane	AC	60
Dibromoethane	AC	60
Dichlorobenzene	AC	60
Dichlorodifluoromethane	AC	20
Dichlorodifluoroethane	AC	40
Dichloro ethyl ether	AC	53
Dichloromethane	AC	53
Dichloromono-	AC	20

Chemical	Filter	Satur. Cap. (%)
Nitrogen Compounds		
Ammonia	AM	10
Amines low MW	AM	10
Amines high MW	AM	40
Aniline	AC	40
Diethyl amine	AM	20
Diethyl aniline	AC	53
Dimethyl amine	AM	20
Ethyl amine	AM	20
Hydrogen cyanide	CYN	20
Indole	AC	53
Nicotine	AC	40
Nitric acid fumes	AC/I	10
Nitrobenzene	AC	53

fluoromethane		
Dichloropropane	AC	53
Dichlorotetra-fluoroethane	AC	20
Ethyl bromide	AC	20
Ethyl chloride	AC	20
Ethylenechlorohydrin	AC	40
Ethylene dichloride	AC	53
Fluorotrichloro-methane	AC	50
FREON®(BP> -20°C)	AC	45
Hydrogen bromide	AC/I	5
Hydrogen chloride	AC/I	4
Hydrogen iodide	AC/I	7
Iodine	AC	55
Iodoform	AC	53
Methyl bromide	AC	25
Methyl chloride	AC	20
Methyl chloroform	AC	45
Methylene chloride	AC	45
Monochlorobenzene	AC	45
Paradichlorobenzene	AC	45
Perchloroethylene	AC	45
Propyl chloride	AC	40
Tetrachloroethane	AC	53
Tetrachloroethylene	AC	53
Vinyl chloride	AC	20
Sulfur Compounds		
Carbon disulfide	AC	20
Dimethyl sulfate	AC	50
Ethyl mercaptan	SUL	40
Hydrogen sulfide	SUL	20
Mercaptans high MW	SUL	40
Sulfur dioxide	AC/I	10
Sulfur trioxide	AC/I	20
Sulfuric acid	AC/I	40
Tetrahydrothiapene	AC	40

Nitroethane	AC	53
Nitrogen dioxide*	AC/I	—
Nitromethane	AC	40
Nitropropane	AC	40
Nitrotoluene	AC	53
Pyridine	AM	53
Urea	AC	53
Uric acid	AC	53
Miscellaneous		
Adhesives	AC	40
Animal Odors	ALK	30
Camphor	AC	40
Carbon monoxide*	AC	—
Carbon dioxide*	AC	—
Citrus fruits	AC	40
Cooking odors	AC	40
Deodorizers	AC	20
Detergents	AC	40
Hospital odors	ACD	30
Human odors	ACD	30
Leather	AC	30
Ozone	AC	30
Perfumes	AC	30
Gasoline	AC	40
Putrescine	ACD	30
Resins	AC	30
Toilet odors	ALK	30

Filter Types			
ACD	Organic Acid	SUL	Sulphur
AC/I	Inorganic Acid	ETH	Ether
ALK	Alkaline Odor	CYN	Cyanide
FOR	Formaldehyde		
AC	Activated Carbon		
AM	Amines (nitrogen compounds)		