

Permeation Data for StaSafe® Fabrics  
Test Method ASTM F739

Chemical Name	CAS Number	Phys. State	CPE	GraLite20	WinterGlo20	HiGlo Yellow	FlexLite Orange	FlexLite Blue & FlexLite Green
			Avg. Normalized Breakthrough Time (min.)	Avg. Normalized Breakthrough Time (min.)	Avg. Normalized Breakthrough Time (min.)	Avg. Normalized Breakthrough Time (min.)	Avg. Normalized Breakthrough Time (min.)	Avg. Normalized Breakthrough Time (min.)
Acetic acid, glacial	64-19-7	L	>480	nt	nt	nt	nt	nt
Acetone	67-64-1	L	35	imm.*	imm.*	nt	nt	nt
Acetonitrile	75-05-8	L	110	imm.*	imm.*	nt	nt	nt
Acrylic acid	79-10-7	L	>480	nt	nt	nt	nt	nt
Acrylonitrile	107-13-1	L	23	nt	nt	nt	nt	nt
Allyl alcohol	107-18-6	L	>480	nt	nt	nt	nt	nt
Ammonia gas	7664-41-7	G	120*	25*	13*	nt	nt	nt
Borane pyridine complex	110-51-0	L	339	nt	nt	nt	nt	nt
Bromine	7726-95-6	L	31	nt	nt	nt	nt	nt
Butyl Acrylate	141-32-2	L	112	nt	nt	nt	nt	nt
Carbon disulfide	75-15-0	L	12*	imm.*	imm.*	nt	nt	nt
Chlorine gas	7782-50-5	G	>480	<90	180	nt	nt	nt
Chlorine liquid	7782-50-5	L	108	29	nt	nt	nt	nt
Chloroform	647-66-3	L	26	nt	nt	nt	nt	nt
Chlorosulfonic acid	7790-94-0	L	119	nt	30	nt	nt	nt
Cyanex®	mixture	M	>480	nt	nt	nt	nt	nt
Cyanogen Bromide	Various	L	>480	nt	nt	nt	nt	nt
1,2-Dichloroethylene	156-60-5	L	imm.	nt	nt	nt	nt	nt
Dichloromethane	75-09-2	L	imm.	nt	nt	nt	nt	nt
Diethylamine	124-40-3	L	22*	imm.	imm.	nt	nt	nt
Diethylene Glycol	111-96-6	L	105	nt	nt	nt	nt	nt
N,N-Dimethyl formamide	68-12-2	L	112*	20*	12*	nt	nt	nt
Dimethyl sulfate	77-78-1	L	>480	nt	nt	nt	nt	nt
Epichlorohydrin	106-89-8	L	43	nt	nt	nt	nt	nt
Ethyl acetate	140-88-5	L	30*	imm.	imm.*	nt	nt	nt
Ethylene oxide	75-21-8	L	nt	13	nt	nt	nt	nt
Formic acid	64-18-6	L	>480	nt	nt	nt	nt	nt
n-Hexane	110-54-3	L	239*	20*	12*	nt	nt	nt
Hydrazine	302-01-2	L	>480	nt	nt	nt	nt	nt
Hydrochloric Acid	7647-01-0	L	>480	>480	nt	174	nt	nt
Hydrogen Cyanide 10% water solution	74-90-8	G	>480	nt	nt	56	nt	nt

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Hydrogen Cyanide 98%	74-90-8	G	>480	nt	nt	87	nt	nt
Hydrofluoric Acid (48-50%)	7664-39-3	L	>480	>480	>480	>480	>480	>480
Hydrogen fluoride (99%)	7664-39-3	G	>480	328	236	47	47	22
Isobutyl Acrylate	106-63-8	L	129	nt	nt	nt	nt	nt
Methacrylic Acid	79-41-4	L	>480	nt	nt	nt	nt	nt
Methanol	67-56-1	L	>480	24*	16*	nt	nt	nt
Methyl iodide	74-88-4	L	imm.	nt	nt	nt	nt	nt
Methylene Chloride	75-09-2	L	nt	imm.	imm.*	nt	nt	nt
Molten iodine	7553-56-2	L	100	nt	50	nt	nt	nt
Nitric Acid (70%)	7697-39-2	L	nt	nt	nt	37	nt	nt
Nitric Oxide	10102-43-9	G	>480	nt	nt	nt	nt	nt
Nitrobenzene	98-95-3	L	140*	31*	21*	nt	nt	nt
Nitrogen Tetroxide	10102-44-0	L	53.3	nt	nt	nt	nt	nt
Perchloroethylene	127-18-4	L	65	nt	nt	nt	nt	nt
Phenol 99%	108-95-2	L	40	11	nt	nt	nt	nt
Phenol 50%	108-95-2	L	nt	nt	nt	76	nt	nt
Phenol 85%	108-95-2	L	nt	135*	nt	nt	nt	nt
Phosgene	75-44-5	G	>480	nt	nt	nt	nt	nt
Sodium hydroxide NaOH 50%	1310-73-2	L	>480	>480	>480	nt	nt	nt
Sulfuric acid	7664-93-9	L	>480	110	130	110	110	22
1,1,2,2-Tetrachloroethylene	127-18-4	L	nt	12*	imm.*	nt	nt	nt
Tetrahydrofuran	109-99-9	L	16*	imm.	imm.	nt	nt	nt
Toluene	108-88-3	L	28*	imm.*	imm.*	nt	nt	nt
Trichloroethylene	79-01-6	L	nt	nt	imm.*	nt	nt	nt
Vinyl Acetate	108-05-4	L	71	nt	nt	nt	nt	nt

\*Actual Breakthrough time; normalized Data not available

Avg. Norm. = Average Normalized Perm. Rate= Permeation Rate

> = greater than < = less than imm. = immediate (<10 minutes) nt= not tested nm= not measured nd=none detected

sat.= saturated S= Solid L= Liquid G=Gas M= Mixture N/A= Not applicable