



# CHEMICAL RESISTANCE CHART (ASTM)

ENG	NITRILE			NEOPRENE			PVA			PVC			RUBBER			LLDPE		
	Degradation Rating	Permeation Breakthrough	Permeation Rate	Degradation Rating	Permeation Breakthrough	Permeation Rate	Degradation Rating	Permeation Breakthrough	Permeation Rate	Degradation Rating	Permeation Breakthrough	Permeation Rate	Degradation Rating	Permeation Breakthrough	Permeation Rate	Degradation Rating	Permeation Breakthrough	Permeation Rate
1,1,1-Trichloroethane	F (2)	1,5 hr	P	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
1,2-dichlorbenzeen	NA			NA			NA			NA			NA			(4)	>480	E
1,2-dichloorethane	NA			NA			NA			NA			NA			(4)	>480	E
1,2-dichloroethylene	NA			NA			NA			NA			NA			(4)	>480	E
1,5-cyclooctadiene	NA			NA			NA			NA			NA			(4)	>480	E
2-chlorotoluene	NA			NA			NA			NA			NA			(4)	>480	E
2-methoxyethyl ether (diglyme)	NA			NA			NA			NA			NA			(4)	>480	E
4-chlorotoluene	NA			NA			NA			NA			NA			(4)	>480	E
Acetaldehyde	P (3)	—	—	E (2)	10 min	F	NR (3)	—	—	NR (3)	—	—	E (2)	7 min	F	(5)	380	E
Acetic Acid, Glacial	G (1)	69 min	—	E (1)	> 6 hr	—	NR (3)	—	—	NR (3)	—	—	E (1)	1,8 hr	—	(5)	150	—
Acetone	NR (3)	—	—	G (2)	10 min	F	P (3)	—	—	NR (3)	—	—	E (2)	10 min	F	(4)	>480	E
Acetonitrile	F (2)	30 min	F	E (1)	20 min	E	— (2)	2,5 hr	G	NR (3)	—	—	E (2)	4 min	VG	(4)	>480	E
Acrylic Acid	G (2)	2 hr	—	F (2)	ND	E	NR (3)	—	—	NR (3)	—	—	E (2)	1,3 hr	—	N.A.	N.A.	N.A.
Acrylonitrile	NA			NA			NA			NA			NA			E	>480	E
Allyl alcohol	NA			NA			NA			P (3)	60 min	G	E (1)	>10 min	VG	(4)	>480	E
Allyl chloride	F (2)	140 min	F	E (1)	140 min	VG	NA			NA			NA			(4)	>480	E
Allylamine	NA			NA			NA			NA			NA			E	20	E
Ammonia gas	NA			NA			NA			NA			NA			(5)	19	E
Ammonium Fluoride,40%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Ammonium Hydroxide, 30%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	E	30	—
Ammonium Hydroxide, conc.	E (1)	ND	—	E (1)	> 6 hr	—	NR (3)	—	—	E (1)	4 hr	—	E (1)	1,5 hr	—	N.A.	N.A.	N.A.
Amyl Acetate	E (1)	60 min	G	NR (3)	—	—	G (1)	ND	E	P (3)	—	—	NR (3)	—	—	(4)	>480	E
Amyl Alcohol	E (1)	30 min	E	E (1)	290 min	VG	G (1)	3 hr	G	G (2)	12 min	E	E (2)	25 min	VG	N.A.	N.A.	N.A.
Aniline	NR (3)	—	—	G (1)	100 min	P	F (2)	ND	E	F (2)	3 hr	VG	E (2)	25 min	VG	(4)	>480	E
Aqua Regia	F (2)	ND	—	G (1)	ND	—	NR (3)	—	—	G (1)	2 hr	—	NR (3)	—	—	N.A.	N.A.	N.A.
Benzaldehyde	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	G (2)	10 min	VG	(4)	>480	E
Benzene, Benzol	P (3)	—	—	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Bromopropionic Acid	F (2)	2 hr	—	E (1)	420 min	—	NR (3)	—	—	G (1)	3 hr	—	E (1)	3,2 hr	—	(4)	>480	—
Butyl Acetate	F (2)	1,2 hr	F	NR (3)	—	—	G (1)	ND	E	G (3)	—	—	NR (3)	—	—	(4)	>480	E
Butyl Alcohol	E (1)	ND	E	E (1)	210 min	VG	F (2)	1,2 hr	G	G (1)	3 hr	VG	E (2)	20 min	VG	(4)	>480	E
Butyl Cellosolve®	E (1)	1,5 hr	VG	E (2)	120 min	F	— (2)	2 hr	G	P (3)	—	—	E	45 min	G	(4)	>480	E
Butyric acid	NA			NA			NA			NA			NA			(5)	120	—
Carbon Disulphide	G (2)	30 min	F	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Carbon Tetrachloride	G (1)	2,5 hr	G	NR (3)	—	—	E (1)	ND	E	F (2)	25 min	F	NR (3)	—	—	N.A.	N.A.	N.A.
Cellosolve® Acetate	F (2)	1,5 hr	G	G (1)	1,2 hr	VG	— (1)	ND	E	NR (3)	—	—	E (2)	10 min	G	(4)	>480	E
Cellosolve® Solvent	G (1)	3,5 hr	G	E (2)	120 min	F	— (2)	1,2 hr	G	P (3)	—	—	E (2)	25 min	VG	(4)	>480	E
Chlorine gas	NA			NA			NA			NA			NA			(4)	>480	E
Chlorobenzene	NR (3)	—	—	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	E	>480	E
Chloroethane	NA			NA			NA			NA			NA			(4)	>480	E
Chloroform	NR (3)	—	—	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	E	20	G
Chloronapthalene	P (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E



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Chlorothene®VG	F (2)	1,5 hr	P	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Chromic Acid, 50%	F (2)	4 hr	—	NR (3)	—	—	NR (3)	—	—	G (1)	ND	—	NR (3)	—	—	N.A.	N.A.	N.A.
Citric Acid, 10%	E (1)	ND	—	E (1)	ND	—	NR (3)	50 min	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Cyclohexanol	E (1)	ND	E	E (1)	3 hr	E	G (1)	ND	E	E (1)	6 hr	—	E (2)	10 min	G	(4)	>480	E
Cyclohexanone	F (2)	103 min	G	P (3)	—	—	F (2)	ND	—	NR (3)	—	—	P (3)	—	—	(4)	>480	E
Diacetone Alcohol	G (1)	4 hr	E	E (1)	140 min	E	—(2)	2,5 hr	G	NR (3)	—	—	E (2)	15 min	VG	(4)	>480	E
Dibutyl Phthalate	G (1)	ND	E	F (2)	<10 min	F	E (1)	ND	E	NR (3)	—	—	E (2)	20 min	—	N.A.	N.A.	N.A.
Diethylamine	F (2)	45 min	F	P (3)	—	—	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Di-Isobutyl Ketone, DIBK	E (2)	2 hr	F	P (3)	—	—	G (1)	ND	E	P (3)	—	—	P (3)	—	—	(4)	>480	E
Dimethyl Acetamide, DMAC	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	E (2)	15 min	G	(4)	>480	E
Dimethyl Formamide, DMF	NR (3)	—	—	G (2)	40 min	F	NR (3)	—	—	NR (3)	—	—	E (2)	25 min	VG	(4)	>480	E
Dimethyl Sulphoxide, DMSO	E (1)	> 4 hr	VG	E (1)	ND	G	NR (3)	—	—	NR (3)	—	—	E (1)	3 hr	E	(4)	>480	E
Diocetyl Phthalate, DOP	G (1)	> 6 hr	E	G (1)	ND	E	E (2)	30 min	F	NR (3)	—	—	P (3)	—	—	(4)	>480	E
Dioxane	NR (3)	—	—	NR (3)	—	—	P (3)	—	—	NR (3)	—	—	F (2)	5 min	F	(4)	>480	E
d-limonene	E (1)	ND	E	P (3)	—	—	G (1)	ND	E	G (1)	125 min	G	NR (3)	—	—	(4)	>480	E
Electroless Copper*	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Electroless Nickel**	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Epichlorohydrin	NR (3)	—	—	NR (3)	—	—	E (1)	5 hr	E	NR (3)	—	—	E (2)	5 min	F	(4)	>480	E
Ethyl Acetate	NR (3)	—	—	F (2)	10 min	G	F (2)	ND	E	NR (3)	—	—	G (2)	5 min	F	(4)	>480	E
Ethyl Alcohol	E (1)	4 hr	VG	E (1)	113 min	VG	NR (3)	—	—	G (1)	1 hr	VG	E (2)	37 min	VG	(4)	>480	E
Ethyl Ether	E (1)	2 hr	G	E (2)	<10 min	G	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Ethyl Glycol Ether	G (1)	3,5 hr	G	E (1)	120 min	F	—	1,2 hr	G	P (3)	—	—	E (2)	25 min	VG	N.A.	N.A.	N.A.
Ethylbenzene	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Ethylene Dichloride	NR (3)	—	—	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	P (3)	—	—	N.A.	N.A.	N.A.
Ethylene Glycol	E (1)	ND	E	E (1)	ND	E	F (2)	2 hr	VG	E (1)	ND	E	E (1)	ND	E	(4)	>480	E
Ethylene oxide gas	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(5)	234	E
Formaldehyde	E (1)	ND	E	E (1)	2 hr	VG	P (3)	—	—	E (1)	1,3 hr	VG	E (2)	10 min	G	N.A.	N.A.	N.A.
Formic Acid, 90%	F (2)	4 hr	—	E (1)	ND	—	NR (3)	—	—	E (1)	> 6 hr	—	E (1)	2,5 hr	—	(4)	>480	—
Freon® TF	E (1)	ND	E	E (1)	2 hr	VG	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Freon® TMC	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Furfural	NR (3)	—	—	G (2)	30 min	P	F (2)	ND	E	NR (3)	—	—	E (2)	15 min	VG	(4)	>480	E
Furfuryl alcohol	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Gamma - Butyrolactone	NR (3)	—	—	G (2)	—	—	E (1)	2 hr	VG	NR (3)	—	—	E	60 min	G	(4)	>480	E
Gasoline	E (1)	ND	E	NR (3)	—	—	G (1)	ND	E	P (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
HCFC-141b	E (2)	92 min	F	F (2)	33 min	P	NR (3)	—	—	NA	—	—	NA	—	—	(4)	>480	E
Hexamethyldisilazane	E (1)	ND	—	E (1)	15 min	—	G (1)	ND	—	P (3)	—	—	F (2)	15 min	F	(4)	>480	E
Hexane	E (1)	ND	E	E (1)	40 min	F	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Hydrazine, 65%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	2,5 hr	VG	N.A.	N.A.	N.A.
Hydrobromic acid, 48%	NA	—	—	NA	—	—	NR (3)	—	—	NA	—	—	NA	—	—	(4)	>480	—
Hydrochloric Acid, 10%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Hydrochloric Acid, 38%	NA	—	—	NA	—	—	NR (3)	—	—	NA	—	—	NA	—	—	(4)	>480	—



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Hydrochloric Acid, Conc	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	> 5 hr	—	E (1)	4,8 hr	—	N.A.	N.A.	N.A.
Hydrofluoric Acid, 48%	E (2)	2 hr	—	E (2)	5 min	—	NR (3)	—	—	G (2)	40 min	—	E (1)	3,1 hr	—	(4)	>480	E
Hydrofluoric Acid, 50%	NA			NA			NR (3)	—	—	NA			NA			(4)	>480	E
Hydrogen fluoride gas	NA			NA			NA			NA			NA			(4)	>480	E
Hydrogen Peroxide, 30%	E (1)	ND	—	E (2)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Hydroquinone, Saturated	E (1)	ND	E	E (1)	140 min	F	NR (3)	—	—	E (1)	ND	E	G (1)	ND	E	N.A.	N.A.	N.A.
Isobutyl Alcohol	E (1)	ND	E	E (1)	ND	E	P (3)	—	—	F (2)	10 min	VG	E (2)	15 min	VG	(4)	>480	E
Iso-Octane	E (1)	6 hr	E	E (1)	230 min	G	E (1)	ND	E	P (3)	—	—	NR (3)	—	—	(4)	>480	E
Isophorone diisocyanate	NA			NA			NA			NA			NA			(4)	>480	E
Isopropyl Alcohol	E (1)	ND	E	E (2)	<10 min	VG	NR (3)	—	—	G (1)	2,5 hr	E	E (2)	20 min	VG	(4)	>480	E
Kerosene	E (1)	ND	E	E (2)	170 min	P	G (1)	ND	E	F (2)	> 6 hr	E	NR (3)	—	—	(4)	>480	E
Lactic Acid, 85%	E (1)	ND	E	E (1)	ND	E	F (2)	ND	E	E (1)	ND	E	E (1)	ND	—	(4)	>480	—
Lauric Acid, 36%/EtOH	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	F (2)	15 min	—	E (1)	ND	—	N.A.	N.A.	N.A.
Maleic Acid, Saturated	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	G (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Methyl Alcohol	E (2)	11 min	F	E (2)	66 min	G	NR (3)	—	—	G (1)	45 min	G	E (2)	20 min	VG	E	>480	E
Methyl Cellosolve®	F (2)	11 min	G	NR (3)	—	—	G (2)	30 min	G	P (3)	—	—	E (2)	20 min	VG	E	440	E
Methyl Ethyl Ketone, MEK	NR (3)	—	—	P (3)	—	—	F (2)	1,5 hr	VG	NR (3)	—	—	F (2)	5 min	F	(4)	>480	E
Methyl Glycol Ether	F (2)	11 min	G	NR (3)	—	—	G (2)	30 min	G	P (3)	—	—	E (2)	20 min	VG	N.A.	N.A.	N.A.
Methyl Isobutyl Ketone, MIBK	P (3)	—	—	NR (3)	—	—	F (2)	ND	E	NR (3)	—	—	P (3)	—	—	(4)	>480	E
Methyl Iodide	NR (3)	—	—	NR (3)	—	—	F (2)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Methyl Methacrylate	P (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	P (3)	—	—	(4)	>480	E
Methyl propyl ketone	NA			NA			NA			NA			NA			(4)	>480	E
Methyl t-Butyl Ether, MTBE	E (1)	ND	E	P (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Methylamine	E (1)	ND	E	G (1)	140 min	G	NR (3)	—	—	E (1)	2,2 hr	VG	E (1)	55 min	VG	N.A.	N.A.	N.A.
Methylamine gas	NA			NA			NA			NA			NA			(5)	24	G
Methylamine, 40%	NA			NA			NA			NA			NA			E	>480	E
Methylene Bromide	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	E	>480	E
Methylene Chloride	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	E	20	VG
Mineral Spirits, Rule 66	E (1)	ND	E	G (1)	ND	E	E (1)	ND	E	F (2)	2,5 hr	VG	NR (3)	—	—	N.A.	N.A.	N.A.
Monoethanolamine	E (1)	ND	E	E (1)	260 min	E	F (2)	ND	E	E (1)	ND	E	E (1)	50 min	E	N.A.	N.A.	N.A.
Morpholine	NR (3)	—	—	P (3)	—	—	G (1)	1,5 hr	G	NR (3)	—	—	G (2)	20 min	G	(4)	>480	E
Muriatic Acid	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	> 5 hr	—	E (1)	4,8 hr	—	N.A.	N.A.	N.A.
Naptha VM&P	E (1)	ND	E	G (2)	100 min	F	E (1)	> 7 hr	E	F (2)	2 hr	VG	NR (3)	—	—	(4)	>480	E
Nitric Acid, 10%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	G (1)	ND	—	G (1)	ND	—	(4)	>480	—
Nitric Acid, 70%	NR (3)	—	—	G (1)	ND	—	NR (3)	—	—	F (2)	5,7 hr	—	NR (3)	—	—	E	>480	—
Nitric Acid, Red Fuming	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	P (3)	—	—	P (3)	—	—	N.A.	N.A.	N.A.
Nitrobenzene	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	F (2)	15 min	G	(4)	>480	E
Nitromethane, 95.5%	F (2)	30 min	F	E (1)	60 min	G	G (1)	ND	E	P (3)	—	—	E (2)	10 min	G	(4)	>480	E
Nitropropane, 95.5%	NR (3)	—	—	G (2)	<10 min	F	E (1)	> 6 hr	E	NR (3)	—	—	E (2)	5 min	G	(4)	>480	E
N-Methyl-2-Pyrrolidone, NMP	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	NR (3)	—	—	E (1)	1,25 hr	VG	(4)	>480	E
Octyl Alcohol	E (1)	ND	E	E (2)	<10 min	E	G (1)	ND	E	F (2)	> 6 hr	E	E (1)	30 min	VG	N.A.	N.A.	N.A.



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Oleic Acid	E (1)	ND	E	E (2)	<10 min	G	G (1)	1 hr	E	F (2)	1,5 hr	VG	F (2)	ND	—	N.A.	N.A.	N.A.
Oxalic Acid, Saturated	E (1)	ND	—	E (2)	ND	—	P (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Palmitic Acid, Saturated	G (2)	30 min	—	E (1)	ND	—	P (3)	—	—	G (1)	1,2 hr	—	G (2)	5 min	—	N.A.	N.A.	N.A.
Pentachlorophenol	E (1)	ND	E	E (2)	151 min	F	E (2)	5 min	F	F (2)	3 hr	E	NR (3)	—	—	N.A.	N.A.	N.A.
Pentane	E (1)	ND	E	E (1)	20 min	F	G (1)	ND	E	NR (3)	—	—	P (3)	—	—	E	>480	E
Perchloric Acid, 60%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	F (2)	ND	—	N.A.	N.A.	N.A.
Perchloroethylene	G (1)	5 hr	VG	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Phenol	NR (3)	—	—	E (1)	140 min	F	F (2)	ND	E	G (1)	1,2	VG	E (1)	1,5 hr	—	(4)	>480	E
Phosphoric acid (85%)	NA	—	—	NA	—	—	NR (3)	—	—	NA	—	—	NA	—	—	(4)	>480	E
Phosphoric Acid, Conc	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	G (1)	ND	—	F (2)	ND	—	N.A.	N.A.	N.A.
Picric Acid, Sat./EtOH	E (1)	2,6 hr	VG	E (1)	3 hr	VG	NR (3)	—	—	E (1)	40 min	VG	— (2)	—	—	N.A.	N.A.	N.A.
Potassium Hydroxide, KOH, 50%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	E (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Propionic acid	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Propyl Acetate	F (2)	20 min	G	P (3)	—	—	G (1)	2 hr	VG	NR (3)	—	—	P (3)	—	—	N.A.	N.A.	N.A.
Propyl Alcohol	E (1)	ND	E	E (1)	200 min	VG	P (3)	—	—	F (2)	1,5 hr	VG	E (2)	20 min	VG	(4)	>480	E
Propylene Oxide	NR (3)	—	—	NR (3)	—	—	G (2)	35 min	G	NR (3)	—	—	P (3)	—	—	E	>480	E
Pyridine	NR (3)	—	—	P (3)	—	—	G (2)	10 min	F	NR (3)	—	—	F (2)	10 min	F	(4)	>480	E
Rubber Solvent	E (1)	ND	E	G (1)	40 min	F	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	N.A.	N.A.	N.A.
Silicon Etch	NR (3)	—	—	G (1)	ND	—	NR (3)	—	—	F (2)	2,5 hr	—	NR (3)	—	—	N.A.	N.A.	N.A.
Skydrol® hydraulic fluid	NR (3)	—	—	NR (3)	—	—	F (2)	—	—	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Sodium Hydroxide, NaOH, 50%	E (1)	ND	—	E (1)	ND	—	NR (3)	—	—	G (1)	ND	—	E (1)	ND	—	(4)	>480	—
Stoddard Solvent	E (1)	ND	E	E (1)	ND	E	E (1)	ND	E	F (2)	6 hr	E	NR (3)	—	—	N.A.	N.A.	N.A.
Styrene	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Sulphuric 47% battery acid	E (2)	ND	—	E (1)	ND	—	NR (3)	—	—	G (1)	ND	—	E (1)	ND	—	N.A.	N.A.	N.A.
Sulphuric Acid, 95%	NR (3)	—	—	F (2)	105 min	—	NR (3)	—	—	G (2)	3,6 hr	—	NR (3)	—	—	(4)	>480	—
Tannic Acid, 65%	E (1)	ND	E	E (1)	ND	E	P (3)	—	—	E (1)	ND	E	E (1)	ND	—	N.A.	N.A.	N.A.
Tetrachloroethylene	G (1)	5 hr	VG	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Tetrahydrofuran, THF	NR (3)	—	—	NR (3)	—	—	P (2)	1,5 hr	G	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Toluene Di-Isocyanate, TDI	NR (3)	—	—	NR (3)	—	—	G (1)	ND	E	P (3)	—	—	G (2)	7 min	G	(4)	>480	E
Toluene, Toluol	F (2)	10 min	F	NR (3)	—	—	G (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Trichloroethylene, TCE	NR (3)	—	—	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E
Trichlorotoluene	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Tricresyl Phosphate, TCP	E (1)	ND	E	F (2)	<10 min	P	G (1)	ND	E	F (2)	ND	E	E (1)	45 min	E	N.A.	N.A.	N.A.
Triethanolamine, 85%, TEA	E (1)	ND	E	E (2)	<10 min	G	G (1)	ND	E	E (1)	ND	E	G (1)	ND	E	N.A.	N.A.	N.A.
Trifluorotoluene	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Turpentine	E (1)	30 min	E	NR (3)	—	—	G (1)	ND	E	P (3)	—	—	NR (3)	—	—	(4)	>480	E
Vinyl chloride gas	NA	—	—	NA	—	—	NA	—	—	NA	—	—	NA	—	—	(4)	>480	E
Xylene, Xylol	G (2)	1,2 hr	F	NR (3)	—	—	E (1)	ND	E	NR (3)	—	—	NR (3)	—	—	(4)	>480	E



# CHEMICAL RESISTANCE CHART (ASTM)

## Specific gloves used for testing :

	Degradation	Permeation (ASTM F 739)
Nitrile	Sol-Vex™ 37-645	Sol-Vex™ 37-665
Neoprene	Neox™	Neox™
PVA	PVA™	PVA™
PVC	Snorkel™	Snorkel™
Natural Rubber	Universal™ Plus	Universal™ Plus
LLDPE	Barrier™	Barrier™

(1) The glove material is very well suited for application with that chemical

(2) The glove material is suitable for that application under careful control of its use

(3) Avoid use of this glove type with this chemical

(4) A degradation test against this chemical was not run. However, since its breakthrough time is greater than 8 hours, the Degradation Rating would be expected to be Good to Excellent.

(5) A degradation test against this chemical was not run. However, in view of degradation test results with similar compounds, the Degradation Rating would be expected to be Good to Excellent.

## Key to Degradation Ratings

E	Excellent: fluid has very little degrading effect
G	Good: fluid has minor degrading effect
F	Fair: fluid has moderate degrading effect
P	Poor: fluid has pronounced degrading effect
NR	Fluid: is not recommended with this material
NA	Not available

Note: Any test samples rated P (Poor) or NR (Not recommended) in degradation testing were not tested for permeation resistance. A Dash (-) appears in those cases.

## Key to permeation breakthrough

Breakthrough times indicated are the shortest times observed from the start of the test to the first detection of the chemical on the other side of the sample. They indicate how long a glove may be expected to provide effective resistance against a chemical hazard. > means greater than (time); < means less than (time).

Key to Permeation Rate		Drops per hour through a glove (Eyedropper size drop)
ND	None Detected during a six hour test (equivalent to Excellent)	None
E	Excellent; permeation rate of less than 0.9µg/cm <sup>2</sup> /min	0 to 1/2 drop
VG	Very Good; permeation rate less than 9.0µg/cm <sup>2</sup> /min	1 to 5 drops
G	Good; permeation rate of less than 90µg/cm <sup>2</sup> /min	6 to 50 drops
F	Fair; permeation rate of less than 900µg/cm <sup>2</sup> /min	51 to 500 drops
P	Poor; permeation rate of less than 9000µg/cm <sup>2</sup> /min	501 to 5000 drops
NR	Not recommended; permeation rate greater then 9000µg/cm <sup>2</sup> /min	5001 drops, plus

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