



Chemical Permeation Guidelines

Permeation data are presented in two values: (i) breakthrough time and (ii) rate. Breakthrough times are the times observed from the start of the test until first detection of the chemical on the other side of the sample. The process enables the estimation of the amount of time a glove can be expected to provide effective resistance when it is totally immersed in the test chemicals. Permeation rates are the highest flow rates recorded for the permeating chemicals during a 6 hour test.

Colour Coding Rating		
Green		Excellent permeation rate (very slow; breakthrough time is >30 minutes)
Yellow		Results require additional consideration to determine suitability for use
Red		Not recommended for use

Permeation Performance Level	Breakthrough Time (Min)
1	> 10
2	> 30
3	> 60
4	> 120
5	> 240
6	> 480

Abbreviation	Rating
E	Excellent
G	Good
F	Fair
P	Poor
NR	Not Recommended

EN374:3	Premium Latex		Soft Latex		Premium Nitrile		Soft Nitrile	
	Permeation Rating	Permeation Level	Permeation Rating	Permeation Level	Permeation Rating	Permeation Level	Permeation Rating	Permeation Level
Acetaldehyde	F	1	P	1	P	1	P	1
Acetic Acid	F	3	F	1	G	2	F	2
Acetone	P	1	P	1	NR	-	NR	-
Acetonitrile	P	1	P	1	P	1	P	1
Acrylamide	NR	-	NR	-	F	1	F	1
Allyl Alcohol	G	1	F	1	F	3	F	1
Ammonium Hydroxide 70%	F	3	F	2	G	5	G	4
Aniline	F	1	F	1	NR	-	NR	-
Benzaldehyde	G	2	P	1	NR	-	NR	-
Benzene	P	1	P	1	NR	-	NR	-
Benzotrifluoride	F	2	F	2	G	4	F	2
Bromopropionic Acid	G	3	F	3	F	3	F	3
Butyl Acetate	NR	-	NR	-	F	3	F	2
Butyl Alcohol	G	2	F	1	E	5	G	3
Carbon disulfide	NR	-	NR	-	F	2	P	1
Carbon Tetrachloride	NR	-	NR	-	G	4	G	3
Chlorine Aqueous	NR	-	NR	-	NR	-	NR	-
Chloroform	NR	-	NR	-	NR	-	NR	-
Chromic Acid up to 70%	NR	-	NR	-	F	5	F	4
Citric Acid up to 10%	G	5	G	3	E	5	E	4
Cyclohexanol	G	1	F	1	E	5	E	3
Diisobutyl ketone	P	1	P	1	F	3	F	2
Dimethyl Sulfoxide	E	4	E	3	G	5	G	3
Diethyl Phthalate	P	1	P	1	E	5	E	5
Dioxane	F	1	F	1	P	1	P	1
Ethyl Acetate	F	1	F	1	P	1	P	1
Ethidium Bromide 10%	NR	-	NR	-	E	5	E	3
Ethyl Alcohol	G	2	F	2	G	5	G	3
Ethyl Glycol Ether	F	1	F	1	G	4	F	4
Ethylene Glycol	E	5	G	5	E	5	E	3
Formaldehyde	F	1	F	1	E	5	E	5
Formic Acid	F	4	F	4	G	5	F	3
Furfural	F	1	F	1	NR	-	NR	-
Glutaraldehyde up to 25%	G	4	F	2	F	4	F	2
Gasoline	NR	-	NR	-	E	5	G	2
Hexanes	NR	-	NR	-	E	5	E	4
Hydrochloric Acid	E	5	G	4	G	5	F	3
Hydrofluoric Acid up to 48%	F	4	F	2	F	5	P	-

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Hydrogen Peroxide	F	3	P	2	G	4	F	2
Isobutyl Alcohol	G	1	F	1	G	5	F	2
Isopropyl Alcohol	G	2	F	1	E	5	E	3
Kerosene	NR	-	NR	-	E	5	G	3
Lactic Acid	E	5	G	5	E	5	E	4
Lauric Acid	G	5	G	3	E	5	G	3
Maleic Acid	G	5	G	4	G	5	G	3
Mercury	E	6	E	5	E	6	E	4
Methanol	P	1	P	1	NR	-	NR	-
Methyl Acetate	P	1	P	1	NR	-	NR	-
Methyl Amyl Ketone	P	1	P	1	F	2	P	1
Methylene Bromide	NR	-	NR	-	NR	-	NR	-
Methylene Chloride	NR	-	NR	-	NR	-	NR	-
Mineral Spirit	NR	-	NR	-	E	5	E	3
Naphtha	NR	-	NR	-	E	5	E	5
Nitric Acid 10%	E	5	E	5	E	5	G	4
Nitric Acid 70%	NR	-	NR	-	NR	-	NR	-
Nitrobenzene	G	1	F	1	NR	-	NR	-
Oleic Acid	E	5	E	5	E	5	E	5
Oxalic Acid	E	5	G	5	E	5	E	5
Pentane	P	1	P	1	G	5	G	5
Perchloric Acid 60%	E	5	E	3	E	5	E	2
Perchloroethylene	NR	-	NR	-	G	3	F	3
Phenol	NR	-	NR	-	NR	-	NR	-
Phosphoric Acid 70% +	F	4	F	3	E	5	E	3
Potassium Hydroxide 50%	E	5	E	3	E	5	E	4
Propyl Acetate	P	1	P	1	G	2	G	1
Propyl Alcohol	G	1	G	1	E	5	E	3
Pyridine	F	1	F	1	NR	-	NR	-
Sodium Hydroxide 40%	E	6	E	5	E	6	E	6
Sodium Hypochlorite	E	5	G	3	E	5	E	5
Sulfuric Acid 70%+	NR	-	NR	-	NR	-	NR	-
Tetrahydrofuran	NR	-	NR	-	NR	-	NR	-
Toluene	NR	-	NR	-	F	1	F	1
Trichloroethylene	NR	-	NR	-	NR	-	NR	-
Triethanolamine	E	5	E	3	E	5	E	3
Turpentine	NR	-	NR	-	E	2	E	2
Xylene	NR	-	NR	-	NR	-	NR	-