

# Chemical Resistance

## and Barrier Guide

CHEMICAL NAME	NFPA Health Rating	Nitrile	Natural Rubber	PVC
Acetaldehyde	3	P	G	P
Acetic Acid (Glacial)	3	F	G	F
Acetic Anhydride	3	F	G	P
Acetone	1	F	G	P
Acetonitrile	2	F	F	P
Acrylic Acid	3	G	G	P
Ammonium Acetate		E	E	G
Ammonium Carbonate		E	E	E
Ammonium Fluoride, 30-70%	3	E	E	G
Ammonium Hydroxide, 30-70%		E	E	E
Ammonium Hydroxide, <30%		E	E	E
Amyl Alcohol	1	E	G	G
Aniline	3	F	G	G
Aqua Regia		P	P	F
AZT			G	
Benzaldehyde	2	P	F	P
Benzene	2	F	P	P
Boric Acid		E	G	E
Bromopropionic Acid		F	G	G
Butyl Acrylate	2	P	P	P
Butyl Cellulose		G	G	P
Calcium Hydroxide		E	E	
Carbon Disulfide	3	G	P	P
Carbon Tetrachloride	3	P	P	F
Chlorobenzene	2	P	P	P
Chlorodibromomethane		P	P	F
Chloroform	2	P	P	P
Chloronaphthalenes	1	P	P	P
Chromic Acid	3	F	P	G
Cisplatin		G	G	P
Citric Acid, 30-70%		E	E	E
Cyclohexane	1	E	P	P
Cyclohexanol	1	E	G	E
Cyclohexanone	1	P	P	P
Cyclohexylamine	3	P	P	P
Di-N-Amylamine	3	E	P	P
Di-N-Butylamine	3	E	P	P
Di-N-Butylphthalate	0	E	F	P
Di-N-Octylphthalate	0	E	F	P
Diacetone Alcohol	1	G	F	P
Diallylamine		P	P	P
Dichloroacetyl Chloride	3	P	P	P
Diesel Fuel	0	E	P	
Diethanolamine	1	E	E	E
Diethylamine	3	G	F	P
Diethylene Glycol	1	E	E	
Diethylenetriamine	3	P	P	P
Diisobutyl Ketone	1	G	P	P
Diisobutylamine	3	E	P	P

CHEMICAL NAME	NFPA Health Rating	Nitrile	Natural Rubber	PVC
Dimethyl Ether		G	P	P
Dimethyl Sulfoxide (DMSO)	1	G	E	G
Dimethylacetamide	2	F	G	P
Dimethylformamide (DMF)	1	P	P	P
Dioxane	2	P	P	P
Epichlorohydrin	3	P	F	P
Ethanol	0	G	G	G
Ethyl Acetate	1	P	F	P
Ethyl Ether	1	G	P	P
Ethylene Glycol Dimethyl	2	F	F	P
Ethylene Dichloride	2	P	P	P
Ethylene Glycol	1	E	E	G
Formaldehyde, 30-70%	3	E	G	E
Formic Acid	3	G	E	E
Freon 113 OR TF		E	P	F
Freon TMC		F	F	P
Furfural	3	P	P	P
Gasoline, 40-50% Aromatics	1	E	P	P
Gasoline, unleaded	1	G	P	P
Glutaraldehyde, <5%		G	G	F
Glycerol		E	E	
Heptanes	1	E	P	P
Hexane	1	E	P	P
Hydrazine	3	E	F	E
Hydrochloric Acid, <30%	3	G	E	E
Hydrofluoric Acid, <10%	4	G	G	F
I Sobotyl Alcohol	1	E	P	F
I Sooctane	0	E	P	P
I Sopropyl Alcohol	1	E	E	G
I Sopropylamine	3	P	P	P
Jet Fuel, <30% Aromatics 73-248C	1	G	P	P
Kerosene		E	P	F
Lactic Acid		E	E	E
Lauric Acid		E	E	F
Malathion, 30-70%		G		
Maleic Acid		G	G	E
Methanol	1	F	F	F
Methyl Acetate	1	P	P	P
Methyl Ethyl Ketone	1	P	P	P
Methyl Isobutyl Ketone	2	P	P	P
Methyl Methacrylate	2	P	P	P
Methylene Chloride	2	P	P	P
Amyl Acetate	1	F	P	P
Butyl Acetate	1	F	P	P
Butyl Alcohol	1	E	E	F
N-Methyl-2 Pyrrolidone (NMP)	2	P	E	P
N-Nitrosodiethylamine		P		
Propyl Alcohol	1	E	E	F
Naphtha, <3% Aromatics	1	E	P	F

CHEMICAL NAME	NFPA Health Rating	Nitrile	Natural Rubber	PVC
Nitric Acid, <30%	3	G	G	G
Nitric Acid, 30-70%	3	P	P	F
Nitrobenzene	3	F	F	P
Nitroethane	1	P	G	P
1-Nitropropane	1	P	F	P
2-Nitropropane	1	P	P	P
Octane	0	G	P	P
Octyl Alcohol	1	E	E	F
Oleic Acid	0	E	G	G
Oxalic Acid	3	E	E	E
Palmitic Acid		G	F	G
PCB (Polychlorinated Biphenyls)	2	G	P	
Pentachlorophenol	3	G	P	F
Pentane	1	E	P	P
Perchloric Acid, 30-70%	3	F	F	F
Perchloroethylene	2	G	P	P
Peroxyacetic Acid		P	P	P
Petroleum Ethers, 80-110C	1	G	P	P
Phenol	4	F	F	F
Phosphoric Acid	3	G	F	G
Picric Acid	3	E	G	E
Potassium Hydroxide	3	E	G	E
Potassium Iodide		G	G	G
Propyl Acetate	1	F	P	P
Pyridine	3	P	P	P
Sodium Carbonate		E	E	E
Sodium Chloride		E	E	E
Sodium Fluoride	3	G	G	G
Sodium Hydroxide, 30-70%	3	G	E	E
Sodium Hypochlorite		E	E	F
Sodium Thiosulfate		G	G	G
Styrene	2	P	P	P
Sulfuric Acid, <70%	3	F	G	G
Sulfuric Acid, >70%	3	P	P	P
Tannic Acid	0	G	G	G
1,1,1,2-Tetrachloroethane		F	P	P
Tetrahydrofuran	2	F	P	P
Toluene	2	F	P	P
Toluene-2,4-Diisocyanate (TDI)	3	P	P	P
1,2,4 - Trichlorobenzene	2	F	P	P
1,1,1-Trichloroethane	2	P	P	P
1,1,2,-Trichloroethane	2	P	P	P
Trichloroethylene	2	P	P	P
Tricresyl Phosphate	2	G	G	F
Triethanolamine	2	E	E	E
Turpentine	1	E	P	F
Xylenes	2	F	P	P

## Chemical Resistance and Barrier Guide

*For Nitrile, Natural Rubber Latex and Polyvinyl Chloride Gloves*

### INCIDENTAL EXPOSURE ONLY

Kimberly-Clark's Nitrile, Natural Rubber Latex and Polyvinyl Chloride (PVC) gloves are thin gauge disposable products designed to provide barrier protection and tactile sensitivity to the wearer. Our gloves are not designed for applications involving prolonged, direct exposure to chemicals. Our intent in providing this chemical compatibility information is to provide a guideline for *use of our gloves in applications where incidental splash exposure to various chemicals may occur.*

The chemical compatibility information on this chart is intended to provide general information about reaction of Nitrile, Natural Rubber Latex and Polyvinyl Chloride glove films to the commonly used chemicals listed.

**The rating scale takes into consideration three primary factors:**

- 1) the ability of the chemical to permeate (pass through) the glove film.*
- 2) the ability of the chemical to degrade (break down) the physical structure of the glove film.*
- 3) the risk that contact exposure to the chemical poses to the glove wearer.*

### Kimberly-Clark recommends that you USE CAUTION AT ALL TIMES.

- Verify that your gloves are compatible with your specific applications, processes and materials before using.*
- When performing processes where gloves will receive prolonged, direct exposure to chemicals, use a glove specifically designed for chemical handling.*
- Avoid the risk of exposing your workers, products and facilities to chemical cross-contamination: immediately dispose of gloves after contact with chemicals.*
- Double gloving provides additional barrier protection and allows the outer glove to be disposed of after contact with chemicals without exposing the hand.*
- Do not use powdered gloves with substances known to pose inhalant hazards.*
- If you have any questions about using Kimberly-Clark gloves or the information on this chart, please contact our Technical Affairs Department at 1-800-851-7538.*

Information is based upon published data. SAFESKIN\* gloves have not been individually tested against these chemicals. Variability in material thickness, chemical concentration, temperature and length of exposure to chemicals will affect specific performance.

The National Fire Protection Association (NFPA) has developed a system for indicating the health hazards of chemicals:

- |          |  |
|----------|--|
| <b>4</b> | Danger, may be fatal on short exposure. Specialized protective equipment required. |
| <b>3</b> | Warning, corrosive or toxic.   |
| <b>2</b> | Warning, may be harmful if inhaled or absorbed.                                    |
| <b>1</b> | Caution, may be irritating.  |
| <b>0</b> | No unusual hazard.   |

No information available. Avoid skin contact or inhalation.

The compatibility of the glove films with each chemical is letter coded.

- |              |                                       |
|--------------|---------------------------------------|
| <b>P</b>     | POOR chemical resistance              |
| <b>F</b>     | FAIR chemical resistance              |
| <b>G - E</b> | GOOD to EXCELLENT chemical resistance |

