



Hand Protection / Reference Guide

Disclaimer

The material on this section is only intended to provide an overview of the chemical protective gloves categories. When selecting a glove, the user must consider that the chemical resistance of a given glove material can vary from one manufacturer to another based on the material thickness. Gloves material must be selected based on the manufacturer's chemical resistance data (glove selection/compatibility chart).

HAZARD

	TYPE OF GLOVE
Light Duty	Cotton, Leather or Kevlar (moving boxes etc)
Medium Duty	Leather or Kevlar (wood, small pieces of roughed glass, etc)
Heavy Duty	Kevlar (exposure to sharp or jagged metal, glass, box cutters, etc)
High Temperature	Insulating Gloves
Low Temperature	Insulating Gloves
Cryogenics	Cryogenic Gloves (must extend above wrist and not have elastic)
Electrical	Use appropriate PPE for high voltage maintenance prescribed through your electrical safety training. See Electrical Protection.
Chemical	Choose the appropriate number from the matrix below for your hazard/frequency condition. The corresponding recommendations to the matrix numbers are listed below the chart. Then, consult the Chemical Protective Glove Selection Guide below.

Chemical Hazard Class	Frequency of Use		
	No Use	Periodic Use	Routine Use
Low hazard chemicals	1	1	1
Moderate hazard chemicals	2	2	3
High hazard chemicals	3	3	4

MATRIX NUMBER:

1. Use glove which provides dexterity (choice of material is no important).
2. Use glove which provides dexterity needed (consider permeation and degradation rating of glove against chemical). Gloves rated "r" are minimally acceptable.
3. Use glove effectiveness against chemical as primary consideration. Gloves which are rated as R for 8 hours are minimally acceptable.
4. Use glove effectiveness against chemical as primary consideration. Gloves which are rated as RR for 8 hours are minimally acceptable. Seek methods to reduce chemical contact time with glove.

Never immerse gloves in chemical baths - Gloves should be used to provide splash protection only to the greatest extent possible. See chemical Protective Glove Selection Guide below.

CHEMICAL PROTECTIVE GLOVE SELECTION GUIDE

RECOMMENDATION KEY

Letters R & N

The letter R represents good chemical resistance, while the letter N represents poor chemical resistance.

Letter Case

Upper case letters indicate consensus and a relatively large amount of information and lower case denote a relatively small amount of information or inconsistencies.

Number of Letters

Double characters indicate test data in support of the recommendation. Single letters show no test data in support of the recommendation.

Chemical Hazard	PROTECTIVE MATERIAL										
	Butyl	CPE	Viton / Neoprene	Natural Rubber	Neoprene	Neoprene + PVC	Nitrile	PE	PVC	Viton	Butyl / Neoprene
Acetaldehyde	RR	NN		NN	NN	NN	NN	NN	NN	NN	NN
Acetic Acid	R	RR		nn	RR	nn	RR	nn	NN	RR	
Acetic Anhydride	RR	RR		NN	nn				NN	n	
Acetone	RR	NN		NN	NN	nn	NN	NN	NN	NN	
Acetonitrile	RR	RR	nn	NN	NN		NN	NN	NN	RR	RR
Acrylic Acid	r								n		
Acrylonitrile	n	nn		N	r	n	n	NN	N	n	
Ammonium Hydroxide	R	r		RR	RR	NN	RR	NN	NN	r	
Amyl Alcohol	RR		r	NN	RR	NN	nn	nn	NN	RR	r
Aniline / Benzamine	RR	r	RR	NN	NN	NN	nn	NN	NN	NN	RR
Benzaldehyde	RR	n	n	nn	nn	n	nn	NN	N	RR	r
Benzene	NN	nn	RR	NN	NN	NN	NN	NN	NN	nn	RR
Benzoyl Chloride	RR	n	r		nn				NN	nn	n
Butanol / Butyl Alcohol	R	r		nn	RR	nn	RR	RR	nn	r	
Butoxyethanol (EGBE)			r				NN		RR		n
Butyraldehyde	nn		n	R	nn	r	r		R	nn	r
Carbon Disulfide	NN	NN		N	N	n	NN	NN	N	RR	
Carbon Tetrachloride	N	nn	r	NN	NN	NN	N	NN	NN	RR	n
Chloroacetone	r		n	n	R	n			N		r
Chloroform	N	NN	r	NN	NN	n	NN	NN	NN	RR	n
Chromic Acid	n	r		NN	N	RR	N	RR	RR	r	
Cumene		RR	r								n
Cyclohexane	RR	n	n				nn		n	nn	n
Cyclohexanol	n	r	r	NN	NN	nn	RR	RR	RR	RR	r

Chemical Hazard	Butyl	CPE	Viton / Neoprene	Natural Rubber	Neoprene	Neoprene + PVC	Nitrile	PE	PVC	Viton	Butyl / Neoprene
Cyclohexanone	RR	n	n				nn		n	nn	n
Dibenzyl Ether	r		n	N	R	r	r		R		r
Dichlorobenzene	n	nn							n		
Diethanolamine	RR			n	RR	n	nn		r	RR	
Diethylamine	Silver Shield Glove = RR										
Dimethyl Formamide (DMF)	RR			nn	NN	n	NN	nn	N	NN	
Dimethyl Sulfoxide (DMSO)		RR		RR	RR	RR	nn	RR	NN		
Diethyl Phthalate (DEP)				n	r	nn		NN	nn		
Dioxane	RR	r		NN	NN	n	NN	NN	NN	NN	
Epichlorohydrin	RR	n		NN	nn		nn	NN	NN	nn	nn
Ethanolamine	RR	r	n	RR	RR	RR	RR	RR	RR	n	n
Ethoxyethanol (EGEE)	RR		r	NN	NN		NN		NN		n
Ethyl Acetate	RR	nn	n	NN	NN	nn	NN	NN	nn	n	n
Ethyl Ether	Polyvinyl Alcohol (cannot be used in processes involving water)										
Ethylene Dichloride	nn	nn	r	NN	NN	n	NN	NN	NN	RR	n
Ethylene Oxide Gas	r	r			n		NN		n	n	
Ethylene Glycol	R	r	r	RR	RR	RR	RR	RR	nn	r	r
Formaldehyde	RR	RR	r	NN	NN	nn	NN	RR	NN	RR	r
Formic Acid	R	r		R	R	R	r	NN	R	n	
Furfural	RR	r	n	NN	NN	nn	NN	NN	N	RR	r
Glutaraldehyde	RR				RR				RR	RR	
Heptane				NN	nn	RR	RR	RR	NN	RR	
Hexane	NN	RR		NN	NN	NN	NN	NN	NN	RR	
Hydrazine	RR	n		r	RR		RR		RR	n	
Hydrobromic Acid	r			r	R	r			R		
Hydrochloric Acid	nn	RR	RR	RR	RR	RR	RR		NN	RR	RR
Hydrofluoric Acid	nn	r	RR	N	N	n	n	RR	NN	RR	RR
Mercury			r		r				r		r
Methyl Cellosolve	RR			n	R	r	nn		R		
Methyl Ethyl Ketone (MEK)	RR	nn	NN	NN	NN	NN	NN	NN	NN	NN	NN
Methyl Iodide	nn			NN	NN		NN	NN		RR	
Methyl Methacrylate	Polyvinyl Alcohol (cannot be used in processes involving water)										

Chemical Hazard	Butyl	CPE	Viton / Neoprene	Natural Rubber	Neoprene	Neoprene + PVC	Nitrile	PE	PVC	Viton	Butyl / Neoprene
Methylene Chloride	NN	nn	r	NN	NN	nn	NN	NN	NN	nn	N
Morpholine	RR			nn	N	r	NN		n	RR	
Nitric Acid	n	RR	RR	n	RR	nn	n	RR	NN	RR	RR
Nitrobenzene	RR	RR		NN	NN	n	NN		N	RR	
Nitrotoluene					r				r		
PCB	nn	n		NN	RR			NN	n	RR	
Pentachlorophenol					NN		RR		RR		
Perchloric Acid	r		r	N	RR	RR	RR	RR	RR	r	r
Perchloroethylene / Tetrachloroethylene	NN	RR	r	NN	NN	NN	nn	N	NN	RR	n
Phenol / Carboic Acid	R	nn		NN	nn	n	NN	RR	NN	n	
Phosphoric Acid	r			RR	RR	RR	RR	RR	RR		
Potassium Hydroxide	r			R	R	r	R		R	n	
Propyl Alcohol	r		r	nn	RR	NN	RR	NN	nn	r	r
Propylene Oxide	RR		n	NN	n	n	n	NN	n	NN	n
Sodium Hydroxide	n	RR		R	R	RR	R	RR	RR		
Sodium Hypochlorite (30-70%)				RR	RR	RR	RR		RR		
Styrene	n	RR	r	NN	NN	NN	NN	NN	NN	r	n
Sulfuric Acid	n	RR	RR	N	RR	nn	n	RR	NN	RR	RR
Tannic Acid	R	r		R	R	RR	R	RR	RR	r	
1,1,2-Tetrachloroethane	nn	n		NN	NN		nn	NN	NN	RR	
Tetrahydrofuran (THF)	Teflon = RR, all others NN or n										
Toluene	NN	r	RR	NN	NN	nn	NN	NN	NN	NN	
Toluidine	Teflon = RR										
1,1,2-Trichloroethane	nn			NN	NN		NN	NN	NN	RR	
Triisooctyl Phosphate			r								r
Triethanolamine		RR	n		nn		RR		NN	RR	n
Trinitrotoluene	n			N	N	r			R		
Vinyl Chloride	n	RR					NN		n	RR	
Xylene	n	n	r	NN	NN	NN	NN	NN	NN	RR	n

CPE = Chlorinated Polyethylene

PE = Polyethylene

PVC = Polyvinyl Chloride

The information here has been selected from the third edition of 'Guidelines for the Selection of Chemical Protective Clothing' published by the American Conference of Governmental and Industrial Hygienists, Inc in February 1987.