SOLVA-GARD® NITRILE GLOVES

Chemical Performance Data

This guide provides an indication of Solva-Gard nitrile glove performance upon exposure to specific chemicals. The breakthrough time indicated is the elapsed time between initial contact of the liquid chemical with the outside surface of the glove and the time at which the chemical can be detected at the inside surface of the glove with analytical equipment. The permeation rate is measured in milligrams per square meter per second. The indication of degradation resistance is determined by significant change(s) in one or more of a glove's physical properties such as swelling, texture, etc. This data was collected in a laboratory using glove materials meeting the product specifications for Solva-Gard style SG-133 (unlined) nitrile gloves. Glove thickness plays an important role in resistance to permeation and degradation. In addition, no laboratory environment can duplicate the conditions of actual use so the purchaser and user are cautioned to test all products in the appropriate application.

Key to Ratings:
E = Excellent, fluid has no effect
G = Good, fluid has minor effect
F = Fair, fluid has moderate effect
P = Poor, fluid has severe effect
ND = None detected
ID = Insufficient data

Physical characteristics of Solva-Gard Nitrile Gloves:
EXCELLENT abrasion resistance
EXCELLENT cut resistance
EXCELLENT puncture/snag resistance
EXCELLENT flexibility
GOOD heat resistance
EXCELLENT tensile strength

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
1,1, Dichloroethane	75-34-3	P	ID	ID
1,1,1 Trichloroethane (Methyl Chloroform)	71-55-6	P	41 min	76.4
1,1,1,2-Tetrachloroethane	630-20-6	ID	ID	ID
1,1,2,-Trichloroethane	79-00-5	P	ID	ID
1,1,2,2-Tetrachloroethane	79-34-5	ID	ID	ID
1,1-Dichloroethylene	75-35-4	ID	ID	ID
1,1-Difluoroethylene	75-38-7	ID	ID	ID
1,2-Dichloroethane (Ethylene Dichloride)	107-06-2	P	8 min	311
1,2-Dichloropropane	78-87-5	ID	ID	ID
1,2-Epoxy-3-Chloropropane	106-89-8	ID	ID	ID
1,2-Epoxybutane	106-88-7	ID	ID	ID
1,2-Epoxypropane	75-56-9	ID	ID	ID
1,3-Butadiene	106-99-0	ID	ID	ID
1,3-Diaminopropane	109-76-2	ID	ID	ID
1,3-Dichloropropene	542-75-6	ID	ID	ID
1,3-Dimethyl butylamine	108-09-8	ID	ID	ID
1,3-Propylene Oxide	503-30-0	ID	ID	ID
1,4-Diethylene Dioxide (1,4-Dioxane)	123-91-1	P	28 min	77.1
1,4-Dioxane (Diethylene Oxide)	123-91-1	P	28 min	77.1
1,6-Hexadiamine		ID	ID	ID
1-Bromo-2-Propanol (70%)	19686-73-8	ID	ID	ID
1-Chloro-2-Propanol	127-00-4	ID	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
1-Methyl-4-tert-butylbenzene (p-t Butyltoluene)	27138-21-2	P	ID	ID
1-Nitropropane	108-03-2	ID	16 min	29.5
1-Pentanol	71-41-0	ID	ID	ID
2,3-Dichloro-1-Propene	78-88-6	ID	ID	ID
2-Bromoethanol (95%)	540-51-2	ID	ID	ID
2-Butanone Peroxide (50%)	1338-23-4	ID	ID	ID
2-Chloro-2-Nitropropane	594-71-8	ID	ID	ID
2-Chloroethanol	107-07-3	ID	ID	ID
2-Ethoxyethanol (2-Ethylhexyl Alcohol)	110-80-5	ID	ID	ID
2-Nitropropane	79-46-9	P	ID	ID
2-Phenyl-APB-144		ID	ID	ID
2-Propanone (Acetone)	67-64-1	P	5 min	172
3-Bromo-1-Propanol (95%)	627-18-9	ID	ID	ID
3-Chloro-1-Propanol	627-30-5	ID	ID	ID
3-Chloro-2-Methylpropene (90%)	563-47-3	ID	ID	ID
3-Chloroprene (Allyl Chloride)	107-05-1	ID	ID	ID
3-Methylaminopropylamine	6291-84-5	ID	ID	ID
4-Methoxy-4-Methyl-2-Pentanone	107-70-0	ID	ID	ID
4-Vinyl-1-Cyclohexene	100-40-3	ID	ID	ID
9-Aminoacridine HC1	134-50-9	ID	ID	ID
Acetaldehyde (Ethanal)	75-07-0	P	4 min	161
Acetic Acid, Glacial	64-19-7	F	38 min	1.9
Acetic Aldehyde (Acetaldehyde)	75-07-0	P	4 min	161
Acetic Anhydride (Acetic Oxide)	108-24-7	ID	ID	ID
Acetic Ester (Ethyl Acetate)	141-78-6	P	8 min	145
Acetic Ether (Ethyl Acetate)	141-78-6	P	8 min	145
Acetone (Dimethyl Ketone)	67-64-1	P	5 min	172
Acetonitrile (Methyl Cyanide)	75-05-8	ID	ID	ID
Acetyl Chloride	75-36-5	ID	ID	ID
Acrolein (82%)	107-02-8	ID	ID	ID
Acrylic Acid	79-10-7	F	ID	ID
Acrylonitrile	107-13-1	P	3 min	176
Allylamine	107-11-9	ID	ID	ID
Ammonia (gas)	7664-41-7	ID	ID	ID
Ammonium Fluoride (40%)	12125-01-8	G	>8 hrs	ND
Ammonium Hydroxide (29%)	1336-21-6	E	2.1 hrs	0.05
Aniline (Aminobenzene)	62-53-3	F	1.1 hrs	45.0
Aniline Oil	62-53-3	F	1.1 hrs	45
Aqua Regia		ID	ID	ID
b-Ionone	14901-07-6	ID	ID	ID
Battery Acid (25%) (Sulfuric Acid)	7664-93-9	P	ID	ID
Benzaldehyde	100-52-7	P	ID	ID
Benzene	71-43-2	P	ID	ID
Benzonitrile	100-47-0	ID	ID	ID
Benzoyl Chloride	98-88-4	P	ID	ID
Bis(2-methoxyethyl) Ether	111-96-6	ID	ID	ID
Boric Acid	10043-35-3	ID	ID	ID
Bromoacetonitrile	590-17-0	ID	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
Bromobenzene	108-86-1	P	13 min	9.1
Bromodichloromethane	75-27-4	ID	ID	ID
Bromoform	72-25-2	ID	ID	ID
Butyl Acetate	123-86-4	F	29 min	54.4
Butyl Cellosolve	111-76-2	ID	ID	ID
Butyraldehyde	123-72-8	P	ID	ID
Carbon Bisulfide (Carbon Disulfide)	75-15-0	P	13 min	51
Carbon Tetrachloride (Tetrachloromethane)	56-23-5	G	3.4 hrs	5
Caustic Soda (50%) (Sodium Hydroxide)	1310-73-2	E	>6 hrs	ND
Cellosolve	110-80-5	P	ID	ID
Cellosolve Acetate	111-15-9	ID	ID	ID
Chloral	75-87-6	ID	ID	ID
Chlorine	7782-50-5	ID	ID	ID
Chloroacetic Acid	79-11-8	ID	ID	ID
Chloroacetonitrile	107-14-2	ID	ID	ID
Chlorobenzene	108-90-7	P	ID	ID
Chlorodibromomethane	124-48-1	ID	ID	ID
Chloroethene (Vinyl Chloride)	75-01-4	ID	5.7 hrs	0.14
Chloroethylene (Vinyl Chloride)	75-01-4	ID	5.7 hrs	0.14
Chloroform (Methenyl Trichloride)	67-66-3	P	4 min	352
Chloronaphthalene	90-13-1	P	2.9 hrs	>1.32
Chloroprene (2-Chlorobutadiene-1,3)	126-99-8	ID	ID	ID
Chlorotrimethylsilane	75-77-4	ID	ID	ID
cis,trans-1,2-Dichloroethylene	540-59-0	ID	ID	ID
cis-Dichloroethylene	156-59-2	ID	ID	ID
Crotonaldehyde (83%)	4170-30-3	ID	ID	ID
Cyclohexane (Hexahydorbenzene)	110-82-7	P	ID	ID
Cyclohexanol (Hexahydrophenol)	108-93-0	E	>16 hrs	ND
Cyclohexanone (Ketohexamethylene)	108-94-1	P	ID	ID
Cyclohexylamine	108-91-8	ID	ID	ID
d-Limonene	5989-27-5	ID	ID	ID
Di(2-ethylhexyl)phthalate (dioctyl phthalate)	117-81-7	ID	>8 hrs	ND
Di-n-Amylamine	2050-92-2	ID	ID	ID
Di-n-Butylamine	111-92-2	ID	ID	ID
Diallylamine	124-02-7	ID	ID	ID
Dibasic Ester	53-60-5	ID	ID	ID
Dibutylphthalate	1719-53-5	E	>16 hrs	ND
Dichloroacetylchloride	79-36-7	ID	ID	ID
Dichloromethane (Methylene Chloride)	75-09-2	P	4 min	766
Diethanolamine	111-42-2	ID	ID	ID
Diethyl Ether (Ethyl Ether)	60-29-7	P	14 min	21.8
Diethyl Oxide (Ethyl Ether)	60-29-7	P	14 min	21.8
Diethylamine	109-89-7	F	ID	ID
Diethylaminoethanol	100-37-8	E	>8 hrs	ND
Diethylene Ether (1,4-Dioxane)	123-91-1	P	28 min	77.1
Diethylene Oxide (1,4-Dioxane)	123-91-1	P	28 min	77.1
Diethylenetriamine	111-40-1	P	ID	ID
Diglycidyl Ether of Bisphenol A (DGEBA)	391-46-9	ID	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
Diisobutyl Ketone (80%)	108-83-8	F	3 hrs	48.9
Diisobutylamine	110-96-3	ID	ID	ID
Diisopropylamine	108-18-9	ID	ID	ID
Dimethyl Acetamide	127-19-5	ID	ID	ID
Dimethyl Formamide (DMF)	68-12-2	F	13 min	>15
Dimethyl Sulfoxide	67-68-5	F	40 min	5.2
Dimethylamine	124-40-3	ID	ID	ID
Dimethylaminopropylamine	109-55-7	ID	ID	ID
Dimethylethanolamine	108-01-0	ID	ID	ID
Dimethylketone (Acetone)	67-64-1	P	5 min	172
Dimethylvinylchloride	513-37-1	ID	ID	ID
Dioctyl Phthalate	117-81-7	E	>8 hrs	ND
Dioxyethylene Ether (1,4-Dioxane)	123-91-1	P	28 min	77.1
Divinyl Benzene (Vinylstyrene)	1321-74-0	P	ID	ID
Epibromohydrin	3132-64-7	ID	ID	ID
Epichlorohydrin	106-89-8	P	ID	ID
EREM Solvent		ID	ID	ID
Ethanal (Acethaldehyde)	75-07-0	P	4 min	161
Ethanol (Ethyl Alcohol)	64-17-5	ID	ID	ID
Ether		P	14 min	21.8
Ethyl Acetate (Acetic Ester)	141-78-6	P	8 min	145
Ethyl Acrylate	140-88-5	ID	ID	ID
Ethyl Alcohol (Ethanol)	64-17-5	ID	ID	ID
Ethyl Aldehyde (Acetaldehyde)	75-07-0	P	4 min	161
Ethyl Ether (Ethyl Oxide)	60-29-7	P	14 min	21.8
Ethyl-n-Butylamine	13360-63-9	ID	ID	ID
Ethylamine (70% in water) (Aminoethane)	75-04-7	F	1.1 hrs	30.1
Ethylbromide	74-96-4	ID	ID	ID
Ethylene Dibromide	106-93-4	P	ID	ID
Ethylene Dichloride (1,2-Dichloroethane)	107-06-2	P	8 min	311
Ethylene Glycol Monoethyl Ether	110-80-5	ID	ID	ID
Ethylene Glycol Monoethyl Ether Acetate	111-15-9	ID	ID	ID
Ethylene Oxide	75-21-8	ID	ID	ID
Ethylenediamine	107-15-3	ID	ID	ID
Ethylmethacrylate	97-63-2	ID	ID	ID
Formaldehyde (37% in water) (Formic Aldehyde)	50-00-0	E	>21 hrs	ND
Freon TF	76-13-1	ID	>6 hrs	ND
Freon TMC		ID	ID	ID
Furan	110-00-9	P	ID	ID
Furfural (Furfuraldehyde)	98-01-1	P	28 min	265
Glutaraldehyde (25%)	111-30-8	P	ID	ID
Glutaraldehyde (7%)	111-30-8	P	4 min	0.44
Glycol Ether (Dowanol)		ID	ID	ID
Halothane	151-67-7	ID	ID	ID
Hexachlorocyclopentadiene	77-47-4	ID	ID	ID
Hexahydrobenzene (Cyclohexane)	110-82-7	P	ID	ID
Hexahydrophenol (Cyclohexanol)	108-93-0	E	>16 hrs	ND
Hexamethyldisilazane	999-97-3	ID	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
Hexamethylene (Cyclohexane)	110-82-7	P	ID	ID
Hexanaphthene (Cyclohexane)	110-82-7	P	ID	ID
Hydrazine (70% in water)	302-01-2	E	>8 hrs	ND
Hydrazine Hydrate	10217-52-4	ID	ID	ID
Hydrochloric Acid (37%)	7647-01-0	G	>6 hrs	ND
Hydrofluoric Acid (48%)	7664-39-3	F	1 hr	0.49
Hydrogen Chloride (gas)	7647-01-0	ID	ID	ID
Hydrogen Peroxide (30%)	7722-84-1	ID	ID	ID
Iminobispropylamine	56-18-8	ID	ID	ID
Iodomethane (Methyl Iodide)	74-88-4	ID	ID	ID
Isoamylnitrile	110-46-3	ID	ID	ID
Isobutyl Acrylate	106-63-8	ID	ID	ID
Isobutyl Alcohol	78-83-1	G	>8 hrs	ND
Isobutyl Nitrite	542-56-3	ID	ID	ID
Isobutylamine	78-81-9	ID	ID	ID
Isobutyraldehyde	78-84-2	P	ID	ID
Isoprene	78-95-5	ID	ID	ID
Isopropyl Alcohol	67-63-0	E	>6 hrs	ND
Isopropylmethacrylate	4655-34-9	ID	ID	ID
Ketohexamethylene (Cyclohexanone)	108-94-1	P	ID	ID
m-Xylene	108-38-3	ID	ID	ID
Methacrylic Acid	79-41-4	P	1.7 hrs	23
Methacrylonitrile	126-98-7	P	7 min	560
Methanol	67-56-1	ID	32 min	11.8
Methenyl Trichloride (Chloroform)	67-66-3	P	4 min	352.0
Methyl Alcohol	67-56-1	ID	32 min	11.8
Methyl Cellosolve	109-86-4	F	55 min	13.2
Methyl Chloride	74-87-3	ID	ID	ID
Methyl Chloroform	71-55-6	P	41 min	76.4
Methyl Cyanide (Acetonitrile)	107-13-1	ID	ID	ID
Methyl Ethyl Ketone	78-93-3	P	ID	ID
Methyl Eugenol	93-15-2	ID	ID	ID
Methyl Iodide	74-88-4	ID	ID	ID
Methyl Isocyanate	624-83-9	P	ID	ID
Methylacetate	79-20-9	ID	ID	ID
Methylacrylate	96-33-3	ID	ID	ID
Methylamine (40% in water) (Aminomethane)	74-89-5	E	>8 hrs	ND
Methylbenzene (Toluene)	108-88-3	P	11 min	68.1
Methylene Chloride (Dichloromethane)	75-09-2	P	4 min	766
Methylmethacrylate	80-62-6	ID	ID	ID
Monoethanolamine	141-43-5	ID	ID	ID
Monoisopropaxidamine (95%)		ID	ID	ID
Monoisopropylamine	78-96-6	ID	ID	ID
Morpholine	110-91-8	P	48 min	206
n,n,n,n-Tetramethylenediamine	110-18-9	ID	ID	ID
n-Butylamine	109-73-9	ID	ID	ID
n-Butylchloride	109-69-3	ID	ID	ID
n-Hexane	110-54-3	E	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
n-Methyl-2-Pyrrolidone	872-50-4	ID	ID	ID
n-Methylethanolamine	109-83-1	ID	ID	ID
n-Pentane (Alpha-n-Amylene)	109-66-0	E	ID	ID
n-Propyl Acetate	109-60-4	P	17 min	72.5
n-Propylmethacrylate	2210-28-8	ID	ID	ID
Nicotine	54-11-5	ID	ID	ID
Nitric Acid (17.5%) (Aqua Fortis)	7697-37-2	P	ID	ID
Nitric Acid (40%)	7697-37-2	F	>6 hrs	ND
Nitrobenzene	98-95-3	F	33 min	1.7
Nitroethane	79-24-3	ID	ID	ID
Nitromethane	75-52-5	ID	ID	ID
O-Xylene	95-47-6	ID	ID	ID
Octanoic Acid	127-07-2	ID	ID	ID
Oleic Acid	112-80-1	ID	ID	ID
Ortho Toluidine	95-53-4	ID	ID	ID
Oxalic Acid	144-62-7	G	ID	ID
Oxide Etch		ID	ID	ID
p-Dioxane (1,4-Dioxane)	123-91-1	ID	ID	ID
p-t Butyltoluene (1-Methyl-4-tert-Butylbenzene)	98-51-1	P	ID	ID
p-Xylene	106-42-3	ID	ID	ID
PCB (Aroclor 1254 50%) enyl)	11097-69-1	F	32 min	ID
Pentachlorophenol (1% in kerosene)	87-86-5	E	>13 hrs	ND
Peracetic Acid (40% in water)	79-21-0	ID	ID	ID
Perchloric Acid (70%)	7601-90-3	P	>8 hrs	ND
Perchloroethylene (Tetrachloroethylene)	127-18-4	F	1.3 hrs	5.5
Perchloromethane (Carbon Tetrachloride)	56-23-5	F	3.4 hrs	5.0
Phenol (85% in water)	108-95-2	P	39 min	>1500
Phenylamine (Aniline)	62-53-3	F	1.1 hrs	45
Phosphoric Acid (85%)	7664-38-2	G	>8 hrs	ND
Pimelic Ketone (Cyclohexanone)	108-94-1	P	ID	ID
Potassium Hydroxide (50%)	1310-58-3	E	>6 hrs	ND
Propionaldehyde	123-38-6	ID	ID	ID
Propionitrile	107-12-0	ID	ID	ID
Propyl Acetate	109-60-4	P	17 min	72.5
Propyl Alcohol	71-23-8	G	4.4 hrs	1.1
Propylene Dichloride	78-87-5	ID	ID	ID
Propylenediamine	78-90-0	F	ID	ID
Pyridine	110-86-1	P	ID	ID
Red Fuming Nitric Acid (RFNA)	52583-42-3	P	ID	ID
sec-Butylamine	13952-84-6	ID	ID	ID
Slope Etch		ID	ID	ID
Sodium Hydroxide 50% (Caustic Soda)	1310-73-2	E	>6 hrs	ND
Stoddard Solvent	8052-41-3	E	>6 hrs	ND
Styrene	100-42-5	P	ID	ID
Sulfuric Acid (25%) (Hydrogen Sulfate)	7664-93-9	P	ID	ID
Sulfuric Acid (50%)	7664-93-9	E	>6 hrs	ND
Sulfuric Ether (Ethyl Ether)	60-29-7	P	14 min	21.8
t-Butylamine	75-64-9	ID	ID	ID

Chemical Name	CAS Number	Degradation Rating	Breakthrough Time	Permeation Rate
tert-Butyl Alcohol	75-65-0	ID	ID	ID
tert-Butyl Methyl Ether	1634-04-4	ID	ID	ID
Tetrachloroethylene	127-18-4	F	1.3 hrs	5.5
Tetrachloromethane (Carbon Tetrachloride)	56-23-5	F	3.4 hrs	5.0
Tetraethylenepentamine	112-57-2	F	ID	ID
Tetrafluoroethylene	116-14-3	ID	ID	ID
Tetrahydrofuran (THF)	109-99-9	P	4 min	167
Thioglycolic Acid	68-11-1	ID	ID	ID
Thiophene	110-02-1	P	ID	ID
Toluene (Methylbenzene)	108-88-3	P	11 min	68.1
Toluene Diisocyanate (TDI)	26471-62-5	G	3.7 hrs	1.8
trans-1,2-Dichloroethylene	156-60-5	ID	ID	ID
tri-n-propylamine	102-69-2	ID	ID	ID
Triallyamine	102-70-5	ID	ID	ID
Trichloroacetaldehyde		ID	ID	ID
Trichloroacetonitrile	545-06-2	ID	ID	ID
Trichloroethylene (TRI)	79-01-6	P	8 min	283
Trichloromethane (Chloroform)	67-66-3	P	4 min	352.0
Triethanolamine	102-71-6	ID	ID	ID
Triethylamine	121-44-8	E	>8 hrs	ND
Triethylenetetramine	112-24-3	ID	ID	ID
Tritolyl Phosphate	1330-78-5	ID	ID	ID
Valeronitrile	110-59-8	ID	ID	ID
Vinegar Naphtha (Ethyl Acetate)	141-78-6	P	8 min	145
Vinyl Acetate	108-05-4	ID	ID	ID
Vinyl Chloride (Chloroethene)	75-01-4	G	5.7 hrs	0.14
Vinylidene Fluoride	75-38-7	ID	ID	ID
Vinylstyrene (Divinyl Benzene)	1321-74-0	P	ID	ID
Witch Hazel	68916-39-2	ID	ID	ID
Xylene (mixed)	1330-20-7	F	21 min	18.5