



ChemMaster

Neoprene over Natural rubber

Black palm blue cuff

26 mils, 12 in long

flock lining, tractor tread grip

Chemical	CAS NUMBER	Deg @ Min	Total Immersion BDT in minutes	Intermittent contact BDT in minutes
Acetaldehyde	75-07-0	E	7	9
Acetic Acid 84%	64-19-7	E	>480	>240
Acetone	67-64-1	E	13	17
Acetonitrile	75-05-8	E	4	15
Acetoxy Acetyl Chloride	13831-31-7	NT	NT	NT
Acrylamide 50%	79-06-1	E	>480	>240
Acrylic Adhesive	NA	NT	2	NT
Acrylonitrile	107-13-1	E	8	16
Aeroshell Grease 22	NA	E	>480	>240
Alkaline Cleaner 3 Part Solution	Mixture	E	>480	>240
Alkasol 27	Mixture	E	>480	>240
Alodine 1000 Solution	NA	NT	>480	>240
Alodine 1200S Solution	NA	NT	>480	>240
Alvania Grease 3	NA	E	>480	>240
Allyl Alcohol	107-18-6	E	49	49
Ammonia (Gas)	7664-41-7	NT	NT	NT
Ammonium Hydroxide 29%	1336-21-6	E	>480	>240
Amyl Acetate	628-63-7	P	NR	32
Amyl Alcohol	71-41-0	E	>480	>240
Anhydrous Ammonia (GAS)	7664-41-7	NT	>480	>240
Aniline	62-53-3	NT	NR	>240
Antimony Tributyrat	53856-17-0	E	>480	>240
Anydrous Hydrazine: Formula N2H4	Mixture	NT	15	NT
Aqua Regia	8007-56-5	E	>480	>240
Barsol Solvent	Mixture	NT	19	NT
Battery Acid	7664-93-9	E	>480	>240
Benzaldehyde	100-52-7	P	NR	44
Benzene	71-43-2	NR	NR	9
Blasocut 2000 Universal	Mixture	E	>480	>240
Blasocut 4000 Universal	Mixture	E	>480	>240
Bromoform	75-25-2	NR	NR	16
Butadiene,1-3,(GAS)	106-99-0	NT	NT	NT
Butanol	71-36-3	E	125	130
Butoxyethanol-2	111-76-2	E	>480	>240
Butoxypropanol	5131-66-8	E	123	>240
Butoxytriglycol	143-22-6	E	>480	>240



	ChemMaster	Deg @	Total	Intermittent
		60	Immersion	contact
	cas #	Min	BDT in Min	BDT in Min
Butyl Acetate	123-86-4	P	NR	21
Butyl Acrylate	141-32-2	NR	20	20
Butyl Carbitol Solvent	112-34-5	E	99	>240
Butyl Cellosolve Acetate	112-07-2	E	>480	>240
Butyl Cellosolve Solvent	111-76-2	E	>480	>240
Butyl Dipropasol Solvent	29911-28-2	E	>480	>240
Butyl Ethylene	592-41-6	G	15	NT
Butyl Propasol Solvent	5131-66-8	E	123	>240
Butylamine	109-73-9	P	NR	NT
Butyl Toluene P-tert	98-51-1	P	NR	NT
CA-109 Activator	Mixture	P	17	NT
Caprinus U Multigrade Railroad Oil	Mixture	E	>480	>240
Carbitol Acetate	112-15-2	E	>480	>240
Carbolic Acid	108-95-2	NT	19	>240
Carbon Disulfide	75-15-0	NT	NT	NT
Carbon Tetrachloride	56-23-5	NR	NR	>240
Caustic Potash 45%	1310-58-3	E	>480	>240
Caustic Soda 50k%	1310-73-2	E	>480	>240
Cellsolve Acetate	110-80-5	G	31	52
Chevron HYJET IV-A plus	Mixture	E	NT	NT
Chevron JET Fuel A	Mixture	E	28	NT
Chlorine (Gas)	7782-50-5	NT	NT	NT
Chlorobenzene	108-90-7	NR	NR	8
Chloroform	67-66-3	NR	NR	10
Chromic Acid 50%	1333-82-0	E	>480	>240
Chromium Trioxide	1333-82-0	E	>480	>240
Citra-Safe Deodorized	Mixture	NR	39	NT
Citric Acid 30%	77-92-9	E	>480	>240
Citrus Terpenes Mixture	68956-56-9	G	81	>240
Cresols	1319-77-3	E	>480	>240
Cresylic Acid	1319-77-3	E	>480	>240
Cumene	98-82-8	NR	17	22
Cyclohexane	110-82-7	P	NR	33
Cyclohexanol	108-93-0	E	>480	>240
Cyclohexanone	108-94-1	P	NR	33
Daraclean 282	Mixture	E	>480	>240
Deoxidizer 16 Replenisher	Mixture	E	>480	>240
Desoclean 45	Mixture	G	11	NT
Dexter Corp. 454-4-1	Mixture	P	5	NT
Diacetone Alcohol	123-42-4	E	88	>240
Dibutyl Phthalate-n	84-74-2	E	>480	>240
Dichlorobenzen O-	95-50-1	NR	NR	>240
Dichloroethane- 1,2	107-06-2	NR	NR	>240
Dichlorofluoroethane	1717-00-6	P	NR	>240



	ChemMaster	Deg @	Total	Intermittent
	cas #	60	Immersion	contact
		Min	BDT in Min	BDT in Min
Dichloromethane	75-09-2	NR	NR	>240
Diesel Fuel	77650-28-3	E	>480	>240
Diethanolamine	111-42-2	E	>480	>240
Diethylamine	109-89-7	P	NR	>240
Diethylene Glycol	111-46-6	E	>480	>240
Diethylene Glycol Monobutyl Ether	112-34-5	E	99	>240
Diethylene Glycol Monoethyl Ether	112-59-4	E	>480	>240
Diethylene Glycol Monomethyl Ether	111-77-3	E	>480	>240
Diethylene Glycol Monopropyl Ether	6881-94-3	E	>480	>240
Diethylene Oxide	123-91-1	P	NR	21
Diisobutyl Ketone	108-83-8	E	122	>240
Dimethyl Sulfate	77-78-1	E	>480	>240
Dimethyl-2,6 -Heptanone	108-83-8	E	122	>240
Dimethylacetamide	127-19-5	E	>480	>240
Dimethylformamide	68-12-2	E	>480	>240
Dimethylhydrazine: Formula C2H8N2	NA	NT	15	NT
Dimethylsulfoxide	67-68-5	E	>480	>240
Dinitrol AV30	Mixture	E	>480	>240
Dinitrol AV8	Mixture	E	>480	>240
Dinitrotoluene-2,4 (40% in ROH)	121-14-2	E	>480	>240
Dioxane-1,4	123-91-1	P	NR	>240
Diphenylmethane Diisocyanate (MDI)	NA	NT	NT	NT
Dipropasol Glycol Monobutyl Ether	29911-28-2	E	>480	>240
Dipropylene Glycol Monobutyl Ether	29911-28-2	E	>480	>240
Dipropylene Glycol Monopropyl Ether	29911-27-1	NT	NT	NT
Divinyl Benzene	1321-74-0	NR	NR	>240
Donaz TG Transmission Fluid	Mixture	E	>480	>240
Dowtherm, Biphenyl	92-52-4	P	NR	>240
Dubl-Check Penetrants HM406	Mixture	E	>480	>240
Dubl-Check Penetrants HM604	Mixture	E	>480	>240
Epichlorohydrin	106-89-8	G	21	28
Ethanol	64-17-5	E	79	>240
Ethanolamine	141-43-5	E	>480	>240
Ethoxyethanol-2	110-80-5	G	31	52
Ethoxytriglycol	112-50-5	E	>480	>240
Ethyl Acetate	141-78-6	F	8	30
Ethyl Benzene	100-41-4	NR	NR	13
Ethyl Butanol	97-95-0	E	>480	>240
Ethyl Ether	60-29-7	F	7	11
Ethylene Glycol	107-21-1	E	>480	>240
Ethylene Glycol Ether	110-80-5	G	31	52
Ethylene Glycol Monobutyl Ether	111-76-2	E	>480	>240
Ethylene Glycol Monoethyl Ether	112-25-4	E	>480	>240
Ethylene Glycol Monopropyl Ether	2807-30-9	E	>480	>240



	ChemMaster	Deg @	Total	Intermittent
		60	Immersion	contact
	cas #	Min	BDT in Min	BDT in Min
Ethylene Oxide (GAS)	75-21-8	NT	NT	NT
Ethylenediamine	107-15-3	E	>480	>240
FCC-55 (Proprietary)	NA	P	9	NT
Fire & Ice 2000 10W40 Motor Oil	NA	E	>480	>240
Fluoboric Acid	16872-11-0	E	>480	>240
Formaldehyde 37%	50-00-0	E	>480	>240
Formic Acid 90%	64-18-6	E	>480	>240
Freon 113	76-13-1	E	>480	>240
Furfural	98-01-1	E	>480	>240
Gasoline (unleaded)	8006-61-9	P	NR	24
Genetron 123	NA	NT	18	NT
Gloss HS Epoxy Catalyst	NA	E	57	NT
Glutaraldehyde 50%	111-30-8	E	>480	>240
Glyphosate Roundup	1071-83-6	NT	NT	NT
Heptane	142-82-5	E	34	50
Hexane	110-54-3	E	24	30
Hexene	592-41-6	G	15	NT
Hexyl Carbitol Solvent	112-59-4	E	>480	>240
Hexyl Cellosolve Solvent	112-25-4	E	>480	>240
HFC-245fa	460-73-1	NT	30	NT
Hydrazine Hydrate 85%	302-01-2	NT	>480	>240
Hydrochloric Acid 10%	7647-01-0	E	>480	>240
Hydrochloric Acid 37%	7647-01-0	E	>480	>240
Hydrofluoric Acid 48%	7664-39-3	NT		
Hydrogen Chloride (GAS)	7647-01-0	E	>480	>240
Hydrogen Fluoride(GAS)	7664-39-3	NT	NT	NT
Hydrogen Peroxide 30%	7722-84-1	E	>480	>240
H.S. Epoxy BAC 702 Off White	Mixture	G	24	NT
Iodomethane	74-88-4	NR	NR	1
Isoamyl Acetate	123-92-2	NR	NR	25
Isoamyl Alcohol	123-51-3	E	120	126
Isobutanol	78-83-1	E	117	>240
Isooctane	540-84-1	E	151	>240
Isopropanol	67-63-0	E	111	>240
Isopropyl Acetate	108-21-4	P	15	22
Jet Fuel JP-8	Mixture	E	127	NT
JP-4	Mixture	G	24	NT
Kerosene	8008-20-6	G	87	>240
KOH 45%	1310-58-3	E	>480	>240
Lacquer Thinner Acme #305	Mixture	NT	NT	NT
Lacquer Thinner Acme #887	Mixture	NT	NT	NT
Lacquer Thinner EZ Brand	Mixture	NT	NT	NT
Lacquer Thinner RK22	Mixture	NT	NT	NT
Lauric Acid (30% ETOH)	143-07-7	E	>480	>240



	ChemMaster	Deg @	Total	Intermittent
	cas #	60	Immersion	contact
		Min	BDT in Min	BDT in Min
Limonene-d	5989-27-5	NR	NR	>240
Madrella P 150	Mixture	E	>480	>240
MEK/SBA	Mixture	E	15	NT
Methanol	67-56-1	NR	34	45
Methoxytriglycol	112-35-6	E	>480	>240
Methyl Acetate	79-20-9	G	8	14
Methyl Carbitol Solvent	111-77-3	E	>480	>240
Methyl Cellosolve	110-80-5	G	31	52
Methyl Chloride (GAS)	74-87-3	NT	NT	NT
Methyl Chloroform	71-55-6	NR	NR	22
Methyl Ethyl Ketone	78-93-3	F	11	14
Methyl Ethyl Ketoxime	96-29-7	E	>480	>240
Methyl Iodide	74-88-4	NR	NR	1
Methyl Isobutyl Ketone	108-10-1	P	NR	36
Methyl Isobutyl Ketoxime	105-44-2	E	>480	>240
Methyl Methacrylate	80-62-6	NR	NR	34
Methyl Propasol Solvent	107-98-2	NT	NT	NT
Methyl Propyl Ketone	107-87-9	P	12	NT
Methylamine 40%	74-89-5	E	>480	>240
Methylene Chloride	75-09-2	NR	NR	7
Methylenedianiline-4,4	101-77-9	NR	NT	NT
Methyl-Tert Butyl Ether	1634-04-4	P	NR	14
Microcut 26	Mixture	E	>480	>240
Mineral Oil	8012-95-1	NT	NT	NT
Mineral Spirits	64475-85-0	E	88	91
Monomethylhydrazine: Formula CH6N2	NA	NT	15	NT
Morpholine	110-91-8	NT	50	78
m-Toluenediamine (liquid form)	NA	NT	360	NT
m-Toluenediamine (solid form)	NA	NT	NT	NT
Muriatic Acid	7647-01-0	E	>480	>240
Naphtha (Petroleum)	8032-32-4	E	20	>240
Naphtha, VM&P	64475-85-0	E	88	91
Nitric Acid 23%	7697-37-2	E	>480	>240
Nitric Acid 70%	7697-37-2	E	>480	>240
Nitric /Hydrofluoric Pickle Solution	Mixture	E	>480	>240
Nitro Propane	79-46-9	E	27	30
Nitrobenzene	98-95-3	P	NR	35
Nitromethane	75-52-5	E	29	37
Nitropropane-2	79-46-9	E	27	30
N-Methyl Pyrrolidone	872-50-4	E	>480	>240
n-Octanol	111-87-5	E	>480	>240
n-Propanol	71-23-8	E	111	123
Nycote 7-11	Mixture	E	55	NT
Oleic Acid 98%	112-80-1	E	>480	>240



	ChemMaster	Deg @	Total	Intermittent
		60	Immersion	contact
	cas #	Min	BDT in Min	BDT in Min
Olive Oil	8001-25-0	NT	>480	>240
O-Toluidine	95-53-4	F	>480	>240
OxyBisbenzene,1,1-(Dowtherm)	101-84-8	P	NR	NR
PCBs 50% (Aroclor 1254/TCB)	11097-69-1	NT	NT	NT
Pentachlorophenol	87-86-5	NT	>480	>240
Pentane	109-66-0	E	7	37
Pentanone-2	108-10-1	P	NR	36
Perchlorethylene	127-18-4	NR	NR	32
Petroleum Ether	8032-32-4	E	20	>240
Phenol	108-95-2	NT	19	>240
Phosphoric Acid 85%	7664-38-2	E	>480	>240
Phthalic Acid Dibutyl Ester	84-74-2	NT	NT	NT
Potassium Hydroxide 45%	1310-58-3	E	>480	>240
Propanol-2	67-63-0	E	111	>240
Propetamphos (50% in ROH)	31218-83-4	NT	NT	NT
Propoxy Diethylene Glycol	6881-94-3	E	>480	>240
Propoxypropanol	1569-01-3	E	>480	>240
Propyl Acetate	109-60-4	P	NR	14
Propyl Carbitol Solvent	6881-94-3	E	>480	>240
Propyl Cellosolve Solvent	2807-30-9	E	>480	>240
Propyl Dipropasol Solvent	2807-30-9	E	>480	>240
Propyl Propasol Solvent	1569-01-3	E	>480	>240
Propylene Glycol	57-55-6	E	>480	>240
Propylene Glycol Monomethyl Ether	107-98-2	NT	NT	NT
Propylene Glycol Monopropyl Ether	1569-01-3	E	>480	>240
Propylene Oxide	75-56-9	F	6	38
Pyridine	7291-22-7	P	NR	15
Refrigerant 123A	306-83-2	NT	NT	NT
Refrigerant 141B	1717-00-6	P	NR	NT
Simple Green	Mixture	E	>480	>240
Skydrol 500 B-4	126-73-8	E	>480	>240
Skydrol LD-4	2528-36-1	G	NR	NT
Sodium Hydroxide 50%	1310-73-2	E	>480	>240
Sodium Hypochlorite 4-6%	7681-52-9	E	>480	>240
Solvent Oxygenated Hydrocarbon Blend	Mixture	NR	6	NT
Stoddard Solvent	8052-41-3	E	111	139
Styrene	100-42-5	NR	NR	10
Sulfuric Acid 47%	7664-93-9	E	>480	>240
Sulfuric Acid 97%	7664-93-9	E	>480	>240
Tetrachloroethylene	127-18-4	NR	NR	32
Tetrahydrofuran	109-99-9	NR	NR	9
Toluene	108-88-3	NR	NR	10
Toluene Diisocyanate	584-84-9	NT	NT	NT
Toluene / MEK (65:35)	Mixture	NR	8	NT



	ChemMaster	Deg @	Total	Intermittent
		60	Immersion	contact
	cas #	Min	BDT in Min	BDT in Min
Trichlorobenzene-1,2,4	120-82-1	NR	NR	30
Trichloroethane-1,1,1	71-55-6	NR	NR	22
Trichloroethylene	79-01-6	NR	NR	5
Trichlorotrifluoroethane	76-13-1	E	70	86
Tricresyl Phosphate	1330-78-5	E	>480	>240
Triethanolamine	120-71-6	E	>480	>240
Turco 5351	Mixture	NR	12	NT
Turpentine	8006-64-2	NT	43	68
Ucon Quenchant A-RO @ 22%	Mixture	E	>480	>240
Ucon Quenchant A-RO @ 34%	Mixture	E	>480	>240
Vegetable Oil	8001-30-7	NT	NT	NT
Vinyl Acetate	108-05-4	NR	8	14
Vinyl Benzene	100-42-5	NR	NR	10
Vinyl Chloride (GAS)	75-01-4	NT	NR	NT
Vinyl Styrene	1321-74-0	NR	NR	72
Vinylidene Chloride	75-35-4	NR	NR	6
Xylene	1330-20-7	NR	NR	14
Xylol	Mixture	NT	NT	NT

Permeation and Degradation Legend and Explanantion

Chemical Permeation is the act of a chemical passing through a solid material like personal protective clothing on a molecular level, and is measured by test standards designed by the ASTM.

ASTM, or American Society of Testing and Materials have two test in which to test Personal Protective Equipment against chemicals: F-739 and F-1383.

ASTM F739 is an eight hour total immersion contact test to measure the length of time for a chemical to permeate personal protective equipment / clothing. ASTM F1383 - A four hour intermittent contact test to measure the length of time for a chemical to permeate personal protective equipment / clothing with a repeated exposure of one minute of immersion every ten minutes.

Degradation is a physical change in a glove material that occurs after exposure to chemicals. The effects of degradation may include (but not limited to) swelling, wrinkling, deterioration, discoloration or delamination. There are no single accepted test standard for measuring degradation. Showa gloves were tested for degradation using a protocol considered by the American Society for Testing and Materials (ASTM) F23 Protective Clothing Committee. The percent weight change was measured gravimetrically after 60 minutes. The ratings were assigned as follows:

Weight change: 0-10% = Excellent, 11-20% = Good, 21-30% = Fair, 31-50% = Poor, >50% = NR (not recommended)

NT= not tested, BDT= breakthrough detection time (reported in minutes)

BDT=breakthrough dection time (reported in minutes, NR = immediate breakthrough time)

Ttl = total immersion contact, Int = intermittent exposure contact, DEG = degradation