

Chemical resistance guide

Flexible metallic conduit

T&B Liquidtight Systems™

This information is provided as a guideline only. No guarantee is implied. Results are based on controlled laboratory tests and not on installed end-product applications. ABB recommends that samples be exposed and observed in actual service conditions for extreme or unusual situations.

Chemical Resistance Table

A – Excellent to Good B – Good to Fair C – Fair to Limited D – Unsatisfactory PVC – Polyvinyl Chloride PU – Polyurethane

Chemical	%	PVC	PU
A			
Acetaldehyde	40%	D	D
Acetate Solvents		D	
Acetic Acid	40%	D	
Acetic Acid	10%	B	
Acetic Acid (Glacial)		C	D
Acetic Anhydride		D	D
Acetone		D	D
Acetyl Bromide		C	
Acetyl Chloride		C	
Acetylene		B	
Acrylonitrile		A	
Adipic Acid		A	
Alcohols (aliphatic)		C	
Alkalies		A	
Aluminum Chloride		A	B
Aluminum Salts			
Aluminum Sulfate (Alums)		A	B
Aluminum Sulfide			B
Ammonia		B	
Ammonia (Anhydrous Liquids)		D	
Ammonia (aqueous)		A	
Ammoniated Latex		A	
Ammonium Acetate		B	
Ammonium Carbonate		B	
Ammonium Chloride		A	
Ammonium Hydroxide		A	A
Ammonium Nitrate		B	
Ammonium Persulfate		B	
Ammonium Sulfate		B	
Ammonium Sulfide		B	
Ammonium Thiocyanide		B	
Amyl Acetate		D	D
Amyl Alcohol		C	
Amyl Chloride		C	
Aniline		D	
Aniline Hydrochloride		D	
Aniline Oils		B	
Animal Fats & Oils		A	B
Anthracene		D	
Antimony Salts		B	
Aromatic Fuels		D	
Aromatic Hydrocarbons		D	
Asphalt		D	
ASTM Fuel A		C	A
ASTM Fuel B		D	B
ASTM Fuel C			B
ASTM Oil No. 1		B	B
ASTM Oil No. 2			B
ASTM Oil No. 3		C	B
Attar of Roses			

Chemical	%	PVC	PU
B			
Banana Oil		D	
Barium Carbonate			B
Barium Chloride		A	
Barium Hydroxide		A	B
Barium Sulfide		A	
Benzaldehyde			D
Benzene		D	D
Benzine (Petroleum Ether)		C	B
Benzoic Acid			C
Borax		A	
Bordeaux Mixture		A	
Boric Acid		A	B
Brake Fluid A			B
Brine		A	
Bromine			B
Bunker Oil			B
Butane			B
Butyl Acetate		D	D
Butyl Alcohol		B	B
C			
Calcium Carbonate			B
Calcium Chloride	20%	A	B
Calcium Hydroxide		A	B
Calcium Hypochlorite		A	
Calcium Nitrate			B
Calcium Sulfate			B
Carbolic Acid (Phenol)		B	
Carbon Dioxide		A	A
Carbon Disulfide		D	B
Carbon Tetrachloride		D	D
Carbolic Acid		A	
Casein		A	
Castor Oil		A	B
Caustic Soda	40%	A	
Cello-Solv		D	
Chlorinated Hydrocarbons			B
Chlorine			B
Chlorine (water solution)	< 5%	C	
Chlorine Gas (dry & wet)	< 5%	D	
Chloroacetic Acid			C
Chlorobenzene		D	
Chloroform			D
Chromic Acid	1%		D
Chromic Acid	10%	B	D
Chromium Potassium Sulfate			B
Citric Acid		A	B
Coal Tar		D	

Chemical	%	PVC	PU
D			
Coconut Oil		C	
Corn Oil		A	
Cottonseed Oil		C	B
Creosote		D	
Cresol		C	D
Cresylic Acid		D	
Cupric Chloride			B
Cupric Nitrate			B
Cupric Sulfate			B
Cyclohexane		B	
Cyclohexanone			D
D			
DDT Weed Killer		A	
Degreasing Fluids		D	
Di Iso Cyante		C	
Di Methyl Formamide		D	
Di Methyl Hydrazine		D	
Dibutyl Ether			B
Dibutyl Phthalate		D	D
Dichlorobenzene			C
Diesel Fuel		D	B
Diesel Oils		C	
Diester Oil			B
Diethyl Ether		A	
Diethylene Glycol		B	
Di-isodecyl Phthalate		D	
Dimethyl Acetamide			D
Dimethyl Formamide			D
Dioctyl Phthalate		D	
Dodecyl Mercaptan			B
DOP		D	
Dow General Weed Killer (H ₂ O)		B	
Dow General Weed Killer (Phenol)		D	
Dowtherm		D	
DTE Oil			B
E			
Esters		D	
Ether		D	B
Ethyl Acetate			D
Ethyl Alcohol		C	B
Ethyl Bromide			C
Ethyl Chloride			C
Ethylene Dichloride		D	
Ethylene Glycol		B	B
F			
Fatty Acids		A	
Ferric Chloride		A	B
Ferric Nitrate			B
Ferric Sulfate		A	
Ferrous Chloride		A	B
Ferrous Sulfate		A	B

Chemical	%	PVC	PU
F			
Formaldehyde	40%	D	B
Formic Acid	10%	A	D
Freon			C
Freons		D	
Fuel Oil		B	B
Furfural		C	
G			
Gallic Acid		A	
Gasoline — 100 Octane		C	B
Glycerine		A	B
Glycolic Acid			B
Grease		A	B
Green Sulfate Liquor		A	
H			
Heptachlor in Petroleum Solvents		A	
Heptane		C	B
Hexane		C	B
Hydraulic Fluids — Ester Base		D	
Hydraulic Fluids — Petroleum Base		C	
Hydrazine			D
Hydrobromic Acid		A	B
Hydrocarbon Oil			B
Hydrochloric Acid	40%	C	
Hydrochloric Acid	10%	A	B
Hydrocyanic Acid			B
Hydrofluoric Acid			B
Hydrofluoric Acid	70%	C	
Hydrofluoroboric Acid		A	
Hydrofluorosilicic Acid		A	
Hydrogen			A
Hydrogen Peroxide	10%	A	B
Hydrogen Sulfide	<5%		C
Hydroiodic Acid			B
I			
Ink		C	
Iodine Solution			B
Isooctane		C	B
Isopropanol			B
Isopropyl Acetate		D	
Isopropyl Alcohol		B	
J			
Jet Fuels (JP-3, 4, and 5)		C	
JP-4 Oil			C



Chemical resistance guide

Flexible metallic conduit

Chemical	%	PVC	PU
K			
Kerosene		C	B
Ketones		D	
L			
Lacquer Thinners		D	
Lactic Acid	5%		B
Lead Acetate			B
Linseed Oil		A	B
Lox			B
Lubricating Oils, Greases, Soaps		A	B
M			
Magnesium Chloride		A	
Magnesium Hydroxide	10%	A	
Magnesium Salts	10%		B
Magnesium Sulfate		A	
Malathion 50 in Aromatics		D	
Malic Acid		A	C
Mercury			A
Mercury Salts			
Methanol			B
Methyl Acetate		D	
Methyl Alcohol		C	
Methyl Bromide		D	
Methyl Ethyl Ketone		D	D
Methylene Chloride		D	D
MIL-D 5606 Oil			C
MIL-L-7808 Oil			B
Mineral Oil		A	A
Monochlorobenzene		D	
Motor Oil 20W			B
N			
Naphtha		C	B
Naphthalene		D	
Natural Gas			B
Nickel Salts			C
Nitric Acid	10%	A	
Nitric Acid	35%	A	
Nitric Acid	70%	D	

Chemical	%	PVC	PU
Nitrobenzene			D
Nitrogen			A
O			
Oleic Acid		A	B
Oleum		D	
Oxalic Acid	10%	A	A
Oxygen			A
Oxygen — Liquid			D
Ozone	<1 PPM		A
P			
Paint		D	B
Paint Thinners		D	
Palmitic Acid		A	
Paper Chemicals		A	
Pentachlorophenol in Oil		B	
Pentane		C	
Perchloric Acid			D
Perchloroethylene		D	D
Petroleum			B
Petroleum Ether		C	
Petroleum Spirits		D	
Phenol		B	D
Phosphoric Acid	10%		B
Phosphoric Acid	85%	A	
Photographic Developer		A	
Phthalates		D	
Pitch		B	
Potassium Cyanide			B
Potassium Hydroxide		A	
Potassium Salts			B
Propane		A	B
Propyl Alcohol		B	C
Propylene Glycol			B
Pydraul		D	
Pydraul Oil			D
Pyridine			
R			
Resorcinol			

Chemical	%	PVC	PU
Ritchfield "A"		C	
Weed Killer			
S			
SEA No. 10 Oil			B
Seawater		A	B
Silicic Acid			B
Silicone Oil		A	
Silver Nitrate		C	B
Skydrol Oil — Type B		D	D
Soap			B
Sodium Acetate			B
Sodium Bicarbonate			B
Sodium Bisulfite	10%		B
Sodium Borate			B
Sodium Carbonate			B
Sodium Chlorate			B
Sodium Chloride			B
Sodium Cyanide		A	B
Sodium Dichromate			B
Sodium Ferrocyanide			B
Sodium Fluoride			B
Sodium Hydrosulfite			B
Sodium Hydroxide			B
Sodium Hydroxide	50%	A	
Sodium Nitrate			B
Sodium Silicate			B
Sodium Sulfide	10%		B
Solvesso		D	
Stoddard Solvent		D	
Styrene		D	B
Sulfur Dioxide	<5%		B
Sulfur Dioxide (Liquid)		D	
Sulfuric Acid	20%		D
Sulfuric Acid	50%	A	
Sulfuric Acid	98%	D	
Sulfurous Acid			B
T			
Tall Oil		D	
Tannic Acid		A	C
Tartaric Acid	10%		B

Chemical	%	PVC	PU
Tetra Ethyl Lead			D
Tetra Hydro Furan			D
Tin Salts			B
Titanium Salts			B
Toluene		D	D
Toluol		D	
Transformer Oil			C
Transmission Oil			B
Trichlorethane		D	
Trichlorethylene		D	
Trichloroacetic Acid			D
Trichloroethylene			D
Tricresyl Phosphate			D
Tricresyl Phosphate (Skydrol)		D	
Triethanol Amine		C	B
Trisodium Phosphate			B
Tung Oil		C	
Turpentine		C	B
U			
Urea	20%		B
V			
Varnish			B
Varsol		D	
Vegetable Oils and Juices		A	B
Vinegar		A	
Vinyl Chloride		D	
W			
Water		A	
Water 23°C			B
Water 70°C			B
Wood Preservatives		D	
X			
Xylene		D	C
Xylois		D	
Z			
Zinc Chloride	10%	A	B
Zinc Sulfate		A	B

Chemical resistance table — Type LTXE thermoplastic rubber jacket

Chemical	Test method		% Tensile strength	% Elongation	% Volume increase
ASTM #2 Oil	UL - 1581	7 days/60 °C	90	98	N/A
		4 days/100 °C	66	70	N/A
		18 hrs./120 °C	45	40	N/A
Break Fluid	ASTM D - 471	72 hrs./100 °C	80	90	-7
Ethylene Glycol	ASTM D - 471	72 hrs./100 °C	95	90	2
Methanol	ASTM D - 471	72 hrs./100 °C	95	90	0
Silicon Oil	ASTM D - 471	72 hrs./100 °C	100	80	-14
5% Salt Water	ASTM D - 471	72 hrs./100 °C	80	100	1
Vegetable Oil	ASTM D - 471	72 hrs./100 °C	60	70	N/A
Animal Oil	ASTM D - 471	72 hrs./100 °C	70	75	N/A
10W - 40 motor Oil	ASTM D - 471	72 hrs./100 °C	50	55	25
Gasoline	ASTM D - 471	72 hrs./100 °C	40	35	17
Transmission Oil	ASTM D - 471	72 hrs./100 °C	50	50	32
Freon2	ASTM D - 471	72 hrs./80 °C	93	84	N/A

Contact us

ABB Inc.
 Electrification Products
 8155 T&B Boulevard
 Memphis, TN
 www.abb.us/lowvoltage
 © 2017 ABB Inc. All rights reserved.

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB Inc. does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in part – is forbidden without prior written consent of ABB Inc. Copyright © 2017 ABB Inc. All rights reserved

