Technical data sheet

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
Acetate Solvents		D	
Acetic Acid	40%		D
Acetic Acid	10%	B	
Acetic Acid (Glacial)		C	D
Acetic Anhydride			D
Acetone		D	D
Acetyl Bromide			C
Acetyl Chloride			C
Acetylene			B
Acrylonitrite		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 Thicyanide			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
Carbonic 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
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	
Dodeayl Mercaptan			B
DOP		D	
Dow General Weed Killer (H_2O)		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
Formaldehyde	40%	D	B
Formic Acid	10%	A	D
Freon			C
Freons		D	
Fuel Oil		B	B
Furfurol		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
Hydroldic 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
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T&B Liquidtight Systems™

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
Monochlorbenzene		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" Weed Killer		C	
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 Fluride			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	
Trichloroacctic 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
Xylols		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

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