



This Chemical Resistance Guide is offered to assist in selecting pump materials that are most resistant to the chemicals that may be used with a ITT pump. The information is based on ITT laboratory tests, field testing programs and general data from industry sources. It should be used only as a guide in the selection of pump materials. Suitability for the application should be determined by actual use and is the full responsibility of the customer. No warranty, expressed or implied, can be extended by ITT where failure is caused by chemical attack on pump materials. Temperature, aeration, concentration and other factors may change the effect of the specific fluid on the pump materials. Data shown is based on results at ambient temperatures, unless otherwise noted.

#### **RATING SYSTEM**

The "A" rating indicates little effect on the physical properties of the material (Generally Satisfactory).

The "B" rating indicates minor to moderate effect (Generally Satisfactory But Should Be Qualified By Testing).

The "C" rating indicates a change in the physical properties in excess of acceptable tolerances could occur (Generally Not Satisfactory, Must Be Qualified By Testing).

The "D" rating indicates rapid physical deterioration, swelling of check valves, diaphragm or chemical attack on the pump housing material (Not Satisfactory).

Where no rating is shown data is not currently available, pump materials should be qualified by testing.

It is recommended that the pump be thoroughly flushed with water or other neutralizing agent after each use whenever possible.





	NAME	PROPERTIES	GENERAL CHEMICAL RESISTANCE	
			RESISTANT TO	ATTACKED BY
ELASTOMERS	Neoprene	Good Weathering Resistance. Flame retarding. Moderate resistance to petroleum-based fluids.	Moderate chemicals and acids, ozone, oils, fats, greases, many oils, and solvents.	Strong oxidizing acids, esters, ketones, chlorinated, aromatic and nitro hydrocarbons.
	EPDM	Excellent ozone, chemical, and aging resistance. Poor resistance to petroleum-based fluids.	Animal and vegetable oils, ozone, strong and oxidizing chemicals.	Mineral oils and solvents, aromatic hydrocarbons .
	Buna-N	Excellent resistance to petroleum-based fluids. Good physical properties.	Many hydrocarbons, fats, oils, greases, hydraulic fluids, chemicals.	Ozone (except PVC blends), ketones, esters, aldehydes, chlorinated and nitro hydrocarbons.
	Silicone	Excellent high and low temperature properties. Fair physical properties.	Moderate or oxidizing chemicals, ozone, concentrated sodium hydroxide.	Many solvents, oils, concentrated acids, dilute sodium hydroxide.
	Natural Rubber	Excellent physical properties including abrasion and low temperature resistance. Poor resistance to petroleum based fluids.	Most moderate chemicals, wet or dry, organic acids, alcohols, ketones, aldehydes and alkalies.	Ozone, strong acids, fats, oils, greases, most hydrocarbons including benzene, toluene, gasoline, and lubricating oils.
	Urethane	Good aging and excellent abrasion, tear, and solvent resistance. Poor high temperature properties.	Ozone, hydrocarbons, moderate chemicals, fats, oils, greases. Concentrated acids, ketones, esters, chlorinated and nitro hydrocarbons.	Concentrated acids, ketones, esters, chlorinated
	Viton, Fluoro-elastomer	Excellent oil and air resistance both at low and high temperatures. Very good chemical resistance.	All aliphatic, aromatic and halogenated hydrocarbons, acids, animal and vegetable oils.	Ketones, low molecular weight esters and nitro containing compounds. and nitro hydrocarbons.
	Kalrez	Excellent chemical resistance. Excellent high and low temperature properties.		
	Fluoro-silicone	Moderate or oxidizing chemicals, ozone, aromatic chlorinated solvents, bases.	Brake fluids, hydrazine, ketones	
	Santoprene	Resistant to a wide variety of solvents and chemicals. Excellent abrasion resistance and long mechanical flex life in hot and cold environments	High polar fluids such as alcohols, ketones, glycols, esters, and aqueous solutions of acids, salts, and bases	Most hydrocarbons and petroleum or oil based products

**GAS WARNING**

No pump manufactured by ITT should be used for gasoline or any fluid with a flash point below 100° F (38° C)



	PLASTICS				ELASTOMERS					ALLOYS			
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYMAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Acetaldehyde	A	A	D		D	C	D	A	B	B	A	A	A
Acetamide	A	A	A	A	C	B	A	B	A	A	A	A	
Acetate Solvents (crude)	D	A	A	N/A	A	D	D	C	V	B	A	A	
Acetate Solvents (pure)	D	A	B			D	D	C	B	B	A	A	
Acetic Acid, Glacial	A	D	A	D	A	D	C	B	B		A	A	A
Acetic Acid, 10%	A	C	A			C	B		B		A	A	
Acetic Acid, 20%	A	B	A	C	A	C	B	B	B		A	A	
Acetic Acid, 50%	A	D	A			C	A		B	A	A	A	
Acetic Acid, 80%	B	D	A	D	C	C	C	B	A	B	A	A	
Acetic Acid, pure	A	D	A	D	C	D	C	V	V	B	A	A	A
Acetic Anhydride	C	A	C	D	B	D	D	C	C	B	A	A	A
Acetone	A	A	C	A	D	D	D	B	A	X	A	A	
Acetophenone	C					D	C		A	D	A	B	
Acetyl Chloride	D	D	D	D	A	A	D	C	D	B	A	B	
Acetylene	A	A	A	A	A	A	B	B	A	X	A	A	
Acetylene Tetrabromide	A		A			A	D				A	A	
Acetylsalicylic Acid	A	A								C	A	A	
Acrylonitrile	A	A	A	N/A	A	D	D	D	D	D	A	B	
Adipic Acid				N/A	A		A			B	A		
Aero Lubriplate						A	A	B		C	A		
Aero Safe 2300						D	D	C		B	A		
Alcohol - Amyl	A	A	B	A	A	C	B	D	A	A	A		
Alcohol - Benzyl	A	D	D	A	A	A	D		B	A	A	A	A
Alcohol - Butyl	A	A	A	A	A	A	A	B	B	A	A	A	A
Alcohol - Diacetone	A	A	B	A	A	C	D	D	A	C	A	A	A
Alcohol - Ethyl	A	A	B	A	N/A	B	C	B	A	B	A	A	A
Alcohol - Hexyl		A	A	A	N/A	B	A	B		B	A	A	A
Alcohol - Isobutyl	A	A	A	A	N/A	A	B	A	A	A	A	A	A
Alcohol - Isopropyl	A	B	A	A	N/A	A	B	A	A	B	A	A	A
Alcohol - Methyl	A	A	A	A	A	C	A	A	A	A	A	A	A
Alcohol - Octyl	A	A	A	A	N/A	B	B	B	A	B	A	A	A
Alcohol - Propyl	A	B	A	A	A	A	A	A	A	A	A	A	A
Aluminum Chloride, 20%	A	C	B	C	A	A	A	B	A		A	C	A
Aluminum Chloride	A	D	B	N/A	A	A	A	B	A	A	A	C	B
Aluminum Citrate											A		
Aluminum Flouride	A	A	A	C	A	C	A	B	A		A	C	
Aluminum Formate						D	D				A		

	PLASTICS				ELASTOMERS					ALLOYS			
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYMAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Aluminum Hydroxide	A	A	A	A	A	B	A		A		A	A	
Aluminum Nitrate	A		A	B	A	B	A				A		
Aluminum Oxochloride	A					D					A		
Aluminum Phosphate						A	A			A	A		
Aluminum Potassium Sulfate 10%	A	D	A	C	B	A	A	A	A	A	A	B	C
Aluminum Potassium Sulfate	A	D	A	C	N/A	A	A	A	A	A	A	A	
Aluminum Sulfate	A	A	A	B	A	A	A	A	A		A	B	B
Amines	B	D		D	N/A	D	D	B	B	A	A		
Ammonia, 10%	A	A	C	D	A	C	D			A	A		
Ammonia, anhydrous	A	A	A	D	A	D	C	D	A	A	A	A	B
Ammonia, liquid	A	B		D	A	D	C		A	A	A	A	
Ammonia Nitrate	A	D		C	A	D	C		A	A	A	A	
Ammonium Acetate				N/A	N/A	A	A		A	A	A		
Ammonium Alum							B				A		
Ammonium Bichromate								A		A	A		
Ammonium Bifluoride	A		A	D	A	A	B		A	A	A		
Ammonium Bisulfide	A										A		
Ammonium Carbonate	A	A	B	D	A	A	C	A		A	A	B	B
Ammonium Casenite				D	N/A					A	A	A	
Ammonium Chloride	A	C	A	B	A	A	B		A	A	A	C	B
Ammonium Dichromate							A			A	A		
Ammonium Flouride							B			B	A		
Ammonium Flouride, 10%	A						A	A			A		
Ammonium Flouride, 25%	A										A		
Ammonium Hydroxide	A	A	A	C	A	B	C	A	A		A	A	B
Ammonium Metaphosphate	A		A			A	A		A		A		
Ammonium Nitrate	A	B	A	A	A	A	A		A	A	A	A	D
Ammonium Oxalate		B		B	N/A		A			A	A	A	
Ammonium Persulfate	A	C	A	D	A	B	C		B	A	A	A	D
Ammonium Phosphate, Dibasic	A	C	A	B	A	A	A	A	A	A	A	C	

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Ammonium Phosphate, Monobasic	A	B	A	B	N/A	A	A	A	A	A	A	C	
Ammonium Phosphate, Tribasic	A	B	A	B	N/A	A	A	A	A	A	A	B	
Ammonium Sulfate	A	A	A	B	A	A	A	A	A	X	A	B	B
Ammonium Thiosulfate			A	B	N/A	A				A	A	A	
Amyl Acetate	C	A	A	B	A	D	D	D	A	D	A	A	A
Amyl Alcohol	B	A	B	A	A	B	B	D	A	A	A	A	
Amyl Chloride	D	C	D	A	A	B	D	D		C	A		A
Aniline	C	C	B	A	A	D	D	D	B	A	A	B	B
Anti-Freeze	D	D		D	N/A	A	A			A	A	A	
Aqua Regia	B	D	C	D	A	B	D	D		D	A	D	D
Arochlor	D	A	B	N/A	N/A	A	C	B	B	D	A	B	A
Aromatic Hydrocarbons	D		D	A	N/A	A	C	D	D	C	A	B	
Arsenic Acid	A		B	D	A	A	A	A	A	A	A	B	B
Asphalt	B	A	C	B	A	A	B	D	D	B	A	A	
Barium Carbonate	A	A	B	A	A	A	A		A	A	A	B	B
Barium Chloride	A	A	A	A	A	A	A	A	A	A	A	B	A
Barium Cyanide	D		B	B	N/A	A	C		A	A	A	B	
Barium Hydroxide	B	A	B	D	A	A	B	A	A	A	A	B	B
Barium Nitrate	A	A	B	B	N/A	A	A		A	A	A	B	B
Barium Sulfate	A	A	A	B	A	A	A	A	A	A	A	A	C
Barium Sulfide	B	A	A	A	A	A	A	A	A	A	A		
Beer	A	A	A	A	A	A	A	A	A		A	A	A
Beer Sugar Liquid	B	A		B	A	A	A	A	A		A	A	
Benzaldehyde	C	C	D	A	A	D	D	D	C	D	A	A	A
Benzalkonium Chloride										C	A		
Benzene	C	A	D	A	A	A	D	D	D	C	A	B	B
Benzoic Acid	B	C	C	B	A	A	D	B	C	A	A	B	B
Benzol	A	D	C	A	A	A	D		B	C	A	A	
Benzyl Benzote						A	D		C	C	A		
Benzyl Chloride				A	N/A	D	D	D	D	C	A		
Black Liquor	A	A				A	A	B	B	X	A		
Bleach	A	C	A	N/A	N/A	A	D	B	A	B	A		
Borax	A	A	A	B	A	A	C	B	A	A	A	A	A
Boric Acid	A	B	A	A	A	A	A	A	A	A	A	B	A
Brake Fluid				B	N/A	D	C	C	A	A	A		
Brewery Slop						A	A				A	A	
Brine	A					A	A				A		

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Brine Acid	A		A			A	A		A		A		
Bromine Dry		D		D	A	A	D	D	D	C	A		A
Bromine Gas		D				A	D	D	D		A		A
Bromine Liquid	D	D	D			A	D	D	D	C	A	D	A
Bromine Water	C	D	D			A	C	D	D	B	A		A
Bromobenzene								D		D	A		
Bromotoluene	D									X	A		
Butadiene	C	A	D	A	A	A	C	D	C	D	A	A	
Butane	A	A	C	A	A	A	A	D	C	D	A	A	B
Butanediol			A			A			D	B	A		
Butter			A	A	N/A	A	A	B	A	B	A	A	
Buttermilk	A	B	A	A	N/A	A	A			A	A	A	A
Butylene		B	C	A	A	A	B	D	D	C	A	A	
Butyl Acetate	B	A	C	A	B	D	D	D	B	B	A	B	A
Butyl Acrylate Pure	D					D			A		A		
Butyl Acrylate Saturated	D					D	C		D		A		
Butyl Amine	D			C	A	D	C	B	D	A	A		B
Butylenebenzine						A	D				A		
Butyl Benzote						A	D		A	C	A		
Butyric Acid	C	B	C	A	A	C	D		B	A	A	B	B
Calcium Bisulfate				N/A	N/A			A		X	A	A	
Calcium Bisulfide	A	A		D	A	A	A		C	D	A	B	
Calcium Bisulfite	B	A	A	D	A	A	A	A	D	D	A	A	B
Calcium Carbonate	A	A	B	A	A	A	A	A	A	A	A	B	B
Calcium Chlorate				A	A	A	C		A	A	A		
Calcium Chloride	A	A	B	D	A	A	A	A	A	A	A	B	B
Calcium Hydroxide	A	A	B	D	A	A	B	A	A	A	A	B	A
Calcium Hydrochloride	A	C	B	D	A	A	B	B	B	A	A	C	B
Calcium Sulfate	A	D	B	D	A	A	A		A	A	A	B	B
Calgon	A	A		A	N/A	A	A		A	A	A	A	
Cane Juice	C	A		A	A	A	A	A	A	A	A	A	
Carbolic Acid	B	D	B	D	A	A	C	D	B	A	A	B	
Carbon Bisulfide	C	A	D	A	N/A	A	C		D	D	A	B	
Carbon Dioxide (wet or dry)	A	A	B	A	A	A	C	B	B	A	A	A	A
Carbon Monoxide	A	A	A	A	B	A	A	A	A	A	A	A	A
Carbon Tetrachloride	D	C	D	B	A	B	C	D	D	D	A	B	B
Carbonated Water	B	A	A	A	N/A	A	A			A	A	A	
Carbonic Acid	A	A	A	B	A	A	B	A	A	A	A	B	A



	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KVMAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Casein						A	A		A	A	A		
Catsup	A	A		B	N/A	A	A			A	A		A
Caustic Lime						B	A		A		A		
Caustic Potash	A					D	A		A		A		B
Caustic Soda	A					B	C		A		A		A
Chloral Hydrate	A	D				A	C				A		
Chloroacetic Acid	C	D	C	D	A	D	C		B	D	A	C	A
Chloric Acid		D		D	N/A		D				A	C	
Chloric Acid 20%	D			D	N/A						A		
Chlorinated Glue				D	N/A	A	C		B		A	A	
Chlorine Dioxide	C					D				D	A		
Chlorine Dry	C	D	B	D	A	C	D	D	B	C	A	B	B
Chlorine Gas Dry	D					B	C		D	C	B		
Chlorine Gas Wet	D					C	C		D	C	A		
Chlorine Liquid	C	D	C	A	A	A	C			D	A	D	A
Chlorine Water	C		A	D	B	A	C		B	D	A	C	B
Chlorobenzene (Mono)	C	B	C	D	A	A	D	D	D	C	A	B	B
Chloroform	C	D	C	A	A	A	D	D	D	C	A	A	A
Chlorosulfonic Acid	D	D	D	D	D	D	D	D	D	C	A	D	A
Chlorox Bleach	D	A	B			A	B		B		A	A	
Chocolate Syrup	A	A		A	N/A	A	A				A	A	
Chresylic Acid 50%			D			A	D			A	A		
Chrome Alum			A			A	A	A			A		
Chromic Acid 05%	C	D	B	D	A	A	D	C	A	A	A	A	A
Chromic Acid 10%	B	D	A	D	A	B	D	C	B		A	B	A
Chromic Acid 20%	C	D	A			B	C	C	B		A		
Chromic Acid 30%	C	D	A	D	A	A	D	C	B		A	B	
Chromic Acid 50%	C	D	C	D	A	A	D	C	B	A	A	B	D
Chromium Alum	A					A			A		A		
Cider	A		B	A	N/A	A	A			A	A	A	
Citric Acid	A	A	A	B	A	A	A	A	A	A	A	A	A
Citric Oils	A			B	N/A	A	A		B	C	A	A	
Cobalt Chloride						A	A	B	A	A	A		
Coconut Oil	A		A			A	A	A	A	B	A	A	
Coffee	A	A		A	N/A	A	A	A	A	A	A	A	
Copper Chloride	A	A	B	A	A	A	A	A	A	A	A	C	B
Copper Cyanide	A	A	A	A	A	A	A	A	A	A	A	A	B
Copper Fluoborate				B	N/A	A	B			A	A	D	B
Copper Nitrate	A	D	B	A	A	A	A			A	A	B	C
Copper Sulfate	A	C	B	D	A	A	A	A	A	A	A	B	B

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KVMAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Cream	A	A		A	N/A	A	A				A	A	
Cresols	D	D	C	D	A	A	D	D	D		A	A	B
Cresylic Acid	D	D	B	D	B	A	D	D	D		A	A	B
Cyanic Acid				D	N/A	A	C				A		
Cyclohexane	C	A	B	A	A	A	B	D	D	C	A	A	B
Detergents	B	A	A	A	A	A	A	A	A	B	A	A	B
Diacetone Alcohol	A			N/A	D	D	D	D	A	B	A		
Diazo Salts	A		A								A		
Dibutyl Amine						C	C	C	D	C	A		
Dibutyl Ether						C	C	D	C	B	A		
Dibutyl Phthalate	B	A				B	D	B	A	B	A		B
Dibutyl Sebacate						C		B	B	B	A		
Dichlorethane	A	C	C			C				D	A	B	
Dichloromethane						B	D		D		A		
Diesel Fuel	B		C	A	A	A	A	D	D		A	A	B
Diethylamine	B	A	D	B	D	C	C	B	B	C	A	B	
Diethyl Ether	B			N/A	A	C	D	D	C	B	A		B
Diethyl Oxide						D	B		D		A		
Diethylene Glycol	A	A	B	A	A	A	A	D	A	A	A	A	
Diglycolic Acid	A			D	A	A			A		A		
Diisobutyl Ketone						D			D	B	A		
Diisobututylene						A		D	D		A		
Diisooctyl Phthalate						B			B	X	A		
Diisopropyl Ketone						D		D	B	C	A		
Dimethyl Amine	A					D	B		C		A		
Dimethyl Benzene						A	D		D		A		
Dimethyl Ether				D	D	B	B		B		A		
Dimethyl Formamide	A	A				C	B	B	B		A		
Dimethyl Ketone						D	D		A		A		
Dimethyl Phthalate				D	D	B	C		B		A		
Dimethylamine	A					D			D		A		
Diocyl Phthalate	D		D			A	D	C	B		A		
Dioxane	B	A				D	D	D			A		
Diphenyl Oxide	D		D	D	B	A	D	C	D	C	A	B	
Dyes		A		C	N/A	A					A	A	
Epsom Salts	A	A	A	B	A	A	A	A	A	A	A	B	A
Ethane	C	D	D	A	A	A	A	D	D	C	A	A	A
Ethanolamine	B	A		A	N/A	D	B	B	B	A	A	A	B
Ether	D	A	C	D	C	C	D	D	C	C	A	B	B
Ethyl Acetate	B	A	B	A	B	D	D	B	B	A	A	B	A
Ethyl Chloride	C	A	B	A	D	A	A	D	A	D	A	A	B

	PLASTICS					ELASTOMERS						ALLOYS	
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Ethylene Chloride	C	B	C	A	A	B	D	D	D	D	A	A	B
Ethylene Dichloride	B	B	C	A	A	A	D	D	C	D	A	A	A
Ethylene Glycol	A	B	A	B	A	A	A	A	A	D	A	A	B
Ethylene Oxide	C	A	C	B	A	D	D	D	C	A	A	C	
Fatty Acids	B	A	B	D	A	D	D	D	C	A	A	A	A
Ferric Chloride	B	C	A	A	A	A	B	B	A	B	A	C	C
Ferric Nitrate	B	A	B	D	A	A	A	C	A	A	A	A	B
Ferric Sulfate	B	A	A	D	A	A	A	B	A	A	A	A	B
Ferrous Chloride	A	C	A	D	A	A	A		A	A	C	D	
Ferrous Sulfate	A	C	A	D	A	A	A		A	A	A	B	B
Flouboric Acid	A	D	B	D	A	A	A		A	A	A	C	A
Fluorine	C	D	C	A	A	B	C	D	A	A	A	C	B
Fluosilic Acid	A	D	B	D	A	A	A	B	A	D	A	B	
Formaldehyde	C	D	B	A	A	D	C	B	A	A	A	A	B
Formaldehyde 40%	A	C	A	A	A	A	B		A	A	A	A	B
Formic Acid	A	C	B	A	A	C	B	B	A		A	C	B
Freon 11	D	D	C	A	A	A	B	D	D	A	A	A	
Freon 12	D	D	C	D	A	B	A	D	B	B	A	A	
Freon 22	A	B	A	B	A	D	D	D	A	D	A	A	
Freon 113	D		D	A	A	B	A	D	D	D	A	A	
Freon T.F.	D	D	D	A	B	B	A	D	D	D	A	A	
Fructose	A		A	A	B	A	A		A	D	A	A	
Fruit Juice	A	A	B			A	A				A	A	
Fruit Pulp	A		A	D	A	A					A	A	
Fuel Oils	B	A	D			A	A	C	D		A	A	B
Furan Resin	D		D	A	B	D	D	D	C	C	A	A	A
Furfural	C	B	D	D	D	D	D	D	B		A	A	B
Gallic Acid	A	B	D	A	B	A	A		A	A	A	B	B
Gasoline	D	A	D	N/A	A	B	A	D	D	A	A	A	A
Gelatin	A	A	A	B	A	A	A	A	A	C	A	A	B
Glucose	A	B	A	B	A	A	A	A	A	A	A	A	
Glue		A	A	A	A	A	A	A	A	A	A	A	
Glycerin	A	A	A	A	N/A	A	A	A	A	A	A	A	A
Glycerol	A	A	A	A	A	A	A	A	A		A	A	A
Glycolic Acid	A		A			A	A	A	A	A	A	A	B
Gold Monocyanide				A	B	A	A			X	A	A	
Grape Juice		A	B	A	A	A	A			A	A	A	
Grease				A	A	A	D			A	A	A	
Heptane	C	A	C	D	A	A	A	D	D	B	A	A	B
Hexane	C	A	C	A	A	A	A	D	D	C	A	A	B

	PLASTICS					ELASTOMERS						ALLOYS	
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Honey	A	A	B	A	A	A	A				A	A	
Hydraulic Oil (Petroleum)	D	A	D	B	A	C	A	C	D	D	A	A	
Hydraulic Oils (Synthetic)	D	A	A	N/A	A	A	C			D	A	A	
Hydrazine	C			B	A	A	B	C	A	A	A	A	
Hydrobromic Acid 20%	A	D	B	C	A	A		D	A	B	A	D	B
Hydrobromic Acid	A	D	A	D	A	A	D	D	A	B	A	D	B
Hydrochloric Acid dry gas	B	A	A	N/A	A				C		A	D	A
Hydrochloric Acid 20%	B	D	A	C	A	A	C	C	A	A	A	D	B
Hydrochloric Acid 37%	B	D	C	C	A	A	B	B	A	B	A	D	A
Hydrochloric Acid 100%	D	B		C	A	A	D	D	C		A	D	A
Hydrocyanic Acid	A	C	A	B	A	A	B	C	A		A	B	A
Hydrocyanic Acid (Gas 10%)	A			C	N/A	A	B		A		A		
Hydrofluoric Acid 20%	A	C	A	D	A	A	C	D	A	D	A	C	B
Hydrofluoric Acid 50%	A	D	A	D	A	A	C	D	A	D	A	D	B
Hydrofluoric Acid 75%	C	D	C	D	A	A	D	D	C	D	A	D	B
Hydrofluosilicic Acid	A	D	B	D	A	A	B	D	A	D	A	D	B
Hydrogen Gas	A	A	A	A	A	A	A	C	A		A	A	A
Hydrogen Peroxide 10%	B	C	A	N/A	A	A		B		A	A	B	D
Hydrogen Peroxide 30%	B	D	C	D	A	A		B		A	A	B	D
Hydrogen Peroxide 50%	B	D	C	D	A	A		B		A	A	A	C
Hydrogen Peroxide 100%	B	D	C	D	A	A	B	B	A	A	A	A	A
Hydrogen Sulfate (aqua)	A	C	A	D	A	D	D	C	A	A	A	C	A
Hydrogen Sulfide (dry)	A	C	A	C	A	D	A	C	A	A	A	B	B
Hydroxyacetic Acid			A	N/A	A	A	A		A	A	A		
Hydroxyacetic Acid (70%)			A			A	A		A	A	A		
Hydroxylamine Sulfate	A			A	A				A		A		



	PLASTICS				ELASTOMERS					ALLOYS			
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Hypochlorous Acid	A		A			B	D		B	A	A	D	
Ink	A	C	D	B	A	A	A			A	A	A	
Iodine	B	D	B	D	A	A	B		B	A	A	C	B
Isotane	D	D		N/A	A	A	A				A		
Isopropyl Acetate	B	B	B	D	D	D	D	D	B	B	A	B	B
Isopropyl Ether	C	A	C	D	D	D	B	D	D	C	A	A	
Jet Fuel JP-3	A	A	C	A	B	A	A	D	D		A	A	A
Jet Fuel JP-4	B	A	C	A	B	A	B	D	D		A	A	A
Jet Fuel JP-5	B	A	C	A	B	A	A	D	D		A	A	A
Kerosene	A	A	C	A	A	A	A	D	D	C	A	A	A
Ketones	B	A	C	D	C	D	D		C	C	A	A	B
Laquer	B	A	C	D	D	D	D	D	D	C	A	A	
Laquer Thinner	B	A	B	D	N/A	D	D	D	A	C	A	A	
Lactic Acid	A	C	B	B	B	A	A	A	B	A	A	A	B
Lard	A	A	B	A	A	A	A	B	C	B	A	A	A
Latex	A	A	A	B	A	A	A		B	A	A	A	
Lead Acetate	A	B	B	B	A	D	B	D	A	A	A	B	B
Lead Chloride	A					A			A		A		
Lead Nitrate	A			N/A	A	A	A	B	A		A	B	B
Lead Sulfamate	A	B	A	A	A	A	B	B	A	A	A	B	
Ligroin	B	D	C	B	A	A	A	D	C	B	A	A	
Lime	A	A	B	B	A	A	A	B	C	A	A	A	
Linoleic Acid	A			B	A	B	B	B	D	B	A	A	
Linseed Oil	A	A	D			A	A	A	B	B	A	A	A
Lubricants	A	A	D	A	A	A	A	D	D	D	A	A	B
Magnesium Carbonate	A		A	A	A	A	A		A	A	A	A	B
Magnesium Chloride	A	A	A	B	A	A	A	A	A	A	A	A	A
Magnesium Hydroxide	A	B	A	A	A	A	A	A	A	A	A	A	B
Magnesium Nitrate	A	A	A	A	A	A	A		A	A	A	A	B
Magnesium Oxide				A	N/A		A			A	A	A	
Magnesium Sulfate	A	A	A	B	A	A	A	A	A	A	A	B	A
Maleic Acid	A	B	B	A	A	A	D	B	D	A	A	B	B
Maleic Anhydride	D			D	A	A	D		D	A	A		A
Mash		A		A	N/A	A	A		A	A	A	A	
Mayonnaise		A	B	A	A	A	A			A	A	A	
Melamine	A	A		A	N/A	A	C		A		A	D	
Mercuric Chloride	A	D	A	B	A	A	A			A	A	C	D
Mercuric Cyanide	A	A	A	N/A	A	A	A			A	A	B	D
Mercury	B	A	A	A	A	A	A		A	A	A	A	B

	PLASTICS				ELASTOMERS					ALLOYS			
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Methyl Acetate	D	A	B	B	B	D	D	D	B	B	A	A	B
Methyl Acrylate	D		B	B	B	D	D	D	B	D	A		
Methyl Acetone		A		D	D	A	D			B	A	A	
Methyl Bromide	C	C	D	D	A	A	D			D	A	A	
Methyl Butyl Ketone	D	D	A	D	D	D	D	D	A	C	A	A	B
Methyl Cellosolve	B	C	B	D	A	D	C	D	B	B	A	A	
Methyl Chloride	D	C	C	B	A	A	D	D	C	D	A	A	B
Methyl Dichloride	D	C		D	D	A	D	D	D	D	A		
Methyl Ethyl Ketone	A	A	B	C	D	D	D	D	A	B	A	A	B
Methyl Isobutyl Ketone	C	A	A	N/A	D	D	D	D	C		A	A	
Methyl Isopropyl Ketone	D	D	D	N/A	N/A	D	D	D	B	C	A	A	
Methyl Methacrylate	D			D	B	D	D	C	D	B	A		
Methylamine	D			D	C	D	D		A	A	A	A	
Methylene Chloride	B	C	C	B	B	B	D	D	D	D	A	B	A
Milk	B	A	A	A	A	A	A	A	A	A	A	A	A
Mineral Oil	A	A	D	A	N/A	A	A	B	D	D	A	A	
Molasses	A	A	A	A	B	A	A		C	A	A	A	A
Motor Oil	C			B	B	A	A		D		A		
Mustard	A	A	A	C	A	D	C	A	A	A	A	A	A
Naptha	C	A	A	A	A	A	C	D	D	C	A	A	B
Napthalene	B	A	A	A	A	A	D	D	D	C	A	B	
Natural Gas	A			B	N/A	A	A	A	D	C	A		
Neon						A	A	A	A		A		
Nickle Chloride	A	C	B	A	A	A	A	A	A	A	A	C	A
Nickle Sulfate	A	A	B	A	A	A	A	A	A	A	A	B	B
Nitric Acid (5-10%)	A	C	B	D	A	A	D	C	D	A	A	A	D
Nitric Acid (20%)	A	D	C	D	A	A	D	D	B	B	A	A	D
Nitric Acid (50%)	D	D	C	D	A	A	D	D	D	C	A	A	D
Nitric Acid (Concentrated)	D	D	C	D	A	A	D	D	D	C	A	A	
Nitrobenzene	B	B	C	C	A	B	D	D	D	B	A	A	C

OILS

Aniline	A	A		D	A	C	D	D	B	C	A	A	
Anise		A		D	N/A						A	A	
Bay				D	A	A					A	A	
Bone	A			D	A	A	A				A	A	
Castor	A	A		A	A	A	A	A	B	B	A	A	
Cinnamon		A		D	N/A	A				C	A	A	
Citric		A		A	A	A				C	A		

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Clove		A		N/A	N/A	A	A			C	A	A	
Cod Liver	A			B	A	A	A	B	A	C	A	A	
Corn	A	A	C	A	A	A	A	A	C	D	A	A	
Cotton Seed	A	A	B	A	A	A	A	A	C	B	A	A	
Creosote	C	D	C	D	N/A	A	B	D	D	D	A	B	
Diesel Fuel	A	A	C	D	A	A	A	D	D	D	A	A	
Fuel	C	A	C	D	B	A	B	C	D	C	A	A	
Ginger		A		A	A	A	A		A		A	A	
Hydraulic	D	A	C	B	A	A	A	C	D	D	A	A	
Lemon		A		D	A	A			D	C	A	A	
Linseed	A	A	C	A	A	A	A	A	C	B	A	A	
Mineral	B	A	B	A	A	A	A	C	D	D	A	A	
Olive	A	A	A	A	N/A	A	A	D	B	B	A	A	
Orange		A		D	A	A	A	D			A	A	
Palm		A		A	A	A	A			B	A	A	
Peanut	D	A		A	A	A	A	A	C	B	A	A	
Peppermint		A		D	A	A	D			C	A	A	
Pine	D	A		A	A	A	B	D	A	C	A	A	
Rape Seed	D			A	A	A	B	D	A	B	A	A	
Rosin	A	A	B	N/A	A	A	A			A	A	A	
Sesame Seed		A		D	A	A	A			B	A	A	
Silicone	A	A	A	A	A	A	A	C	A	C	A	A	
Soybean	A	A	A	A	A	A	D	A	C	C	A	A	
Sperm				D	A	A	A			B	A	A	
Tanning				D	A	A	A				A	A	
Oil, Turbine	B		C	A	A	A	B	D	D		A	A	
Oleic Acid	A	B	D	A	A	B	B	D	C		A	B	B
Oleum	D	D	A	D	D	D	D	D		D	A	B	
Oxalic Acid	A	B	A	B	B	A	B	B	A	A	A	B	B
Oxygen Gas	A					A	C	B	A		A		
Ozone	C		C	C	A	A	D	A	A	A	A		
Palmitic Acid	A		B	A	A	A	A	D	B	B	A		
Paraffin	A	A	B	A	A	B	A		D	A	A	A	A
Pentane	D	A	D	B	A	A	A	D	D		A	C	
Perchloroethylene	C	C	D	B	A	A	D	D	D	D	A	A	B
Petrolatum	C	D	B	B	A	A	A	C	C		A	A	
Phenols 10%	B	D	A	B	A	B	D	D	C		A	B	
Phenols 100%	A	D	B				D	D	D	A	A	A	
Phosgene Gas	C					D	D		A		A		
Phosgene Liquid	D					D	D		A		A		
Phosphoric Acid < 40%	A	D	B	D	B	A	C	D	B	A	A	A	A

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Phosphoric Acid > 40%	A	B	A	D	B	A	C	C	B	C	A	B	B
Phosphoric Acid (crude)	B	B	C	D	A	A	C	C	B		A	C	A
Phosphoric Acid (molter)	D			D	D						A		C
Phosphoric Acid Anhydride	A			D	D						A		
Phosphorus Trichloride	C		A	D	A	C	D		C	B	A	A	D
Photographic Developer	A		B	D	N/A	A	A	A	B	A	A	A	
Phthalic Acid	D	B		C	A	A			A		A		B
Phthalic Anhydride	D			C	A	A	C		A		A	B	A
Plating Solutions - Antimony	A			A	A	A	A				A	A	A
Plating Solutions - Arsenic	A	A		A	A	A	A				A	A	A
Plating Solutions - Brass	A	A	B	A	B	A	A				A	A	A
Plating Solutions - Bronze	A	A		A	A	A	A		A		A	A	A
Plating Solutions - Cadmium	A	C		A	A	A	A				A	A	A
Plating Solutions - Chrome	A	D		D	C	A		D			A	A	
Plating Solutions - Copper	A	C		C	A	A	A				A	A	A
Plating Solutions - Gold	A	A		N/A	N/A	A	A				A	A	A
Plating Solutions - Indium	A	D		N/A	N/A	A	A				A	A	A
Plating Solutions - Iron	A	D		N/A	N/A	A	A				A	A	A
Plating Solutions - Lead	A	D		N/A	N/A	A	A				A	A	A
Plating Solutions - Nickel	A	C		N/A	N/A	A	A				A	A	A
Plating Solutions - Silver	A	A		N/A	N/A	A	A				A	A	A
Plating Solutions - Tin	A	D		N/A	N/A	A	A				A	A	A
Plating Solutions - Zinc	A	D		N/A	N/A	A	A				A	A	A
Potash	A	A	B	B	A	A	A				A	A	
Potassium Bicarbonate	A	A	A	C	B	A	A				A	A	B



	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Potassium Carbonate	A	A	A			A	A			A	A	B	A
Potassium Carbonate	A	A	A			A	A			A	A	B	B
Potassium Chlorate	A		A	B	A	A				A	A	B	B
Potassium Chloride	A	B	A	A	A	A	A	A	A	A	A	B	B
Potassium Chromate	A	A	A	C	B	A	A			A	A	B	A
Potassium Cyanide Solutions	A	A	A	C	A	A	A	A	A	A	A	B	B
Potassium Dichromate	A	D	A	A	A	A	A	A	A	A	A	B	B
Potassium Ferrocyanide	A	B	A	N/A	A	A	A				A	B	B
Potassium Hydroxide	A	C	A	A	A	B	B	C		A	A	B	B
Potassium Iodide	A			N/A	A	A	A		A		A		A
Potassium Nitrate	A	B	B	A	A	B	A	A	A	A	A	B	D
Potassium Perborate	A		A	N/A	N/A						A		
Potassium Perchlorate	A		A				A		A		A		
Potassium Permanganate	A	D	A	A	A	B	A		A	A	A	B	B
Potassium Persulfate	A		A				A		A		A		
Potassium Sulfate	A	A	A	B	A	A	A	A	A	A	A	B	
Potassium Sulfide	A	A	A	N/A	A	A	A	A	A		A	A	
Potassium Thiosulfate						A	A				A		
Propane	B	A		A	A	A	A	D	D	C	A	A	
Propanol						A	A		A		A		
Propargyl Alcohol	A		A								A		
Propyl Acetate						D	D	D	B	B	A		
Propylene				N/A	N/A	A	D	D	D	B	A		
Propylene Dichloride	C		C			D	D		D		A		
Propylene Glycol	A		B	B	N/A	A	A		A	A	A	A	B
Pyridine	A	A	B	B	D	D	D	D	B	A	A	A	A
Pyrogalic Acid	A			D	A	A					A	B	B
Rosins	A	A	B	B	N/A	A	A			A	A	A	A
Rum	A	A		A	N/A	A	A		A	A	A	A	
Rust Inhibitors	A			A	N/A	A	A			B	A	A	
Salad Dressing	A	A		A	N/A	A	A			A	A	A	
Sea Water	A	A	A	A	A	A	A	A	A	A	A	A	A
Sewage	A			A	N/A	A	A	B	B	A	A	A	
Shellac (Bleached)	A	A	A	A	N/A		A			A	A	A	
Shellac (Orange)	A	A	A	A	A		A			C	A	A	
Silicic Acid	A		A			A	A				A		
Silicone	A	A				A	A	C	A		A	A	

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Silver Bromide				C	N/A						A	B	B
Silver Cyanide	A					A			A		A		
Silver Nitrate	A	A	B	A	A	A	B	A	A	A	A	B	B
Silver Salts	A		A			A	A				A	A	
Silver Sulfate	A			A	A	A	C		A	A	A		
Soap Solutions	A	A	B	B	A	A	A	A	A		A	B	B
Sodium Acetate	A	B	B	B	N/A	D	B	D	A	A	A	B	
Sodium Aluminate	A	A	A	A	A	A	A		A	A	A	A	B
Sodium Bicarbonate	A	A	A	B	A	A	B	D	A	A	A	B	B
Sodium Bisulfate	A	A	A	C	A	A	B		A	A	A	B	B
Sodium Bisulfide	A	A	A	N/A	A	A	A	A	A	A	A	B	
Sodium Borate	A	A	A	A	A	A	A	A	A	A	A	B	
Sodium Carbonate	A	B	B	A	A	A	A	A	A	A	A	A	B
Sodium Chlorate	A	D	B	A	A	A			A	A	A	B	
Sodium Chloride	A	A	A	D	A	A	A	A	A	A	A	B	A
Sodium Chromate		D		A	A	A	A			A	A	B	
Sodium Cyanide	A	A	A	N/A	N/A	A	A	A	A		A	A	
Sodium Hydroxide 20%	A	A	A	A	A	B	B	B	A	A	A	A	A
Sodium Hydroxide 50%	A	A	A	A	A	B	B	B	A	A	A	B	A
Sodium Hydroxide 80%	A		B	D	A	B	B		A		A		B
Sodium Hypochlorite < 20%	B	D	A	D	A	A	B	B	B		A	C	
Sodium Hypochlorite 100%	B	D	B	D	A	A	B	B	B		A		
Sodium Hyposulfate				N/A	N/A						A	A	
Sodium Metaphosphate	A	A	A	B	A	A	A		A		A	A	
Sodium Metasilicate	A			D	N/A	A	A		A	A	A	A	A
Sodium Nitrate	A	A	A	A	A	A	B	D	A	A	A	B	B
Sodium Perborate	A	B	A	B	N/A	A	B	B	A	A	A	B	B
Sodium Peroxide	B	A	A	D	A	A	B	D	A	B	A	A	C
Sodium Phosphate Alkaline	A	A				A	A		A		A		B
Sodium Phosphate Neutral	A	A		B	A	A	A		A	A	A		B
Sodium Polyphosphate	A	A	A	C	A	A	A	D	A	A	A	B	
Sodium Silicate	A	A	A	B	A	A	A		A	A	A	A	C
Sodium Sulfate	A	A	A	B	A	A	A	A	A	A	A	B	B
Sodium Sulfide	A	A	A	N/A	A	A	A	A	A	A	A	B	B
Sodium Sulfite	A	D	B			A	A	A	A		A	B	D

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Sodium Tetraborate		A	A	B	N/A	A	A			A	A	A	
Sodium Thiocyanate			A			A		A	D		A		
Sodium Thiosulfate	A	B	A	C	A	A	B		A	A	A	A	
Sorghum		A		A	N/A	A	A			A	A	A	
Soy Sauce		A		A	N/A	A	A			A	A	A	
Soybean Oil			A			A			A	C	A	A	
Stannic Chloride	A	B	A	C	A	A	A	B	A	A	A	D	B
Stannic Fluoborate				C	N/A	A	A				A	A	
Stannous Chloride	A	C	B	N/A	A	A	A	B	B	B	A	A	B
Starch	A	A	B	A	N/A	A	C		A	A	A	A	
Stearic Acid	A	A	B	A	A	A	B	B	C	A	A	A	C
Stoddard Solvent	C	A	C	A	A	A	A	D	D	D	A	A	
Styrene		A		A	N/A	C	D	D	D	C	A	A	
Sugar (liquids)	A	A		A	N/A	A	A	A	A	A	A	A	B
Sulfate Liquors	A	B	A	D	A	A	A		A	A	A	B	B
Sulfur	D	A	B			A	C		C	A	A		
Sulfur Chloride	C	A	C	D	A	A	D	C	D	D	A	D	A
Sulfur Dioxide Dry	A	B	A	B	A	A	D	B	A	A	A	A	B
Sulfur Dioxide Wet	A	C	B	B	A	A	D	B	A	A	A	A	D
Sulfur Trioxide	D	A	C	N/A	N/A	A	D	B	C	D	A	A	
Sulfuric Acid (to 10%)	A	C	A	D	A	A	D	D	B	A	A	B	C
Sulfuric Acid (10-75%)	A	D	A	D	A	A	D	D	B	A	A	D	C
Sulfuric Acid (75-95%)	C	D	B	N/A	A	A	D	D	A	A	A	D	C
Sulfuric Acid (95-100%)	C	D	B	N/A	A	A	D	D	D	B	A	D	A
Sulfurous Acid	A	D	B	C	A	A	B	D	B		A	C	C
Syrup	A					A	A			A	A	A	
Tallow	A	A	C	A	N/A	A	A			B	A	A	
Tannic Acid	A	C	B	B	B	A	A	B	A		A	A	B
Tanning Liquors	A	A	A	B	N/A	A	A		B		A	A	B
Tartaric Acid	A	B	A	B	B	A	A	A	B	A	A	C	B
Tetrachlorethane	C	C		A	A	A	D	D			A	A	
Tetrahydrofuran	C	A	C	A	B	D	D	B	D	B	A	A	B
Toluene, Toluol	C	A	C	C	A	A	D	D	B	D	A	A	A
Tomato Juice	A	A	A	B	A		A		D	A	A	A	A
Trichloroethane	C	C		A	A	A	D	D	D	D	A	A	
Trichloroethylene	C	C	C	D	B	A	C	D	D	D	A	B	B
Trichloropropane				A	N/A	A	A			D	A	A	A
Tricresylphosphate	A	A	B	C	D	B	D	C	A		A	A	

	PLASTICS					ELASTOMERS					ALLOYS		
	POLYPROPYLENE	NYLON	POLYETHYLENE	ACETAL COPOLYMER	KYNAR	VITON	BUNA	SILICONE	EPDM	SANTOPRENE	KALREZ®	316 STAINLESS STEEL	HASTELLOY
Triethylamine	D	A		D	A	A	A		A	D	A	A	
Turpentine	B	A	C	A	A	A	A	D	D	D	A	A	B
Urine	A	A	A	A	A	A	A		A	A	A	A	
Varnish	A	C	C	A	N/A	A	B	D	D	D	A	A	A
Vegetable Juice		A		A	N/A	A	C			A	A	C	
Vinegar	A	C	B	B	B	A	B	A	A	A	A	A	B
Vinyl Acetate				N/A	A	D	D		B	B	A		
Vinyl Chloride		A		N/A	B	A	D		C		A		A
Water Acid Mine	A	B	A	A	A	A	A	B	A	A	A	A	A
Water Deionized	A		A	N/A	A	A	A		A	A	A	A	B
Water Distilled	A	A	A	B	A	A	A		A	A	A	A	A
Water, Fresh	A	A	A	A	A	A	A	B	A	A	A	A	A
Water, Salt	A	A	A	A	A	A	A		A	A	A	A	A
Weed Killers		A		A	N/A	A	B				A	A	
Whey				A	N/A	A	A		A	A	A	A	
Whiskey & Wines	A	A		A	A		A	A	A	A	A	A	
Xylene	C	A	C	A	A	B	D	D	D	D	A	A	B
Xylol	D					A	C	D	D	D	A		
Yeast	A		A			A	A				A		
Zeolite						A	A		B	A	A		
Zinc Acetate	A					C	B		A	A	A	B	
Zinc Chloride	A	C	A	C	A	A	A	D	A	A	A	C	B
Zinc Hydrosulphite		A		C	N/A		A		A	A	A	A	
Zinc Sulfate	A	C	B	C	A	A	A	A	A	A	A	A	B
Zirlite	A		B	C	A	C	B		A		A		

CONVERSION DATA



TO CONVERT	TO	MULTIPLY BY
BAR	PSI	4.5
CENTIMETERS	Inches	0.3937
Centimeters	Feet	0.03280
Centimeters	Meters	0.01
Centimeters	Millimeters	10
CUBIC CENTIMETERS	Cubic feet	3.53x10 <sup>-5</sup>
Cubic Centimeters	Cubic inches	6.102x10 <sup>-2</sup>
Cubic Centimeter	Cubic meters	10 <sup>-6</sup>
Cubic Centimeters	Cubic yards	1.308x10 <sup>-6</sup>
Cubic Centimeters	Gallons	2.642x10 <sup>-4</sup>
Cubic Centimeters	Liters	10 <sup>-3</sup>
Cubic Centimeters	Pints (liq.)	2.113x10 <sup>-3</sup>
Cubic Centimeters	Quarts (liq.)	1.057x10 <sup>-3</sup>
CUBIC FEET	Cubic centimeters	2.832x10 <sup>4</sup>
Cubic Feet	Cubic inches	1728
Cubic Feet	Cubic meters	0.02832
Cubic Feet	Cubic yards	0.03704
Cubic Feet	Gallons U.S.	7.48052
Cubic Feet	Imperial gallons	6.23
Cubic Feet	Liters	28.32
Cubic Feet	Pints (liq.)	59.84
Cubic Feet	Quarts (liq.)	29.92
CUBIC FOOT WATER	Pounds	62.4
Cubic Foot Water	Ounces	998.8
Cubic Foot Water	Kilograms	28.315
CUBIC INCHES	Cubic centimeters	16.39
Cubic inches	Cubic feet	5.787x10 <sup>-4</sup>
Cubic inches	Cubic meters	1.639x10 <sup>-5</sup>
Cubic inches	Cubic yards	2.143x10 <sup>-5</sup>

TO CONVERT	TO	MULTIPLY BY
Cubic inches	Gallons	4.329x10 <sup>-3</sup>
Cubic inches	Liters	1.639x10 <sup>-2</sup>
Cubic inches	Pints (liq.)	0.03463
Cubic inches	Quarts (liq.)	0.01732
FEET	Centimeters	30.48
Feet	Inches	12
Feet	Meters	0.3048
Feet	Yards	1/3
FEET OF WATER	Atmospheres	0.02950
Feet of Water	Inches of Mercury	0.8826
Feet of Water	Kgs. sq. cm.	0.03048
Feet of Water	Lbs. sq. ft.	62.43
Feet of Water	Lbs. sq. inch	0.4335
GALLONS, U.S.	Cubic centimeters	3785
Gallons, U.S.	Cubic feet	0.1337
Gallons, U.S.	Cubic inches	231
Gallons, U.S.	Cubic meters	3.785x10 <sup>-3</sup>
Gallons, U.S.	Cubic yards	4.951x10 <sup>-3</sup>
Gallons, U.S.	Fluid ounces	128
Gallons, U.S.	Liters	3.785
Gallons, U.S.	Pints (liq.)	8
Gallons, U.S.	Quarts (liq.)	4
Gallons, U.S.	Imperial gallons	0.83267
GALLONS (IMP)	U.S. gallons	1.20095
GALLONS, U.S.	Pounds of water	8.3453
Gallons, U.S.	Kilograms	3.785
GALLONS/MIN	Cubic feet/sec.	2.228x10 <sup>-3</sup>
Gallons/Min.	Liters/sec.	0.06308
Gallons/Min.	Liters/Min.	3.785
Gallons/Min.	Cu. ft. hr.	8.0208

TO CONVERT	TO	MULTIPLY BY
GRAMS	Dynes	980.7
Grams	Grains	15.43
Grams	Kilograms	10 <sup>-3</sup>
Grams	Milligrams	103
Grams	Ounces	0.03527
Grams	Ounces (troy)	0.03215
Grams	Pounds	2.205x10 <sup>-3</sup>
HORSE-POWER	B.T. Units/min.	42.44
Horse-power	Foot-lbs./min.	33.000
Horse-power	Foot-lbs./sec.	550
Horse-power	Horse-power (metric)	1.014
Horse-power	Kg-calories min.	10.70
Horse-power	Kilowatts	0.7457
Horse-power	Watts	745.7
INCHES	Centimeters	2.540
Inches	Millimeters	25.4
Inches	Meters	0.0254
Inches	Feet	0.0833
INCHES OF MERCURY	Kgs./sq. cm.	0.03453
Inches of Mercury	Lbs./sq. ft.	70.73
Inches of Mercury	Lbs./sq. inch	0.4912
INCHES OF WATER	Atmosphere	0.002458
Inches of Water	Inches of Mercury	0.07355
Inches of Water	Kgs./sq. cm.	0.002450
Inches of Water	Ounces/sq. inch	0.5781
Inches of Water	Lbs./sq. ft.	5.202
Inches of Water	Lbs./sq. inch	0.03613
KILOGRAMS	Pounds	2.205
Kilograms	Tons (short)	1.102x10 <sup>-3</sup>
Kilograms	Grams	103
LITERS	Cubic centimeters	103
Liters	Cubic feet	0.03531

TO CONVERT	TO	MULTIPLY BY
Liters	Cubic inches	61.02
Liters	Cubic meters	10 <sup>-2</sup>
Liters	Cubic yards	1.308x10 <sup>-3</sup>
Liters	Gallons	0.2642
Liters/min.	Gallons/min.	0.264
Liters	Pints (liq.)	2.113
Liters	Quarts (liq.)	1.057
METERS	Centimeters	100
Meters	Feet	3.281
Meters	Inches	39.37
Meters	Kilometers	10 <sup>-3</sup>
Meters	Millimeters	103
Meters	Yards	1.094
MILLIMETERS	Centimeters	0.1
Millimeters	Inches	0.03937
POUNDS (AVOIR.)	Ounces	16
Pounds (avoir.)	Drams	256
Pounds (avoir.)	Grains	7000
Pounds (avoir.)	Tons (short)	0.0005
Pounds (avoir.)	Grams	453.5924
Pounds (avoir.)	Pounds (troy)	1.21528
Pounds (avoir.)	Ounces (troy)	14.5833
Pounds (avoir.)	Kilograms	0.454
POUNDS OF WATER	Cubic feet	0.01602
Pounds of Water	Cubic inches	27.68
Pounds of Water	Gallons	0.1198
Pounds of Water	Imperial gallon	0.10
POUNDS/SQ. INCH	Atmospheres	0.06804
Pounds/Sq. Inch	Feet of Water	2.307
Pounds/Sq. Inch	Inches of Mercury	2.036
Pounds/Sq. Inch	Kgs. sq. cm.	0.07031
Pounds/Sq. Inch	Bars	0.06895



## WARRANTY

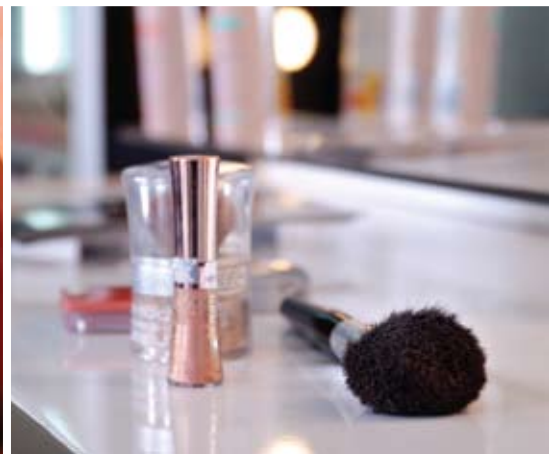
ITT Corporation warrants that at the time of shipment the product manufactured by ITT and sold hereunder (“the product”) shall be in conformity with applicable written specifications and descriptions and will be free from defects in material and workmanship for a period of 1 year or period stated on the product packaging. The warranty will not extend to a product which becomes defective resulting from damage in the course of transportation or by storage operation, use, or maintenance in an environment not conforming to the instructions or specifications of ITT, or if the product is altered or modified in any way.

ITT’s sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.

Warranty is only valid with proof of purchase from an authorized ITT dealer.

Please note that the warranty on the product is with the place of purchase. For further information on ITT warranties or to make a warranty claim, please contact your local ITT dealer or visit our website at: **[www.itt.com](http://www.itt.com)**.

This warranty does not affect your statutory rights.



**RETURN POLICY**

If you, or your customer, need to return a product for warranty consideration, the following steps should be followed for the best possible service.

1. Contact your local customer service center for a return material authorization (RMA) number. They will, whenever possible, trouble-shoot the problem with you or your customer to resolve the claim; but if the product has to be returned, use the RMA number given to you by the customer service representative.
2. When it arrives at our facility, we will review the problem, determine whether it is warranty or not, estimate cost and time required to repair the product, then contact you with this information.
3. For problems covered under our one year limited warranty, repairs will be completed or a replacement product will be returned to you.
4. For problems deemed non-warranty, we will request a written authorization from you for the estimated repair costs, repair the product, and return it with a detailed parts and labor breakdown and invoice for the charges.



*Engineered for life*



## BRAND WEBSITES

### NEW FEATURES

Our website is constantly updated to provide “up to the minute” detailed information. Recent new features include:

- The full trade catalog now available in a downloadable PDF format so you can choose the relevant pages for distribution to your customers.
- Improved and more detailed technical data also available in PDF format.

### COMPREHENSIVE DETAILS

- Comprehensive search facility to speed up location of the required product.
- Get full technical data by clicking through the links for each category and product area.
- Many exploded diagrams are available to assist in identifying parts.
- Allows your customers the option to view data at the same time, helping to correctly identify the required item.
- All technical data sheets in PDF format for downloading.



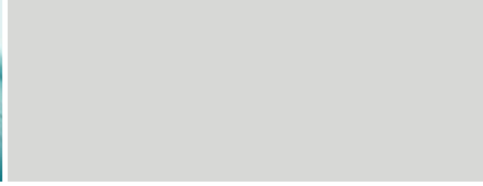
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