

Considerations for Selecting and Using Spray Hose

One of the most demanding hose applications is chemical spray, as seen in lawn care and pest control. The hose is subject to both internal and external stress. Internal hose stress results from the high pressures used and the aggressive nature of the chemicals. External stress is applied to the hose by pulling and dragging the hose, as well as exposure to the freshly applied chemicals.

Several Kuri Tec® hoses are offered for use in chemical spray applications and, in order to obtain optimum performance and service life, it is essential that the proper hose be selected and that proper care be taken in handling the hose.

What type of chemical is being conveyed?

In general, lawn care and pest control chemicals fall into two classifications, based on the physical form of the substance: wettable powders (WP) and emulsifiable liquid concentrates (EC).

Wettable powders are supplied in dry powder or granular form and are dissolved in water to create a sprayable solution. The substances are generally stable when in solution and will not “settle out” when allowed to stand. All of our pest control, lawn, and tree chemical spray hoses will handle most of these wettable concentrates in aqueous solutions at normal suggested concentrations.

Emulsifiable concentrates are supplied in a liquid form in which the herbicide or pesticide is dissolved in a carrier that is itself a solvent or oil-based substance. When mixed with water, these substances become “emulsions” in which the chemicals are not truly dissolved in the water. When allowed to stand, the chemicals will separate from the water, generally floating to the top. The emulsified carriers themselves have an effect on the hose’s core tube and, in combination with the other chemicals being used, can have a significant effect on the hose material when they separate and form a more concentrated phase.

For emulsifiable concentrate chemicals, we suggest the use of Kuri Tec hoses using PVC/Polyurethane blend compounds in the core tube, such as Series A1628, A1661 and A1687. “All PVC” spray hoses such as Series

K4131 and K1251 are not suggested for use with these chemicals, because of the possibility of phase separation in the mixture.

Regardless of the type of hose used with the emulsifiable concentrate chemicals, it is recommended that the hose be drained if it is going to stand for an extended period of time, since even on a reel the chemicals may separate out of the water emulsion and collect in concentrated bands at the top of the reel.

NOTE: All Kuri Tec hose suggestions are for aqueous solutions or emulsions of the chemical herbicide, pesticide or fertilizer in the suggested concentrations. For transfer of an emulsifiable concentrate in its pure form, a premium chemical spray hose such as Series A4086, with its polyethylene liner, is suggested.

At what working pressure and operating temperature will the hose be used?

All hoses, but particularly thermoplastic hoses, are affected by temperature. As the operating temperature rises, the material will soften slightly and the working and burst pressures will be reduced. It is not unusual for the hose temperature in a lawn spraying application to rise to 120° F. in summer. The individual pressure rating tables should be consulted to determine the maximum working pressure at 122° F. In general, one can expect a reduction of 40% to 60% in the working pressure rating at 120° F., when compared to the working pressures for the same hose at 70° F. This factor must be considered when selecting the proper hose.

What type of fittings should be used?

As explained in the Fitting Compatibility Guide, a double-barbed fitting held in place with two band clamps appears to be the best choice for Kuri Tec spray hoses. In addition, the use of spring guards is highly recommended in order to prevent kinking of the hose at the fittings. Properly crimped ferrules over multi-barbed fittings are also suitable, provided a gap is provided at the end of the ferrule to avoid “wicking” of the fluid along the yarn.

Summary of Suggested Spray Hose Applications

Series	Description					Suitability		
	Core Materials	Jacket Properties				Working Pressure (PSI @ 70°F)	Wettable Powders	Emulsifiable Liquids
		Material	Color	Surface	Perforations			
K3150	PVC	PVC	Clear	Smooth	No	250	Yes	No
K4131	PVC	PVC	Yellow	Ribbed	Yes	600	Yes	No
A1251 (i)	PVC	PVC	Yellow	Ribbed	Yes	600	Yes	No
A1628	PVC/TPU	PVC	Grey	Ribbed	Yes	300	Yes	Yes
A1661 (i)	PVC/TPU	PVC	Yellow	Ribbed	Yes	600	Yes	Yes
A1687 (i)	PVC/TPU	PVC	Green	Ribbed	Yes	800	Yes	Yes
A4086 (i)	LLDPE	TPE	Blue	Smooth	Yes	800	Yes	Yes (ii)
A1710S	LLDPE	EVA	Translucent	Smooth	No	250	Yes	Yes (ii)
K4350	EVA	EVA	Translucent	Smooth	No	150 - 250	Yes	Yes (ii)

NOTE : (i) Two-pass reinforcement provides improved kink resistance and pressure performance.

(ii) Suitable for transfer of emulsifiable concentrate in undiluted form.

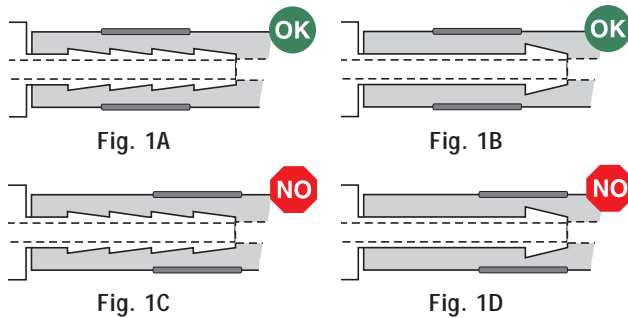
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Fitting Suggestions for Kuri Tec® Hose & Tubing

It is extremely important that the fitting and hose or tubing be properly matched in size and type. The insert should always be slightly larger than the tubing to create a slight expansion of the tube and provide a good consistent seal. If a clamp or ferrule is used to compress the hose, caution must be used to prevent over-crimping the ferrule or over-tightening the clamp. More pressure does not necessarily improve fitting retention.

We do not recommend the use of reusable fittings unless the hose and fitting have been specifically designed to be compatible and have been thoroughly tested in combination prior to use.

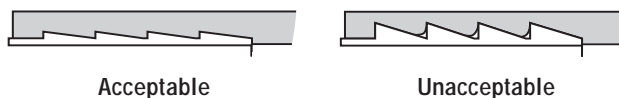
Clamps over barbed fittings



In the illustrations above, the clamps are properly positioned in Figure 1A and 1B, directly over the middle barbs and behind the first barb. This is extremely important in the case of single-barb fittings, as shown in Figure 1B, since the barb is generally much larger than the shank of the fitting. The compressed material cannot pass over the barb when under tension, thus securely holding the fitting to the hose.

In Figures 1C and 1D, the clamp has been improperly positioned too close to the end of the fitting. In Figure 1C, only the barb nearest the end of the fitting is effective in maintaining fitting retention. The first two barbs serve no purpose whatsoever in providing fitting retention or leak resistance. In Fig. 1D, the situation is even worse, since the clamp can very easily cut the core tube over the enlarged barb, leading to leakage and subsequent cover blisters or bursts.

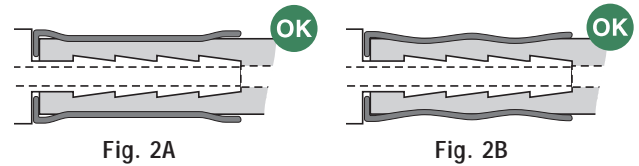
When choosing multi-barb fittings for use with Kuri Tec hose, as in Fig. 1A and 1C, it is important that the barbs not be too deep. The core tubes in Kuri Tec hoses are generally somewhat harder than conventional rubber tubes and therefore the material cannot flow into the deep barb, as it would with a soft rubber compound.



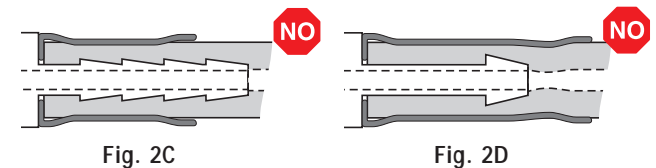
Ferrules crimped over barbed fittings

When properly crimped, a metal ferrule over a multi-barbed fitting can provide excellent fitting retention and leak resistance. However, excessive crimping pressure can damage the core tube, leading to hose failure. Extreme care must also be taken to control the crimping

diameter for hydraulic fittings. For this reason, as a general rule we do not recommend the use of one-piece crimped hydraulic fittings with Kuri Tec hoses.



In figures 2A and 2B above, two styles of crimping die have been used successfully. The ferrules and fittings are properly matched in length.

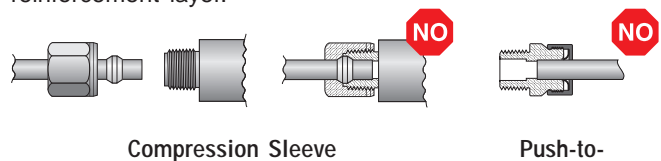


In Fig. 2C, the ferrule is much shorter than the barbed insert. Without the protection of the ferrule, repeated harsh flexing of the hose at the fitting can damage the tube. In addition, the short ferrule does not take full advantage of the sealing or retention properties of the barbed insert.

In figure 2D, there are two potential problems: 1) The excessively-long ferrule can reduce the inside diameter of the hose just beyond the fitting; and 2) a single-barb fitting is not the ideal insert for a crimped ferrule. Because of the increased depth of the single barb, the tube can be cut by the force of the crimping before sufficient compression is exerted on the shank of the fitting.

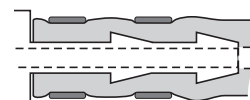
Compression Fittings

Compression fittings depend solely on contact with the outer surface of the tubing to provide sealing and holding power. There is no seal on the inner surface of the tubing. With the exception of 220/221 Series LLDPE tubing, we do not recommend the use of compression fittings with Kuri Tec hose and tubing. To work properly, the material must be hard and smooth and there must be no yarn reinforcement layer.



Fitting suggestions for Kuri Tec® spray hoses

In addition to the properly installed fittings shown in Fig. 1A, 1B, 2A and 2B above, we also suggest the use of a two-barb clamped fitting when high pressures are involved.



The double-barb fitting, held in place by two properly positioned clamps, provides excellent fitting retention and

leak resistance without risk of damage to the core tube or deterioration of the yarn reinforcement due to wicking.

Hose failure near a fitting

A hose is most susceptible to failure near the fitting. The installation of the fitting involves some risk of damage to the core tube. There is also some possibility of slight leakage along a fitting and subsequent yarn wicking, particularly if a one-piece crimped fitting is used. The greatest amount of flexing often occurs near the fitting at either the supply or service end of the hose.

In the investigation of a hose failure near the fitting, it is essential that the fitting/hose interface be examined. In the field, if the failure or deterioration is isolated to the area near the fitting, it is best to cut off the end of the hose, reinstall a new fitting, and monitor the hose in service to see if the problem reoccurs.

If the problem involves a spray hose and fluid slowly leaking through the cover perforations near the fitting, the most likely cause is wicking along the reinforcing yarn from the end of the hose or from a cut or break in the

core tube. Such wicking can extend over several feet and a leak may be seen at a considerable distance from the source of the leak.

If a hose is being returned to the supplier for investigation of a failure, it is essential that the fitting . . . or at least the section of hose in contact with the fitting . . . be returned. Only by examining the inner surface of the tube that was in contact with the fitting can one determine with certainty if the problem began at the fitting.

WARNING

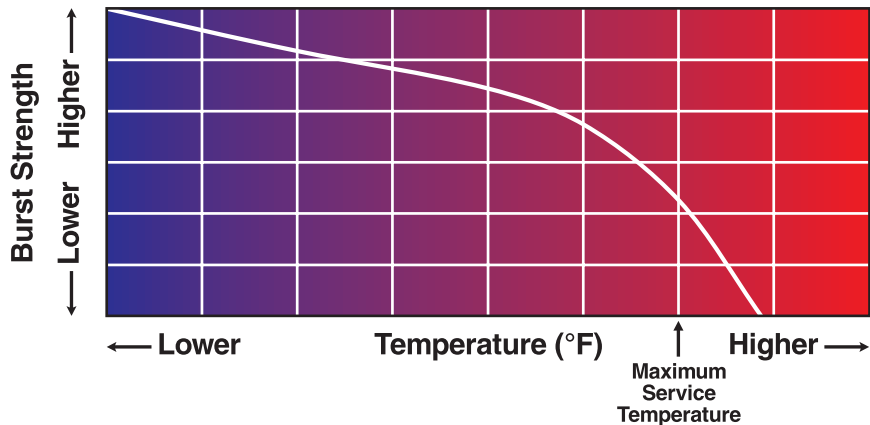
The above comments and fitting suggestions are intended for use as guidelines only. The information provided is based on tests which we believe to be reliable and on our past observations and experience. No warranty is expressed or implied, as applications and methods of fitting installation can vary widely. Before placing a hose in service, the user **must** determine the suitability of the fitting and hose/tube for his or her intended use. The user assumes all risk and liability resulting from the use of any Kuri Tec product with any fitting whatsoever.

Temperature Dependence of Pressure Rating

As a general rule, the working pressure ratings for plastic reinforced hoses are based on room temperature conditions. The maximum allowable pressure for a hose decreases as the temperature increases and the material becomes softer and more elastic. Fitting retention decreases at higher temperatures as the compression on the material declines.

Working pressure ratings can be affected significantly by the type of fitting used, the method of attachment, and the temperature to which the hose assembly is exposed in service. Repeated intermittent periods of exposure to elevated temperatures can affect fitting retention and it is, therefore, very difficult to assign working pressure ratings at high temperatures. The graph below demonstrates the overall trend.

Burst strength decreases as temperature increases



Working Pressure Ratings

Working pressure ratings are given in this catalog at 70°F and 122°F. Between 122°F and the maximum service temperature, it must be noted that a rapid decline in the pressure rating of the hose may occur, and all factors relating to the hose, fittings and service conditions must be taken into consideration.

No warranty is expressed or implied, as applications and methods of fitting installation may vary widely. Before placing a hose in service, the user **must** determine the suitability of the product under the correct working conditions, and assumes all risk and liability in connection therewith.

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Chemical Resistance Guide

Many new materials have been developed to handle the wide range of modern chemicals being used in industry today. Many of these materials are now being used in the construction of Kuri Tec® hose and tubing products.

The following guide has been prepared to assist the user in the selection of the correct hose for the application. The recommendations are based on the best chemical data available at the time of printing. This guide will be continuously reviewed and new information added as it becomes available.

A material's resistance to the effects of a chemical depends not only upon the particular chemical, but also on other factors such as length of exposure, service temperature, pressure, fluid velocity, and the relative concentration of each component in multi-component mixtures. Therefore, no guarantee is expressed or implied.

The chemical resistance ratings for materials are based on pure material samples and may not take into account specific factors related to the material when used in a hose or tube. It is always advisable that the product be tested under actual conditions.

Additionally, the Chemical Resistance Guide which follows does not imply conformance to any food handling regulations or federal or state/provincial laws governing hose and tubing applications.

Before using any Kuri Tec hose/tubing product with any chemical substance the user must determine the suitability of the product for his/her intended use. The user assumes all risk and liability for the use of any Kuri Tec product with any chemical or other substance.

Key to Chemical Resistance Guide Ratings

- E = Excellent — Little or no effect due to exposure to the chemical.
- G = Good — Satisfactory service expected, but some deterioration may occur after lengthy exposure or under extreme conditions.
- L = Limited — Variable resistance depending upon the conditions of use (e.g. nature of the chemical, its concentration, service temperature, pressure, etc.).
- U = Unsuitable — Not resistant. Not recommended for use under any conditions.
- C = Cautionary — Although the chemical resistance of the material may be good, special factors exist that must be considered in hose applications, such as regulatory issues, permeation of vapors, and safety, health or environmental concerns.

Key: E=Excellent G=Good L=Limited U=Unsatisfactory C=Cautionary

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Acetaldehyde	U	U	U	U	L	U	G	L	G	U	U	U
Acetate Solvents - Pure	U	U	U	U	G	L	E	G	L	U	U	U
Acetic Acid - Glacial	L	U	L	U	U	U	L	U	U	U	U	U
Acetic Acid 0-10%	E	G	G	G	E	G	E	G	E	E	U	U
Acetic Acid 10-20%	G	L	G	G	G	L	E	G	E	G	U	U
Acetic Acid 20-30 Pct	G	L	G	L	G	L	E	G	E	L	U	U
Acetic Acid 30-60%	G	L	G	L	L	L	G	L	L	U	U	U
Acetic Acid 80%	L	L	L	L	U	U	U	U	L	U	U	U
Acetic Acid Vapors	G	G	G	G	G	L	G	L	G	L	U	U
Acetic Anhydride	U	U	U	U	U	U	U	L	L	U	U	U
Acetone	U	U	U	U	L	U	E	G	L	U	L	U
Acetylene	C	C	C	C	U	U	U	U	U	U	C	C
Acrylonitrile	L	U	L	U	-	-	-	-	-	-	-	-
Adipic Acid	G	L	G	L	G	L	E	G	E	G	U	U
Alcohol (See Type)	-	-	-	-	-	-	-	-	-	-	-	-
Allyl Alcohol 96%	U	U	U	U	E	G	E	G	E	G	U	U
Allyl Chloride	U	U	U	U	G	L	G	L	L	U	U	U
Alum	E	E	E	E	E	E	E	E	E	G	E	E
Aluminum Chloride	E	E	E	E	G	G	G	G	G	C	G	G
Aluminum Fluoride	G	G	G	G	G	G	G	G	L	G	L	L
Aluminum Hydroxide	E	E	E	E	G	G	G	G	G	G	L	L
Aluminum Nitrate	E	E	E	E	E	E	E	E	E	-	L	L
Aluminum Oxochloride	E	E	E	E	G	G	G	G	G	-	-	-
Aluminum Sulfate	E	E	E	E	E	E	E	E	E	G	G	G
Ammonia - Aqueous	L	U	L	U	G	G	E	G	E	-	U	U
Ammonia - Dry Gas	L	U	L	U	E	E	E	G	E	-	U	U
Ammonia - Liquid	U	U	U	U	G	L	E	L	E	U	U	U
Ammonium Carbonate	E	E	E	E	E	E	E	E	E	-	E	E
Ammonium Chloride	E	E	E	E	E	E	E	E	E	-	G	L
Ammonium Fluoride 25%	U	U	U	U	G	G	G	G	G	-	L	U
Ammonium Hydroxide 28%	L	U	L	U	G	G	E	E	E	E	L	U
Ammonium Metaphosphate	E	E	E	E	G	G	G	G	E	E	G	G
Ammonium Nitrate	E	E	E	E	E	E	E	E	E	-	G	G
Ammonium Persulfate	E	E	E	E	E	E	E	E	E	-	G	G
Ammonium Phosphate	G	G	G	G	G	G	E	G	E	-	G	G
Ammonium Phosphate - Neutral	E	E	E	E	G	G	E	G	E	-	G	G
Ammonium Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Ammonium Sulfide	E	E	E	E	E	E	E	E	E	-	E	E
Ammonium Thiocyanate	E	E	E	E	E	E	E	E	E	-	G	G
Amyl Acetate	U	U	U	U	U	U	L	U	U	-	U	U
Amyl Alcohol	L	U	L	U	G	L	G	L	G	L	U	U
Amyl Chloride	U	U	U	U	U	U	U	U	U	-	-	-
Aniline	U	U	U	U	U	U	U	U	U	U	U	U
Aniline Chlorohydrate	U	U	U	U	U	U	U	U	U	U	U	U
Aniline Hydrochloride	U	U	U	U	U	U	U	U	U	U	U	U
Animal Oils	L	U	L	U	U	U	L	U	L	U	G	L
Anthraquinone	E	E	E	E	E	E	E	E	E	-	U	U
Anthraquinonesulfonic Acid	E	E	E	E	E	E	E	E	E	-	U	U
Antimony Trichloride	E	E	E	E	E	E	E	E	E	-	E	E
Apple (Sauce or Juice)	E	E	-	-	-	-	E	E	-	-	-	-
Aqua Regia	L	U	L	U	U	U	U	U	U	U	U	U
Aromatic Hydrocarbons	U	U	-	-	-	-	-	-	-	-	-	-
Arsenic Acid 80%	E	G	E	G	E	G	E	G	G	-	U	U

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU		
	Temperature (°F)												
	70	150	70	125	70	150	70	150	70	150	70	150	
Arylsulfonic Acid	L	U	L	U	-	-	-	-	-	-	-	U	U
Asphalt	L	U	L	U	L	U	L	U	U	U	G	L	
ASTM #1 Oil	L	U	L	U	-	-	-	-	-	-	-	G	G
ASTM #3 Oil	L	U	L	U	-	-	-	-	-	-	-	G	G
ASTM Fuel A	L	U	L	U	-	-	-	-	-	-	-	G	G
ASTM Fuel B	U	U	U	U	-	-	-	-	-	-	-	G	L
ASTM Fuel C	U	U	U	U	-	-	-	-	-	-	-	G	L
Barium Carbonate	E	E	E	E	E	E	E	E	E	E	-	E	E
Barium Chloride	E	E	E	E	E	E	E	E	E	E	-	E	E
Barium Hydroxide	E	E	E	E	E	E	E	E	E	E	-	G	L
Barium Sulfate	E	E	E	E	E	E	E	E	E	E	-	E	E
Barium Sulfide	E	E	E	E	E	E	E	E	E	E	-	E	E
Beer	E	L	-	-	-	-	E	L	-	-	-	-	-
Beet-Sugar Liquor	E	E	-	-	E	E	E	E	E	E	-	-	-
Benzaldehyde	U	U	U	U	U	U	E	G	L	U	U	U	U
Benzene	U	U	L	U	U	U	E	L	U	U	L	U	U
Benzoic Acid	G	L	G	L	G	G	G	G	G	G	-	U	U
Benzol	U	U	L	U	U	U	U	U	U	U	U	L	U
Bismuth Carbonate	E	E	E	E	E	E	E	E	E	E	-	E	E
Black Liquor (Paper industry)	E	E	E	E	E	E	E	E	E	E	-	-	-
Bleach - 12.5% Active CL	G	L	G	L	G	L	G	L	G	-	L	U	U
Borax	E	E	E	E	E	E	E	E	E	E	-	E	E
Boric Acid	E	E	E	E	E	E	E	E	E	E	-	G	U
Boron Trifluoride	E	E	E	E	E	E	E	E	E	E	-	E	E
Brake Fluid	U	U	U	U	-	-	-	-	-	-	-	U	U
Brine	E	E	E	E	E	E	E	E	E	E	-	G	U
Bromic Acid	E	L	E	L	G	G	G	G	G	-	U	U	U
Bromine - Liquid	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromine - Water	U	U	U	U	U	U	U	U	U	U	U	U	U
Butadiene	L	U	L	L	U	U	U	U	U	U	-	-	-
Butane	C	C	C	C	U	U	U	U	U	U	C	C	C
Butanol - Primary	U	U	U	E	G	E	G	G	-	L	U	U	U
Butanol - Secondary	U	U	U	U	E	G	E	G	-	L	U	U	U
Butter	L	L	-	-	-	-	L	L	-	-	-	-	-
Butyl Acetate	U	U	L	U	U	U	U	U	U	U	L	U	U
Butyl Alcohol	L	U	L	L	E	G	E	G	E	-	L	U	U
Butyl Cellosolve	U	U	U	U	G	L	E	G	-	-	-	-	-
Butyl Phenol	L	U	L	U	U	U	U	U	U	-	-	-	-
Butylene	C	C	C	C	U	U	U	U	-	-	C	C	C
Butyric Acid 20%	L	U	L	U	U	U	U	U	U	U	L	U	U
Calcium Bisulfite	E	E	E	E	E	E	E	E	E	-	E	E	E
Calcium Carbonate	E	E	E	E	E	E	E	E	E	-	E	E	E
Calcium Chlorate	E	E	E	E	E	E	E	E	E	-	G	L	L
Calcium Chloride	E	E	E	E	E	E	E	E	E	-	E	G	L
Calcium Hydroxide	E	E	E	E	E	E	E	E	E	-	G	L	L
Calcium Hypochlorite	E	E	E	E	E	E	G	E	G	-	U	U	U
Calcium Nitrate	E	E	E	E	E	E	E	E	E	-	E	E	E
Calcium Sulfate	E	E	E	E	E	E	E	E	E	-	E	E	E
Cane Sugar Liquors	E	E	-	-	G	G	G	G	G	-	-	-	-
Carbon Bisulfide	U	U	U	U	U	U	U	U	U	U	-	-	-
Carbon Dioxide (Aqueous Solution)	E	E	E	E	E	E	E	E	E	-	E	E	E
Carbon Dioxide Gas (Wet)	E	E	E	E	E	E	E	E	E	-	E	E	E
Carbon Monoxide	E	E	E	E	G	G	G	G	G	-	E	E	E

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Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Carbon Tetrachloride	U	U	L	U	U	U	L	U	U	U	L	U
Carbonic Acid	L	U	G	G	G	G	G	G	G	U	U	
Casein	E	L	E	E	E	E	E	E	E	-	E	E
Castor Oil	E	E	E	E	U	U	L	U	L	U	E	E
Catsup	E	G	-	-	-	-	-	-	-	-	-	-
Caustic Potash	E	E	E	E	L	L	L	L	L	-	L	U
Caustic Soda	E	E	E	E	G	L	L	L	G	-	L	U
Cellosolve	L	U	G	L	G	L	G	L	L	U	G	L
Chloracetic Acid	E	U	E	U	U	U	G	L	U	U	U	U
Chloral Hydrate	E	E	E	E	U	U	U	U	L	U	G	L
Chloric Acid 20%	E	E	E	E	-	-	-	-	-	-	U	U
Chlorinated Hydrocarbons	U	U	U	U	U	U	U	U	U	U	U	U
Chlorine Gas (Dry)	G	G	G	G	U	U	U	U	U	U	U	U
Chlorine Gas (Moist)	L	U	L	L	U	U	U	U	U	U	U	U
Chlorine Water 2%	G	L	G	L	L	U	G	L	G	L	L	U
Chlorine Water Saturated	L	U	L	U	-	-	E	G	E	L	-	-
Chlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	U	U	U	U	U	L	U	U	U	U	U	U
Chlorsulfonic Acid	L	U	L	U	U	U	U	U	U	U	U	U
Chrome Alum	E	E	E	E	G	G	E	G	E	G	E	E
Chromic Acid 10%	G	L	G	L	G	L	G	L	G	-	U	U
Chromic Acid 25%	G	L	G	L	G	L	G	L	G	-	U	U
Chromic Acid 30%	L	U	L	U	L	U	L	U	L	U	U	U
Chromic Acid 40%	L	U	L	U	L	U	L	U	L	U	U	U
Chromic Acid 50%	L	U	L	U	L	U	L	U	L	U	U	U
Chromic Acid Plating Solution	-	-	-	-	-	-	-	-	E	E	U	U
Cider	E	L	-	-	-	-	E	G	E	L	-	-
Citric Acid	E	E	E	E	E	E	E	E	E	U	U	
Coal Tar	U	U	U	U	U	U	U	U	U	U	U	U
Coconut Oil	G	L	E	G	G	L	G	L	L	U	E	E
Copper Chloride	E	E	E	E	E	E	E	E	E	-	E	E
Copper Cyanide	E	E	E	E	E	E	E	E	E	-	-	-
Copper Fluoride 2%	E	E	E	E	E	E	E	E	E	-	E	E
Copper Nitrate	E	G	E	E	E	G	E	G	E	-	E	E
Copper Sulfate	E	G	E	E	E	E	E	E	E	-	E	E
Corn Oils	E	G	-	-	-	-	L	U	-	-	-	-
Cottonseed Oil	G	L	E	E	E	G	E	G	E	-	E	E
Creosote	U	U	U	U	U	U	U	U	U	U	-	-
Cresol	U	U	-	-	U	U	U	U	U	L	U	
Cresylic Acid 50%	U	U	L	L	U	U	U	U	U	U	U	U
Crude Oil - Sour	L	U	L	U	U	U	U	U	U	U	E	E
Crude Oil - Sweet	L	U	L	U	U	U	U	U	U	U	E	E
Cyclohexane	U	U	U	U	L	U	G	G	L	U	G	L
Cyclohexanol	U	U	U	U	L	U	G	L	E	L	L	U
Cyclohexanone	U	U	U	U	U	G	L	E	L	U	U	
Deminerlized Water	E	E	E	E	E	E	E	E	E	E	L	
Dextrin	E	E	E	E	E	E	E	E	E	-	E	E
Dextrose	E	G	-	-	E	E	E	E	E	-	E	E
Di-acetone Alcohol	-	-	-	-	-	-	E	G	-	-	-	-
Diazo Salts	E	E	E	E	E	G	E	G	E	-	-	-
Dichlorobenzene	U	U	U	U	-	-	L	U	U	U	-	-
Diesel Oils	L	U	L	U	-	-	-	-	-	G	L	
Diethyl Ether	U	U	U	U	-	-	G	L	U	U	G	L

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Diethylene Glycol	G	L	G	L	E	L	E	G	G	L	U	U
Diglycolic Acid	E	G	E	E	E	G	E	G	E	-	-	-
Di-isodecyl Phthalate	U	U	-	-	-	-	-	-	-	-	-	-
Dimethylamine	U	U	U	U	U	U	U	U	U	U	U	U
Diocetyl Phthalate	U	U	U	U	-	-	G	L	G	U	-	-
Disodium Phosphate	E	E	E	E	E	E	E	E	E	-	E	E
Distilled Water	E	E	E	E	E	E	E	E	E	E	E	L
Ethers	U	U	L	U	U	U	G	L	U	U	G	L
Ethyl Acetate	U	U	L	U	L	U	E	G	L	U	L	U
Ethyl Acrylate	U	U	U	U	-	-	-	-	-	-	-	-
Ethyl Alcohol 0-50%	G	L	E	G	G	L	E	E	G	L	G	L
Ethyl Alcohol 50-98%	L	U	G	L	L	U	E	G	L	U	E	G
Ethyl Chloride	U	U	U	U	U	U	U	U	U	U	U	U
Ethyl Ether	U	U	U	U	U	U	U	U	U	U	G	L
Ethylene Bromide	E	U	U	U	U	U	U	U	U	U	U	U
Ethylene Dichloride	U	U	U	U	U	U	U	U	U	U	U	U
Ethylene Glycol	E	E	E	E	E	G	E	G	E	G	G	L
Ethylene Oxide	U	U	U	U	U	U	U	U	U	U	U	U
Fatty Acids	E	E	E	E	G	L	G	L	L	U	G	L
Ferric Chloride	E	E	E	E	E	E	E	E	E	-	E	E
Ferric Nitrate	E	E	E	E	E	E	E	E	E	-	E	E
Ferric Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Ferrous Chloride	E	E	E	E	E	E	E	E	E	-	E	E
Ferrous Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Fish Solubles	E	E	E	U	E	E	E	E	E	-	E	G
Fluorine Gas - Dry	U	U	U	U	U	U	U	U	U	U	U	U
Fluorine Gas - Wet	U	U	U	U	U	U	U	U	U	U	U	U
Fluoroboric Acid	E	E	E	E	E	E	E	G	E	-	E	E
Fluorosilicic Acid	E	E	E	E	G	L	G	L	G	-	U	U
Foric Acid	E	L	E	L	E	G	E	G	E	E	U	U
Formaldehyde (40% Aqueous)	U	U	G	G	G	L	G	L	E	G	-	-
Formic Acid 3%	-	-	-	-	-	-	-	-	-	E	E	-
Formic Acid 10%	-	-	-	-	-	-	-	-	-	E	E	-
Formic Acid 25%	-	-	-	-	-	-	-	-	-	E	E	-
Formic Acid 50%	-	-	-	-	-	-	-	-	-	E	E	-
Formic Acid 100%	-	-	-	-	-	-	-	-	-	U	U	-
Freon-12	L	U	G	L	G	L	G	L	G	-	E	E
Fructose	E	E	-	-	E	E	E	E	E	-	E	E
Fruit Pulps and Juices	E	E	-	-	E	E	E	E	E	-	E	E
Fuel Oil	G	L	G	L	U	U	G	U	U	U	E	G
Furfural	U	U	U	U	U	U	U	U	U	U	U	U
Furfuryl Alcohol	-	-	-	-	-	-	-	-	-	U	U	-
Gallic Acid	E	E	E	E	E	E	E	E	E	-	-	-
Gas - Coke Oven	G	G	G	G	-	-	-	-	-	-	G	G
Gas - Natural (Dry)	C	C	C	C	U	U	U	U	U	U	C	C
Gas - Natural (Wet)	C	C	C	C	U	U	U	U	U	U	C	C
Gasoline	U	U	U	U	U	G	L	-	-	E	G	
Gasoline - Refined	L	U	G	U	L	U	L	U	U	U	E	G
Gasoline - Sour	L	U	G	U	U	U	U	U	U	U	E	G
Gelatine	E	E	E	E	E	E	E	E	E	-	E	E
Glucose	E	E	E	E	E	E	E	E	E	-	E	E
Glycerine (Glycerol)	E	E	E	E	E	E	E	E	E	-	E	E
Glycol	E	E	E	E	E	E	E	E	E	-	G	G

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Key: E=Excellent G=Good L=Limited U=Unsatisfactory C=Cautionary

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Glycolic Acid 30%	E	E	E	E	E	E	E	E	E	-	U	U
Grease	E	L	E	G	-	-	-	-	-	-	E	G
Green Liquor (Paper industry)	E	E	E	E	E	E	E	E	E	-	-	-
Heptane	L	U	G	U	U	U	U	U	U	E	-	-
Hexadecanol	-	-	-	-	-	-	-	U	U	U	-	-
Hexane	L	U	L	U	G	L	E	E	-	-	-	-
Hexanol, Tertiary	L	U	L	U	G	L	G	L	L	U	G	-
Hydrobromic Acid 20%	E	G	E	G	G	G	G	G	G	-	U	U
Hydrochloric Acid 10%	E	G	E	G	E	E	E	E	E	E	U	U
Hydrochloric Acid 48%	E	G	E	G	E	G	E	G	G	-	U	U
Hydrofluoric Acid 4%	G	G	G	G	G	G	G	G	E	E	U	U
Hydrofluoric Acid 10%	G	L	G	L	G	G	G	G	E	E	U	U
Hydrofluoric Acid 48%	G	U	G	L	G	L	G	L	E	E	U	U
Hydrofluoric Acid 60%	G	U	G	U	G	L	G	L	E	E	U	U
Hydrofluorosilic Acid	G	L	G	L	-	-	-	-	-	-	U	U
Hydrogen	C	C	C	C	C	C	C	C	C	C	C	C
Hydrogen Bromide (Dry)	-	-	-	-	-	-	-	-	E	E	-	-
Hydrogen Chloride (Dry)	-	-	-	-	-	-	-	-	E	E	-	-
Hydrogen Cyanide	C	C	C	C	C	C	C	C	C	C	U	U
Hydrogen Peroxide 3 -12%	E	G	E	G	G	L	G	L	G	L	G	L
Hydrogen Peroxide 30%	E	G	E	G	G	L	G	L	G	L	G	L
Hydrogen Peroxide 50%	E	L	E	L	L	U	L	U	U	U	L	U
Hydrogen Peroxide 90%	U	U	U	U	U	U	U	U	U	U	U	U
Hydrogen Phosphide	E	L	E	L	G	G	G	G	E	E	-	-
Hydrogen Sulfide (Aqueous Solution)	E	E	E	E	E	G	E	G	E	-	-	-
Hydrogen Sulfide - Dry	E	E	E	E	E	G	E	G	E	-	-	-
Hydrobromic Acid 20%	E	G	E	G	G	G	G	G	G	-	U	U
Hydroquinone	E	E	E	E	E	E	E	E	E	-	E	E
Hypochlorous Acid	E	E	E	E	E	G	E	G	L	U	L	U
Inks	-	-	-	-	-	E	E	E	E	-	-	-
Iodine (In Alcohol)	U	U	U	U	U	U	U	U	U	U	U	U
Iso-octane	L	U	L	U	-	-	-	-	-	-	-	-
Isopropyl Acetate	U	U	-	-	-	-	-	-	-	-	-	-
Isopropylalcohol	E	G	E	G	E	E	E	E	E	-	-	-
Jelly	E	E	-	-	-	-	-	-	-	-	-	-
Jet Fuels JP 3, 4, 5	U	U	U	U	U	U	-	-	-	-	G	L
Kerosene	U	U	L	U	U	U	L	U	U	U	E	G
Ketones	U	U	U	U	L	U	E	G	L	U	G	L
Kraft Liquor (Paper industry)	E	E	E	E	E	G	E	G	G	-	-	-
Lacquer Thinners	U	U	U	U	G	L	E	G	L	U	G	-
Lactic Acid 28%	E	E	E	E	E	E	E	E	E	-	L	U
Lard Oil	E	G	E	E	G	L	G	L	G	L	E	G
Lauric Acid	E	E	E	E	-	-	L	U	-	-	L	U
Lauryl Chloride	E	E	E	E	L	U	L	U	L	-	E	G
Lauryl Sulfate	E	E	E	E	U	U	U	U	U	U	-	-
Lead Acetate	E	E	E	E	E	E	E	E	E	-	E	E
Lead Arsenate	E	E	E	E	-	-	-	-	E	E	-	-
Lead Nitrate	E	E	E	E	-	-	-	-	E	E	-	-
Lead Tetra-ethyl	E	E	E	E	-	-	-	-	E	E	-	-
Lemon Juice	E	G	-	-	-	-	-	-	-	-	-	-
Lime Sulfur	E	E	E	E	G	G	G	G	G	-	-	-
Linoleic Acid	E	E	E	E	-	-	-	-	-	-	L	U

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Linseed Oil	E	E	E	E	U	U	L	U	L	U	E	E
Liquors (Chemical)	E	G	E	G	-	-	E	G	E	G	-	-
Lubricating Oils	G	L	G	G	U	U	U	U	U	U	E	E
Magnesium Carbonate	E	E	E	E	E	E	E	E	E	-	E	E
Magnesium Chloride	E	E	E	E	E	E	E	E	E	-	E	E
Magnesium Hydroxide	E	E	E	E	E	E	E	E	E	-	G	L
Magnesium Nitrate	E	E	E	E	E	E	E	E	E	-	E	E
Magnesium Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Maleic Acid 25% Aqueous	E	E	E	E	G	G	G	G	E	E	L	U
Maleic Acid 50%	-	-	-	-	-	-	E	E	E	E	-	-
Maleic Acid Concentrated	-	-	-	-	-	-	E	G	E	G	-	-
Malic Acid	E	E	E	E	G	G	G	G	G	-	L	U
Mayonnaise	E	E	-	-	-	-	-	-	-	-	-	-
Mercuric Chloride	G	L	G	G	G	G	G	G	G	G	G	L
Mercuric Cyanide	U	U	U	U	G	G	G	G	G	G	-	-
Mercurous Nitrate	G	G	G	G	G	G	G	G	G	-	G	G
Mercury	G	G	G	G	G	G	G	G	G	L	-	-
Methyl Acetate	U	U	U	U	-	-	-	-	-	U	-	-
Methyl Alcohol	L	U	L	U	G	G	E	G	E	-	L	U
Methyl Bromide	U	U	U	U	-	-	-	-	U	U	-	-
Methyl Chloride	U	U	U	U	U	U	U	U	U	U	U	U
Methyl Ethyl Ketone	U	U	U	U	L	U	E	G	L	U	L	U
Methyl Isobutyl Ketone	U	U	U	U	L	U	E	G	L	U	-	-
Methyl Sulfate	E	G	E	G	-	-	-	-	-	-	E	G
Methyl Sulfuric Acid	E	E	E	E	G	G	G	G	E	E	U	U
Methylated Spirit	-	-	-	-	-	-	-	-	E	G	-	-
Methylene Chloride	U	U	L	U	U	U	U	U	U	U	U	U
Milk	E	E	-	-	-	-	E	E	G	L	-	-
Mineral Oils	G	L	E	E	L	U	L	U	L	U	E	E
Mineral Spirits	-	-	-	-	-	-	E	G	-	-	-	-
Molasses	E	E	E	E	E	E	E	E	E	-	E	E
Monochlorobenzene	U	U	U	U	-	-	-	-	-	-	-	-
Naphtha	U	U	L	U	U	G	L	U	U	G	U	U
Napthalene	U	U	U	U	L	U	L	U	U	-	-	-
Nickel Acetate	E	E	E	E	E	E	E	E	E	-	E	E
Nickel Chloride	E	E	E	E	E	E	E	E	E	-	E	E
Nickel Nitrate	E	E	E	E	E	E	E	E	E	-	E	E
Nickel Sulphate	E	E	E	E	E	E	E	E	E	-	E	E
Nicotine	E	E	E	E	E	E	E	E	E	-	C	C
Nicotine Acid	E	G	E	E	E	E	E	E	E	-	C	C
Nitric Acid (Anhydrous)	U	U	U	U	U	U	U	U	U	U	U	U
Nitric Acid 10%	E	G	G	L	G	L	G	G	G	G	U	U
Nitric Acid 25%	G	L	G	L	G	L	G	G	G	L	U	U
Nitric Acid 35%	G	L	G	L	L	U	G	U	L	U	U	U
Nitric Acid 40%	G	L	G	L	L	U	L	U	L	U	U	U
Nitric Acid 50%	G	U	G	U	L	U	L	U	L	U	U	U
Nitric Acid 60%	G	U	G	U	U	U	L	U	U	U	U	U
Nitric Acid 68%	L	U	L	U	U	U	U	U	U	U	U	U
Nitric Acid 70%	U	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Nitrous Oxide	E	E	E	E	-	-	-	-	-	-	E	E
Oils and Fats	E	G	E	E	G	L	G	L	G	U	E	E
Oils, Petroleum	E	G	E	E	G	L	G	L	G	U	E	E
Oleic Acid	G	L	G	L	L	U	L	U	U	U	U	U

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Key: E=Excellent G=Good L=Limited U=Unsatisfactory C=Cautionary

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Oleum	U	U	U	U	U	U	U	U	U	U	U	U
Orange Juice	E	E	-	-	-	-	G	L	-	-	-	-
Oxalic Acid	E	G	E	G	G	G	E	G	G	G	U	U
Oxygen	E	G	E	G	G	-	G	L	G	L	E	E
Ozone	L	U	L	U	U	U	L	U	U	U	-	-
Palmitic Acid 10%	E	E	E	E	G	L	G	L	E	G	U	U
Palmitic Acid 70%	L	U	L	U	G	U	G	U	L	U	U	U
Paraffin	E	G	E	G	-	-	G	L	L	U	E	G
Pentane	L	U	L	U	-	-	E	G	-	-	-	-
Peracetic Acid 40%	U	U	U	U	-	-	-	-	-	-	U	U
Perchloroethylene	U	U	U	U	U	U	-	-	-	-	-	-
Perchloric Acid 10%	G	L	G	L	G	G	G	G	G	G	U	U
Perchloric Acid 70%	L	U	L	U	G	L	G	L	G	-	U	U
Petrol	U	U	U	U	U	U	-	-	U	U	-	-
Petroleum Ether	L	L	L	L	-	-	-	-	U	U	-	-
Phenol	U	U	U	U	U	U	U	U	U	U	U	U
Phenylhydrazine	U	U	U	U	L	U	L	U	-	-	-	-
Phenylhydrazine Hydrochloride	L	U	L	U	L	U	L	U	-	-	-	-
Phosgene (Gas)	C	C	C	C	-	-	-	-	C	U	-	-
Phosgene (Liquid)	U	U	-	-	-	-	-	-	-	-	-	-
Phosphoric Acid 0-25%	E	G	E	G	E	G	E	G	E	G	U	U
Phosphoric Acid 25-50%	E	G	E	G	E	G	E	G	E	G	U	U
Phosphoric Acid 50-90%	E	G	E	G	G	L	G	L	E	L	U	U
Phosphorus (Yellow)	G	L	G	L	L	L	L	L	U	U	-	-
Phosphorus Pentoxide	L	U	L	U	L	L	G	L	G	L	-	-
Phosphorus Trichloride	U	U	U	U	L	U	L	U	L	U	-	-
Photographic Developers	L	U	L	U	-	-	E	E	E	E	L	-
Photographic Emulsions	L	U	L	U	-	-	E	E	E	E	-	-
Photographic Fixers	L	U	L	U	-	-	E	E	E	E	-	-
Picric Acid	U	U	U	U	G	U	G	U	G	L	U	U
Pitch	G	L	G	L	-	-	E	G	-	-	-	-
Plating Solutions												
Brass	E	E	E	E	G	G	G	G	L	-	E	E
Cadmium	E	E	E	E	G	G	G	G	L	-	E	E
Chromium	G	G	G	G	U	U	U	U	U	U	G	G
Copper	E	E	E	E	G	G	G	G	L	-	E	E
Gold	E	E	E	E	G	G	G	G	L	-	E	E
Jodium	E	E	E	E	G	G	G	G	L	-	E	E
Lead	E	E	E	E	G	G	G	G	L	-	E	E
Nickel	E	E	E	E	G	G	G	G	L	-	E	E
Rhodium	E	E	E	E	G	G	G	G	L	-	E	E
Silver	E	E	E	E	G	G	G	G	L	-	E	E
Tin	E	E	E	E	G	G	G	G	L	-	E	E
Zinc	E	G	E	E	G	G	G	G	L	-	E	E
Potable Water	E	G	-	-	-	-	E	E	E	G	-	-
Potassium Acid Sulfate	E	E	E	E	E	G	E	G	G	-	E	E
Potassium Antimonate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Bicarbonate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Bichromate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Bisulfite	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Bisulphate	G	L	-	-	-	-	E	E	E	-	-	-
Potassium Borate 1%	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Bromate 10%	E	E	E	E	E	G	E	G	E	-	E	E

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Potassium Bromide	E	E	E	E	E	G	E	G	E	-	E	E
Potassium Carbonate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Chlorate	E	E	E	E	E	E	E	E	E	-	G	G
Potassium Chloride	E	E	E	E	E	E	E	E	E	-	E	G
Potassium Chromate 40%	E	E	E	E	E	E	E	E	E	-	G	G
Potassium Cuprocyanide	E	E	E	E	E	E	E	E	E	-	-	-
Potassium Cyanide	C	C	C	C	C	C	C	C	C	C	C	C
Potassium Dichromate 40%	E	E	E	E	E	E	E	E	E	-	G	G
Potassium Ferricyanide	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Fluoride	E	E	E	E	E	E	E	E	E	-	E	G
Potassium Hydroxide 10%	E	E	E	E	E	E	E	E	E	-	L	U
Potassium Hydroxide 20%	E	E	E	E	E	E	E	E	E	-	U	U
Potassium Hydroxide 35%	E	E	E	E	G	L	E	G	G	-	U	U
Potassium Hydroxide Conc.	-	-	-	-	-	-	-	-	E	L	-	-
Potassium Hypochlorite	G	L	G	L	G	G	G	L	E	-	U	U
Potassium Nitrate	E	E	E	E	G	G	G	G	E	E	E	E
Potassium Perborate	E	E	E	E	G	L	G	L	E	E	E	E
Potassium Perchlorate	E	E	E	E	G	G	G	G	G	-	G	L
Potassium Permanganate 10%	G	G	E	E	E	E	E	E	U	U	G	L
Potassium Persulfate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Phosphate	-	-	-	-	-	-	-	-	E	E	-	-
Potassium Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Sulfide	E	E	E	E	E	E	E	E	E	-	E	E
Potassium Thiosulfate	E	E	E	E	E	E	E	E	E	-	E	E
Power Steering Fluid	E	L	E	L	-	-	-	-	-	-	E	E
Propane	C	C	C	C	U	U	U	U	U	U	C	C
Propargyl Alcohol	E	E	E	E	G	G	G	G	E	E	-	-
Propyl Alcohol	E	L	E	E	E	E	E	E	E	-	G	L
Propylene Dichloride	U	U	U	U	U	U	U	U	U	U	U	U
Propylene Glycol	-	-	-	-	-	-	-	-	E	E	-	-
Prune Juice	E	E	-	-	-	-	-	-	-	-	-	-
Ritchfield "A" Weed Killer	E	L	E	G	-	-	-	-	-	-	-	-
Salicylic Acid	-	-	-	-	-	-	-	-	E	E	-	-
Salt Water	E	E	E	E	E	E	E	E	E	E	E	L
Selenic Acid	E	G	E	G	G	L	G	L	G	L	U	U
Shortening	G	L	-	-	-	-	E	E	E	E	-	-
Silicic Acid	E	E	E	E	E	E	E	E	E	-	U	U
Silicone Fluids	-	-	-	-	-	-	-	-	E	E	-	-
Silver Cyanide	E	E	E	E	E	E	E	E	E	-	E	E
Silver Nitrate	E	E	E	E	E	E	E	E	E	-	E	E
Silver Plating Solutions	E	G	E	G	E	G	E	G	E	-	E	E
Soap Solution	E	G	E	G	E	G	G	L	G	L	G	U
Sodium Acetate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Acid Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Antimonate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Arsenite	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Benzoate	E	G	E	E	E	E	E	E	E	-	E	E
Sodium Bicarbonate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Bisulfate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Bisulfite	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Bromide	E	E	E	E	E	E	E	E	E	-	E	G
Sodium Carbonate (Soda Ash)	E	E	E	E	E	E	E	E	E	-	E	E

BECAUSE WE CONTINUALLY EXAMINE WAYS TO IMPROVE OUR PRODUCTS, WE RESERVE THE RIGHT TO ALTER SPECIFICATIONS WITHOUT PRIOR NOTICE.

Key: E=Excellent G=Good L=Limited U=Unsatisfactory C=Cautionary

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU	
	Temperature (°F)											
	70	150	70	125	70	150	70	150	70	150	70	150
Sodium Chlorate	G	L	G	L	E	E	E	E	E	-	G	G
Sodium Chloride	E	E	E	E	E	E	E	E	E	-	E	G
Sodium Cyanide	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Dichromate	E	G	E	G	E	E	E	E	E	-	E	G
Sodium Ferricyanide	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Ferrocyanide	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Fluoride	E	E	E	E	E	E	E	E	E	-	E	G
Sodium Hydroxide 10%	E	E	E	E	E	E	E	E	E	-	G	L
Sodium Hydroxide 35%	E	G	E	E	E	E	E	E	E	-	L	U
Sodium Hydroxide 50%	G	L	-	-	-	-	-	-	-	-	-	-
Sodium Hypochlorite	E	E	E	E	E	E	E	E	E	-	U	U
Sodium Nitrate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Nitrite	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Phosphate-Acid	G	G	G	G	E	E	E	E	E	-	U	U
Sodium Silicate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Sulfate	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Sulfide	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Sulfite	E	E	E	E	E	E	E	E	E	-	E	E
Sodium Thiosulfate (Hypo)	E	E	E	E	E	E	E	E	E	-	E	G
Soft Drinks	E	G	-	-	-	-	E	E	G	L	-	-
Soya Oil	E	G	-	-	-	-	-	-	-	-	-	-
Soybean Oil	G	L	-	-	-	-	-	-	-	-	-	-
Stannic Chloride	E	E	E	E	E	E	E	E	E	-	E	G
Stannous Chloride	E	G	E	G	E	E	E	E	E	-	E	G
Starch	-	-	-	-	-	-	-	E	E	-	-	-
Stearic Acid	L	L	L	L	E	E	E	E	E	-	L	U
Stoddard Solvent	L	U	G	L	G	L	G	L	L	U	G	U
Styrene	U	U	U	U	-	-	-	-	-	-	-	-
Sucrose	-	-	-	-	-	-	-	E	E	-	-	-
Sulfur	G	G	G	G	E	E	E	E	E	-	-	-
Sulfuric Acid 0-10%	E	G	E	G	E	G	E	G	G	-	U	U
Sulfuric Acid 10-40%	E	G	E	G	G	G	G	G	G	U	U	U
Sulfuric Acid 50-60%	E	G	E	G	G	L	G	L	G	U	U	U
Sulfuric Acid 70%	E	G	E	G	L	U	L	U	L	U	U	U
Sulfuric Acid 95%	U	U	U	U	U	U	U	U	U	U	U	U
Sulfuric Acid 95% to Fuming	L	L	L	L	U	U	U	U	U	U	U	U
Sulfurous Acid	E	E	E	E	G	L	G	L	L	U	U	U
Sulphur Dioxide - Liquid	L	U	L	U	U	U	U	U	U	-	-	-
Sulphur Dioxide Gas - Dry	E	E	E	E	G	G	G	G	E	G	-	-
Sulphur Dioxide Gas - Wet	L	U	L	U	G	L	G	L	E	L	-	-
Sulphur Trioxide	E	G	E	G	U	U	U	U	U	U	-	-
Sulphurous Acid 10%	-	-	-	-	-	-	-	E	E	-	-	-
Sulphurous Acid 30%	-	-	-	-	-	-	-	U	U	-	-	-
Tallow	-	-	-	-	-	-	-	E	U	-	-	-
Tannic Acid	E	E	E	E	E	E	E	E	E	E	L	U
Tanning Extracts	-	-	-	-	-	-	-	E	E	-	-	-
Tanning Liquors	E	E	E	E	G	L	G	L	L	-	-	-
Tartaric Acid	E	E	E	E	E	E	E	E	E	-	L	U
Tea (Brewed)	E	G	-	-	-	-	E	G	G	L	-	-
Tetraethyl Lead	G	L	G	G	-	-	-	-	-	-	G	G
Tetrahydrofurane	U	U	U	U	U	U	U	U	U	U	U	U
Thionyl Chloride	U	U	U	U	U	U	U	U	U	U	U	U
Tin Chloride	E	E	E	E	-	-	-	-	-	-	E	E
Titanium Tertachloride	E	U	E	U	-	-	-	-	-	-	L	U

Material Handled	PVC		PVC/PU Blend		Rubber Blend		LLDPE		EVA		TPU		
	Temperature (°F)												
	70	150	70	125	70	150	70	150	70	150	70	150	
Titanium Trichloride	-	-	-	-	-	-	-	-	-	U	U	-	-
Toluol or Toluene	U	U	L	U	U	U	E	G	U	U	L	U	
Tomato Juice	E	E	-	-	-	-	G	L	L	U	-	-	
Transformer Oil	-	-	-	-	-	-	-	-	-	U	U	-	-
Transmission Fluid	E	L	E	L	-	-	-	-	-	-	E	E	
Tributyl Phosphate	U	U	U	U	-	-	-	-	-	-	-	-	-
Trichlorobenzene	U	U	U	U	-	-	-	-	U	U	-	-	-
Trichloroethylene	U	U	L	U	U	U	G	L	U	U	L	U	U
Tricresyl Phosphate	U	U	U	U	L	L	L	L	U	U	U	U	U
Triethanolamine	L	U	G	U	G	L	G	L	L	-	-	-	-
Triethylamine	G	L	G	L	-	-	-	-	-	-	-	-	-
Trimethyl Propane	L	U	L	U	-	-	-	-	-	-	-	-	-
Trisodium Phosphate	E	E	E	E	E	E	E	E	E	-	E	E	E
Turpentine	L	U	G	L	L	U	G	L	U	-	E	G	E
Urea	E	E	E	E	E	E	E	E	E	-	E	E	E
Urine	E	E	E	E	E	E	E	E	E	-	E	E	E
Varnish	U	U	U	U	G	L	G	L	U	U	E	G	E
Varsol	-	-	-	-	-	-	E	G	-	-	-	-	-
Vegetable Oils	G	L	G	L	-	-	-	-	U	U	-	-	-
Vinegar	E	E	-	-	E	G	E	G	E	-	G	L	E
Vinyl Acetate	U	U	U	U	L	U	L	U	U	U	U	U	U
Vinyl Chloride	U	U	U	U	-	-	-	-	-	-	-	-	-
Water-Acid Mine Water	E	E	E	E	E	E	E	E	E	-	G	U	U
Water-Distilled	E	E	E	E	E	E	E	E	E	-	G	U	U
Water-Fresh	E	E	E	E	E	E	E	E	E	-	G	U	U
Water-Salt	E	E	E	E	E	E	E	E	E	-	G	U	U
Whey	E	G	-	-	-	-	G	L	G	L	-	-	-
Whiskey	L	U	-	-	-	-	E	L	-	-	-	-	-
White Gasoline	E	E	E	E	U	U	U	U	U	U	E	G	E
White Liquor (Paper industry)	E	E	E	E	-	-	-	-	-	-	-	-	-
Wines	G	L	-	-	-	-	E	E	-	-	-	-	-
Xylene or Xylol	U	U	L	U	U	U	G	L	U	U	G	L	U
Zinc Chloride	E	E	E	E	E	E	E	E	E	-	E	E	E
Zinc Chromate	E	E	E	E	E	E	E	E	E	-	E	E	E
Zinc Cyanide	E	E	E	E	E	E	E	E	E	-	E	E	E
Zinc Nitrate	E	E	E	E	E	E	E	E	E	-	E	E	E
Zinc Sulfate	E	E	E	E	E	E	E	E	E	-	E	E	E

Mixtures of Acids:													
Nitric 15%, Hydrofluoric 4%	E	G	E	G	-	-	-	-	-	-	-	U	U
Sodium Dichromate 13%, Nitric Acid 16%, Water	E	G	E	G	E	E	E	E	E	E	E	E	L

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