

The Chemical Guides in this section are offered as a general indication of the compatibility of the various materials used in ALFAGOMMA® hose with the chemicals and fluids listed. The basis for the ratings in this guide include actual service experience, the advice of various polymer suppliers, and the considered opinion of our rubber chemists. When in doubt, a sample of the compound should always be tested with the particular chemical it is to handle. Some of the variables that come into play in the resistance of a compound to chemical attack are:

## 1. Temperature of the Material Transmitted:

Higher temperatures increase the effect of chemicals on rubber compounds. The increase varies with the polymer and the chemical. A compound quite suitable at room temperature might fail very quickly at higher temperatures.

## 2. Service Conditions:

A rubber compound usually swells when exposed to a chemical. With a given percent of swell, the hose tube may function satisfactorily if the hose is in a static condition, but fail quickly if the hose is subject to flexing.

## 3. The Grade or Blend of the Rubber Compound:

Basic rubber polymers are sometimes mixed or blended together to enhance a particular property for a specific service. The reaction to a particular chemical blend of polymers may, therefore, be somewhat different from the reaction to the single ones. When in doubt, a sample of the compound should always be tested with the particular chemical it is to handle.

## 4. Alfagomma® hoses are produced using silicone free release agents.

## KEY TO GENERAL CHEMICAL RESISTANCE CHART

**Note:** All data based on 20°C (68°F) unless otherwise noted.

Blank = No Data      G = Good      C = Conditional      X = Unsatisfactory  
E = Excellent      F = Fair      I = Insufficient Data

## GENERAL CHEMICAL RESISTANCE OF ALFAGOMMA® HOSE COMPOUNDS

ASTM Designation D1418-93	Common Name	Composition	General Properties
CIIR	Chlorobutyl	Chloro-Isobutene-Isoprene	Excellent resistance to high heat steam. Very good weathering resistance, low permeability to air. Good physical properties. Poor resistance to petroleum-based fluids.
CR	Neoprene	Chloroprene	Excellent weathering resistance. Flame retarding. Good oil resistance. Good physical properties.
CSM	Hypalon®	Chloro-sulfonated polyethylene	Excellent ozone, weathering and acid resistance. Good abrasion and heat resistance. Can be compounded for good oil resistance.
EPDM	EPM or EPDM	Ethylene-propylene-diene-terpolymer	Good general purpose polymer. Excellent heat, ozone and weather resistance. Not oil resistant.
NBR	BUNA-N or Nitrile	Nitrile-Butadiene	Excellent oil resistance. Good physical properties.
NR	Natural	Isoprene Rubber (Natural)	Excellent physical properties, including abrasion resistance. Not oil resistant.
SBR	SBR	Styrene-Butadiene Rubber	Good physical properties, including abrasion resistance. Not oil resistant.
UHMWPE	UHMWPE	Ultra-High Molecular Weight Polyethylene	Excellent resistance to a majority of existing chemicals. Meets FDA requirements for food and beverages.
XLPE	Cross Linked Polyethylene	Cross Linked Polyethylene	Excellent resistance to most solvents, oils and chemicals. Do not confuse with chemical properties of standard polyethylene.
	Synthetic Rubber	Synthetic Rubber	Black conductive synthetic rubber, excellent resistance to Biofuel based fluids.

FOR APPLICATIONS INVOLVING INDUSTRIAL ACID CHEMICALS AND ALCOHOLS, PLEASE REFER TO T5050G AND T5090E CHEMICAL HOSES.

Key to General Chemical Resistance Chart [all data based on 20°C (68°F) unless noted]:

E – Excellent; G – Good; F – Fair; C – Conditional; I – Insufficient Data; X – Not Recommended; Blank – No Data

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
ACETALDEHYDE	E	C	F	E	X	F	X	E	E	X
ACETIC ACID, GLACIAL	G	F	C	G	X	C	X	E	E	X
ACETIC ACID, 10%	G	E	E	E	E	G	F	E	E	E
ACETIC ACID, 50%	G	F	E	E	F	X	F	E	E	F
ACETIC ANHYDRIDE	C	G	E	G	X	F	X	E	E	X
ACETIC OXIDE (Acetic anhydride)	G	G	E	G	X	F	X	E	E	X
ACETONE	E	C	X	E	X	C	C	E	E	X
ACETONE CYANOHYDRIN	E	G	F	E	X	F				X
ACETONITRILE	E	E	G	E	X	G				X
ACETOPHENONE	G	X	X	E	X	C	X	E	E	X
ACETYL ACETONE	E	X	X	E	X	X	X			X
ACETYL CHLORIDE	X	X	C	X	X	X	X			X
ACETYL OXIDE (Acetic anhydride)	G	G	E	G	X	F		E	E	X
ACETYLENE	E	E	C	E	E	C	F	E	E	E
ACETYLENE DICHLORIDE	F	X	X	C	X	X	X			X
ACETYLENE TERACHLORIDE	X	C	X	C	X	X				X
ACROLEIN	E	G	G	E	F	G	F			F
ACRYLONITRILE	X	X	C	E	X	C	F	E	E	X
ACRYLIC ACID		X	G	X	X	X				X
ADIPIC ACID	X	E	G	C	E	E		E	E	E
AIR, +300°F	G	G	G	G	G	X	X			G
ALK-TRI	X	X	X	X	X	X				X
ALLYL ALCOHOL	E	E	E	E	E	E		E	E	E
ALLYL BROMIDE	X	X	X	X	X	X				X
ALLYL CHLORIDE	C	X	X	X	G	X	E	E	F	G
ALUM (Aluminium potassium sulfate)	E	E	E	G	C	E		E	E	C
ALUMINIUM ACETATE	G	C	F	E	C	E	X			C
ALUMINIUM CHLORIDE	E	E	E	E	E	E	E	E	E	E
ALUMINIUM FLUORIDE	E	E	E	E	E	E	E	E	E	E
ALUMINIUM FORMATE	G	E	X	E	X	X				X
ALUMINIUM HYDROXIDE	E	E	E	E	E	E	G	E	E	E
ALUMINIUM NITRATE	E	E	E	E	E	E	E			E
ALUMINIUM SULFATE	A	G	E	E	E	E	G	E	E	E
ALUMUS-NH3-CR-K										
AMINES-MIXED		C	X	G	X	C	G			X
AMINO BENZENE (Aniline)	E	X	C	C	X	X	X	E	E	X
AMINODIMETHIL BENZENE	G	X	F	C	C	X				C
AMINOETHANE (Ethylamine)	G	C	F	E	C	C	X	E	E	C
AMINOXYLENE	G	X	X	E	C	X				C
AMMONIUM CARBONATE	E	E	C	E	C	E	E			C
AMMONIUM CHLORIDE	E	E	E	E	G	E	E	E	E	G
AMMONIUM HYDROXIDE	G	E	E	E	C	G	X	E	E	C
AMMONIUM NITRATE	E	E	E	E	E	E	E	E	E	E
AMMONIUM PHOSPHATE, DIBASIC	E	E	E	E	E	E	E	E	E	E
AMMONIUM SULFATE	E	E	E	E	E	E	G	E	E	E
AMMONIUM SULFIDE	E	E	E	E	C	E	G	E	E	C
AMMONIUM THIOSULFATE	E	E	E	E	C	E				C
AMYL ACETATE	G	X	X	C	X	C	X	E	E	X
AMYL ACETONE	G	X	X	G	X	X				X
AMYL ALCOHOL	E	C	E	E	C	C	G	E	E	C
AMYL BROMIDE	X	X	X	C	X	X				X
AMYL CHLORIDE	X	X	X	X	X	X	X	E	E	X
AMYL ETHER	X	X	F	X	C	X				C
AMYLAMINE	G	C	F	X	F	F				F

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
ANETHOLE	X	X	X	X	X	X				X
ANILINE	E	X	C	C	X	X	X	E	E	X
ANILINE DYES	G	C	G	C	X	C	G	E	E	X
ANILINE OIL	G	X	C	C	X	X	X	E	E	X
ANIMAL FATS	C	C	F	C	E	X	X	E	E	E
ANTIMONY PENTACHLORIDE		C	X	C	X	X		E	E	X
AQUA REGIA	C	X	C	C	X	X	X	X	X	X
ARGON	G	G	X	E	E	X	C			E
ARSENIC ACID	E	E	E	E	E	E	E	E	E	E
ASPHALT	X	C	F	X	C	X	X	E	E	C
ASTM FUEL A	X	C	C	X	E	X	X			E
ASTM FUEL B	X	X	X	X	C	X	X			C
ASTM FUEL C	X	X	X	X	C	X	X			C
ASTM OIL NO.1	X	E	C	X	E	X	X	E	E	E
ASTM OIL NO.2	X	C	X	X	E	X	X	E	E	E
ASTM OIL NO.3	X	C	C	X	E	X	X	E	E	E
ASTM OIL NO.4	X	X	X	X	C	X	X			C
AUTOMATIC TRASMISSION FLUID	X	C	C	X	E	X	X			E
BANANA OIL	C	X	C	C	X	X				X
BARIUM CHLORIDE	E	E	E	E	E	E	E	E	E	E
BARIUM HYDROXIDE	E	E	E	E	E	E	E	E	E	E
BARIUM SULPHIDE	E	E	E	E	E	E	G	E	E	E
BEER	E	E	E	E	E	E	E	E	E	E
BEET SUGAR LIQUORS	E	C	E	E	E	E	E	E	E	E
BENZAL CHLORIDE	G				X					X
BENZALDEHYDE	G	X	X	E	X	X	X	E	E	X
BENZENE	X	C	C	C	X	X	X	E	F	X
BENZENE CARBOXYLIC ACID	E	E	C	C	X	X				X
BENZINE (Gasoline)	X	C	C	X	E		X	E	E	E
BENZOIC ACID	C	E	C	C	X	X	X			X
BENZOL (Benzene)	X	C	C	C	X	X	X	E	F	X
BENZOTRICHLORIDE		X	X	E	X	X				X
BENZYL ACETATE	E	E	G	E	X	X				X
BENZYL ALCOHOL	E	C	C	C	X	X	X			X
BENZYL CHLORIDE	X	X	X	X	X	X	X			X
BENZYL ETHER (Dibenzyl Ether)	G	X	X	C	X	X	X			X
BIODIESEL (BD100 O B100)										E
BIODIESEL (BD20 O B20)										E
BIOETHANOL (E85)										E
BIS (2-CLOROETHYL) ETHER										
BLACK SULFATE LIQUOR	G	G	G	G	G	G	G	E	E	G
BLEACH	E	C	E	E	X	C	X	G	F	X
BORAX SOLUTION	E	E	E	E	C	C	G	E	E	C
BORIC ACID	E	E	E	E	E	E	E	E	E	E
BRAKE FLUID (HD-557)12 DAYS	E	C	C	E	C	X	E			C
BRINE	E	E	E	E	E	E		E	E	E
BROMACIL										
BROMOBENZENE	X	X	X	X	X	X	X			X
BROMOCHLOROMETANE	C	X	X	G	X	X		F	F	X
BROMOETHANE (Ethyl bromide)	C	X	X	X	C	C	X	E	E	C
BROMOTOLUENE	X		X		X	X				X
BUGDIOXANE										
BUNKER OIL	X	G	C	X	E	X	X			E
BUTADIENE	X	X	G	X	X	X	X	E	E	X

FOR APPLICATIONS INVOLVING INDUSTRIAL ACID CHEMICALS AND ALCOHOLS, PLEASE REFER TO T5050G AND T5090E CHEMICAL HOSES.

# Chemical Resistance Chart

Key to General Chemical Resistance Chart [all data based on 20°C (68°F) unless noted]:

E – Excellent; G – Good; F – Fair; C – Conditional; I – Insufficient Data; X – Not Recommended; Blank – No Data

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
BUTANE	X	E	C	X	E	X	X	E	E	E
BUTANOIC ACID	X	X	C	C	C	C				C
BUTANOL (Butyl alcohol)	C	E	E	C	E	E	E	E	E	E
BUTANONE	E	X	X	E	X	X	X	E	E	X
BUTOXYETHANOL	C	X	G	E	C	X				C
BUTYL ACETATE	C	X	X	C	X	X	X	E	E	X
BUTYL ACRYLATE	X	X	X	C	X	X	X	E	E	X
BUTYL ALCOHOL	C	E	E	C	E	E	E	E	E	E
BUTYL ALDEHYDE (Butyraldehyde)	C	X	X	C	X	X	X	E	E	X
BUTYL BENZYL PHTHALATE	E	E	X	E	X	X		E	E	X
BUTYL CARBITOL	E	X	C	E	X	X	X			X
BUTYL CELLOSOLVE	C	X	G	C	C	X	X	E	E	C
BUTYL CHLORIDE	F	X	X	X	X	X				X
BUTYL ETHER	C	C	X	C	X	X	X	E	E	X
BUTYL ETHER ACETALDEHYDE	G	X	X	X	X	X				X
BUTYL ETHYL ETHER	X	X	C	F	G	X				G
BUTYL OLEATE	C	X	X	C	X	X	X			X
BUTYL PHTHALATE	G	X	X	E	X	X	X	E	E	X
BUTYL STEARATE	C	X	X	X	C	X	X	E	E	C
BUTYLENE	X	C	C	X	C	X	X			C
BUTYRALDEHYDE	C	X	X	C	X	X	X	E	E	X
BUTYRIC ACID	X	X	C	C	C	C	X	E	E	C
BUTYRIC ANHYDRIDE	F	G	G	E	C	F				C
CADMIUM ACETATE	E		E		X	X				X
CALCIUM ALUMINATE	E		E		E	E				E
CALCIUM BICHROMATE	E	E	F	E	C					C
CALCIUM BISULFIDE	X	E	F	E	C	X	G			C
CALCIUM CHLORIDE	E	E	E	E	E	E	E	E	E	E
CALCIUM HYDROXIDE	E	E	E	E	E	E	E	E	E	E
CALCIUM HYPOCHLORITE	E	C	E	E	C	C	X	E	E	C
CALCIUM NITRATE	E	E	E	E	E	E	E			E
CALCIUM SULFIDE	E	E	E	E	E	C	X			E
CALCIUM ACETATE	E	C	C	E	C	E	X			C
CAPRYLIC ACID	F		G		F	C				F
CARBAMIDE (Urea)	E	G	E	E	G	E		E	E	G
CARBITOL	C	C	C	C	C	C	E	E	E	C
CARBOLIC ACID PHENOL	C		C			C				
CARBON DIOXIDE	E	G	E	G	E	G	G	E	E	E
CARBON DISULFIDE (Carbon bisulfide)	X	X	X	X	X	X		C	C	X
CARBON MONOXIDE	E	C	C	E	E	C	G	E	E	E
CARBON TETRACHLORIDE	X	X	X	X	X	X		E	E	X
CARBONIC ACID	E	E	E	E	C	E	G	E	E	C
CASTOR OIL	C	E	E	C	E	E	E	E	E	E
CAUSTIC SODA	E	G	E	G	C	E	E	E	E	C
CELLOSOLVE ACETATE	C	X	X	G	X	C	X	E	E	X
CELLUGUARD	E	E	E	E	E	E	E			E
CETYLIC ACID (Palmitic acid)	C	G	C	C	E	C	G	E	E	E
CHINA WOOD OIL (Tung oil)	C	C	C	X	E	X	X	E	E	E
CHLORINATED SOLVENTS	X	X	X	X	X	X	X	E	E	X
CHLORO-2-PROPANONE	C		X			X				
CHLOROACETIC ACID	C	X	G	C	X	X	X	E	E	X
CHLOROACETONE	C	X	X	E	X	X	X	E	E	X
CHLOROBENZENE	X	X	X	X	X	X	X	E	E	X
CHLOROBUTANE	F	X	X	X	X	X				X

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
CHLORODANE (Chlordane)	X	C	C	X	C	X	X			C
CHLOROETHYL BENZENE	X	X	X	X	C	X				C
CHLOROFORM	X	X	X	X	X	X	X	F	F	X
CHLOROPENTANE	X	X	X	X	X	X				X
CHLOROSULFONIC ACID	X	X	X	X	X	X	X	F	X	X
CHLOROTOLUENE	X	X	X	X	X	X	X			X
CHLOROX	C	C	C	G	C	X	X			C
CHROME PLATING SOLUTIONS	C	X	X	C	X	X	X			X
CHROMIC ACID	C	X	E	C	X	C	X	E	E	X
CHROMIUM TRIOXIDE (Chromic oxide)	G	X	E	C	X	X	X			X
CINNAMENE (Vinylbenzene)	X	X	X	X	C	X	X			C
CIS-9-OCTADECENOIC ACID (Oleic acid)	X	C	C	C	G	X	X	E	E	G
CITRIC ACID	E	E	E	E	E	E	E	E	E	E
COAL TAR OIL (Coal oil)	X	G	F	X	E	X	X	E	E	E
COAL TAR	X	C	C	X	C	X	X	E	E	C
COAL TAR NAPHTHA	X	X	X	X	X	X		E	E	X
COCONUT OIL	C	C	C	C	E	X	X	E	E	E
COKE OVEN GAS	C	X	C	X	X	C	X	E	E	X
COOLANOL (Monsanto)	X	C	C	X	E	X	X			E
COPPER CHLORIDE	E	C	C	E	E	E	E	E	E	E
COPPER CYANIDE	E	E	E	E	E	E	E	E	E	E
COPPER HYDRATE	E		G		G	F				G
COPPER HYDROXIDE (Copper hydrate)	E		G		G	F				G
COPPER SULFATE	C	E	E	E	E	C	G	E	E	E
CORN OIL	C	C	C	C	E	X	X	E	E	E
COTTONSEED OIL	C	C	C	C	E	X	X	E	E	E
CREOSOTE	X	C	X	X	C	X	X	E	E	C
CRESOLS	X	X	X	X	X	X	X	E	E	X
CRESYLIC ACID	X	X	X	X	X	X	X	E	E	X
CROTONALDEHYDE	E	X	X	E	X	X	F	E	E	X
CRUDE OIL	X	C	C	X	C	X	X	E	E	C
CUMENE	X	X	X	X	X	X	X			X
CUPRIC CARBONATE										
CUPRIC HYDROXIDE (Copper hydroxide)	E		G		G	F				G
CUPRIC NITRATE (Copper nitrate)	E	E	E	C	C	G		E	E	C
CUPRIC SULFATE (Copper sulfate)	C	E	E	E	E	C	G	E	E	E
CUTTING OIL	X	C	C	X	E	C	X			E
CYCLOHEXANE	X	X	C	X	E	X	X	E	E	E
CYCLOHEXANOL	X	C	C	X	G	C	X	E	E	G
CYCLOHEXANONE	C	X	X	C	X	X	X	E	E	X
CYCLOPENTANE	X	C	X	X	G	X				G
CYCLOPENTANOL										
CYCLOPENTANONE	X		X		X	X				X
CYCLOPENTYL ALCOHOL (Cyclopentanol)		F		C	X					X
D-FURALDEHYDE (Furfural)	C	F	C	E	G	X				G
DDT IN KEROSENE	X	C	C	X	E	X	X			E
DECAHYDRONAPHTHALENE (Decalin)	X	X	X	X	X	X	E	E	E	X
DECAHYDROXYNAPHTHALENE										
DECALIN	X	X	X	X	X	X	E	E	E	X
DECYL ALCOHOL (Decanol)	X	X	C	X	E	X				E
DECYL ALDEHYDE	F		X	X	X	X				X
DECYL BUTYL PHTHALATE	E		X		X	X				X
DECIL CARBINOL										
DETERGENT, WATER SOLUTION	E	C	C	E	E	E	G	E	E	E

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## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
DEVELOPING FLUID (PHOTO)	C	E	E	C	E	E	G			E
DEXTRON	X	C	X	X	E	X	X			E
DI (2ETHYLHEXYL) ADIPATE (Diocetyl adipate)	E	X	X	G	X	X		G	G	X
DI (2ETHYLHEXYL) PHTHALATE (Diocetyl phthalate)	C	X	X	C	X	X	X	E	E	X
DI-ISO-BUTYLENE	X	C	X	X	C	X	X	E		C
DI-ISO-DECYL PHTHALATE	E	X	X	E	X	X				X
DI-ISO-PROPANOLAMINE	E	G	F	E	G	G				G
DI-ISO-PROPYL ETHER	X	C	C	X	G	X		E	E	G
DI-ISO-PROPYL KETONE	E	X	X	E	X	X	X	E		X
DI-P-MENTHA-1,8-DIENE (Cinene)	X	X	X	X	C	X				C
DIACETONE ALCOHOL	E	F	C	E	X	X	X	E	E	X
DIACETYLMETHANE (Acetylacetone)	E	X	X	E	X		X			X
DIALLYLPHTHALATE (Diallyl phthalate)										
DIAMMONIUM ORTHOPHOSPHATE		E		E	E					E
DIAMYL NAPHTHALENE	E		X			X		E	E	
DIAMYLAMINE	E	C	C	E	G	G	X			G
DIAMYLENE	X	X	X	X		X				
DIAMYLPHENOL	X		X		X	X		E	E	X
DIBENZYL ETHER	C	X	X	C	X	X	X			X
DIBROMOBENZENE	X	X	X	X	X	X				X
DIBROMOMETHANE (Methylene bromide)	X	X	X	C	X	X				X
DIBUTYL ETHER	C	C	X	C	X	X	X	E	E	X
DIBUTYL PHTHALATE	C	X	X	C	X	X	X	E	E	X
DIBUTYL SEBACATE	C	X	X	C	X	X	X	E	E	X
DIBUTYLAMINE	X	C	C	F	X	X	X			X
DICALCIUM PHOSPHATE	E	E	E	E	E	E				E
DICHLOROETHYLENE (1,2-Dichloroethene)	C	X	X	C	X	X		F	F	X
DICHLOROACETIC ACID	C	X	X	X	X	X	X	E	E	X
DICHLOROBENZENE	X	X	X	X	X	X	X			X
DICHLOROBUTANE	X	X	X	X	C	X	X			C
DICHLORODIFLUOROMETHANE	C	C	C	C	C	C	E	E	G	C
DICHLOROETHANE	C	X	X	X	X	X	X	E	E	X
DICHLOROETHYL ETHER	X	X	X	X	X	X				X
DICHLOROHEXANE	X	X	X	X	X	X				X
DICHLOROMETHANE	X	X	X	X	X	X	X			X
DICHLOROPENTANE	X	X	X	X	X	X	X			X
DICHLOROPROPANE	X	X	X	X	F	X		G	G	F
DICHLOROPROPENE	X	X	X	X	C	X		G	G	C
DICHLOROTOLUENE										
DIESEL OIL	X	C	C	X	E	X	X	E	E	E
DIETHANOL AMINE	E	G	F	G	C	G	X			C
DIETHYLBENZENE	X		X			X	X			
DIETHYL ETHER	X	X	X	X	X	X	X	E	E	X
DIETHYL KETONE	G	X	X	G	X	X		E	E	X
DIETHYL OXALATE	X	X	X	X	X	F				X
DIETHYL PHTHALATE	X	X	X	F	X	X		E	E	X
DIETHYL SEBACATE	G	X	F	F	C	X	X			C
DIETHYL SULFATE	C	E	X	E	X	X	E			X
DIETHYL AMINE	C	C	C	C	C	C	G	E	E	C
DIETHYLENE GLYCOL	E	E	E	E	E	E	E	E	E	E
DIETHYLENE OXIDE	X	X	X	E	X	X				X
DIETHYLENETRIAMINE	E	X	F	E	G	G	X			G

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
DIETHYLTRIAMINE										
DIHYDROXY SUCCINIC ACID	G	G	E	G	G	E				G
DIHYDROXYDIETHYL ETHER (Diethylene glycol)	E	E	E	E	E	E		E	E	E
DIISOBUTYL KETONE	G	X	X	E	X	X	X	E	E	X
DIISODECYL PHTHALATE	E	X	X	E	X	X		E	E	X
DIISOCTYL ADIPATE	E	X	X	E	X	X				X
DIISOCTYL PHTHALATE	E	X	X	G	X	X		E	E	X
DIMETHYL CARBINOL	E	G	E	E	C	E		E	E	C
DIMETHYL KETONE	E	C	X	E	X	C	F	E	E	X
DIMETHYL PHTHALATE	C	X	X	C	X	X	X	E	E	X
DIMETHYL SULFATE	G	X	X	X	X	X		E	E	X
DIMETHYL SULFIDE	F	X	X	X	X	X				X
DIMETHYL-3-PENTANONE										
DIMETHYL-4-HEPTANONE										
DIMETHYLAMINE	G	X	X	E	F	G	X	E	E	F
DIMETHYLANILINE	G	X	X	E	X	X	X			X
DIMETHYLBENZENE	X	X	X	X	X	X	X			X
DIMETHYLBUTANE (iso-Pentane)	X		X			X				
DIOCTYL ADIPATE	E	X	X	G	X	X				X
DIOCTYL PHTHALATE	C	X	X	C	X	X	X	E	E	X
DIOXALANE							X			
DIOXANE	C	X	X	C	X	X	X	E	E	X
DIPENTENE	X	X	X	X	C	X	X			C
DIPENTYLAMINE (Diamylamine)	E	C	C	E	G	G	X			G
DIPROPYLAMINEOLAMINE										
DIPROPYLENE GLYCOL	E	E	E	E	E	E				E
DISODIUM PHOSPHATE	E	E	E	E	E	E				E
DIVINYL BENZENE	X	X	X	X	X	X	X			X
DOWELL INHIBITOR										
DOWFAX 2A1 SOLVENT										
DOWFAX 2A1 TA										
DOWFAX 6A1 SOLVENT										
DOWFAX 6A1 TA										
DOWTHERMN, A AND E	X	X	C	X	X	X	X			X
DRY CLEANING FLUIDS	X	X	X	X	C	X	X			C
DUCGKIROEBAANE										
DURD AW-16,31										
DURO FR-HD										
ETHANOIC ACID (Acetic acid)		C		C	C		G	E	E	C
ETHANOL (Grain alcohol)	E	E	E	E	C	E	E	E	E	E
ETHANOLAMINE	C	C	C	E	C	C	X			C
ETHERS	X	X	X	X	F	X	X	E	E	F
ETHYL ACETATE	C	X	X	C	X	X	X	E	E	X
ETHYL ACETOACETATE	C	X	X	C	X	C	F			X
ETHYL ACETONE (2-Pentanone)	G	X	X	G	X	X				X
ETHYL ACRYLATE	C	X	X	C	X	X	X			X
ETHYL ALCOHOL	E	E	E	E	C	E	E	E	E	E
ETHYL ALDEHYDE	E	X	F	E	X	C		E	E	X
ETHYL ALUMINIUM DICHLORIDE	X		X		X	X				X
ETHYL BENZENE	X	X	X	X	X	X	X	E	E	X
ETHYL BROMIDE	X	X	X	X	C	C	X	E	E	C
ETHYL BUTYL ACETATE	E		G		X	X				X
ETHYL BUTYL ALCOHOL (Ethylbutanol)	E		E			E				

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# Chemical Resistance Chart

Key to General Chemical Resistance Chart [all data based on 20°C (68°F) unless noted]:

E – Excellent; G – Good; F – Fair; C – Conditional; I – Insufficient Data; X – Not Recommended; Blank – No Data

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
ETHYL CELLULOSE	C	C	C	C	C	C	G	E	E	C
ETHYL CHLORIDE	E	X	C	C	E	C	G	E	E	E
ETHYL DICHLORIDE	F	X	X	X	X	X	X	E	E	X
ETHYL DIISOBUTYLTHIO-CABARMATE										
ETHYL ETHER	X	X	X	X	X	X	X	E	E	X
ETHYL FORMATE	C	C	C	C	X	X	X			X
ETHYL IODIDE	F	X	X	F	X	X		E	E	X
ETHYL OXALATE	X	X	X	E	X	E	X			X
ETHYL PHTHALATE	X	X	X	F	X	X		E	E	X
ETHYL SILICATE	E	E	C	E	E	C	G			E
ETHYL-N-BUTYL KETONE	G	X	X	G	X	X				X
ETHYL-1-BUTANOL	E	E	E	E	E	E				E
ETHYLAMINE	C	C	F	E	C	C	X			C
ETHYLENE CHLOROXYDRIN	C	C	C	C	X	C	G			X
ETHYLENE DIAMINE	E	E	C	E	C	C	G	E	E	C
ETHYLENE DIBROMIDE	C	X	X	C	X	X	X	F	F	X
ETHYLENE DICHLORIDE	C	X	X	X	X	X	X	F	F	X
ETHYLENE GLYCOL MONOETHYL ACETATE										
ETHYLENE GLYCOL MONOBUTYL ETHER	E	X	C	E	F	X	X	E	E	F
ETHYLENE GLYCOL MONOETHYL ETHER (Ethoxyethanol)	C	X	X	C	C	X		E	E	C
ETHYLENE GLYCOL MONOHEXYL ETHER										
ETHYLENE GLYCOL	E	E	E	E	E	E	E	E	E	E
ETHYLENE OXIDE	C	X	X	C	X	X	X	E	E	X
FATTY ACIDS	C	C	C	X	C	X	X	E	G	C
FERRIC BROMIDE	E		E		E	E				E
FERRIC CHLORIDE	E	C	C	E	E	E	E		E	E
FERRIC NITRATE	E	E	E	E	E	E	E		E	E
FERRIC SULFATE	E	E	E	E	E	E	E		E	E
FERROUS ACETATE	E	X	E	G	X	X				X
FERROUS CHLORIDE	E	E	E	E	E	E			E	E
FERROUS SULFATE	E	E	E	E	E	E	E		E	E
FLUOROBORIC ACID	C	E	E	E	E	E	E	E	E	E
FLUORINE	X	X	X	E	X	X		G	G	X
FLUOROSILICIC ACID	E	E	E	E	E	E	G	E	E	E
FORMALDEHYDE	C	C	C	C	C	C	G	E	E	C
FORMALIN (Formaldehyde)	C	G	C	E	G	C	G	E	E	G
FORMIC ACID	E	C	E	E	C	C	E	E	E	C
FREON S02										
FREON 113	X	E	C	X	E	C	G			E
FREON 12	X	C	E	C	C	X	E	F	G	C
FREON 22	C	E	E	C	X	C	E	F	E	X
FUEL A (ASTM)	X	C	C	X	E	X				E
FUEL B (ASTM)	X	X	X	X	C	X				C
FUEL OIL	X	C	C	X	E	X	X	E	E	E
FURAN (Furfuran)	X	X	X	X	X	X	X	E	E	X
FURFURAL	C	X	C	C	X	X	X	E	E	X
FURFURAN (Furan)	X	X	X	X	X	X	X	E	E	X
FURFURYL ALCOHOL	C	X	X	C	X	X	X	E	E	X
GALLIC ACID	C	C	C	C	C	E	G	E	E	C
GALLOTANNIC ACID	G	E	E	E		E				
GAS, COAL										
GAS, HIGH OCTANE										
GASOLINE	C	X	C	X	E	C	X	E	E	E

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
GLACIAL ACRYLIC ACID (Acrylic acid)	X	X	G	X	X	X				X
GLUCONIC ACID	F	E	G	E	C	X				C
GLUCOSE	E	C	E	E	E	E	E	E	E	E
GLYCERINE	E	E	E	E	E	E	E	E	E	E
GLYCEROL	E	E	E	E	E	E	E	E	E	E
GLYCOGENIC ACID (Gluconic acid)	F	E	G	E	F	X				F
GLYCOLS	E	E	E	E	E	E	E	E	E	E
GLYCONIC ACID (Gluconic acid)	F	E	G	E	F	X				F
GLYCLYL ALCOHOL										
GREASE	X	F	C	X	E	X	X			E
GREEN SULPHATE LIQUOR	E	C	G	E	C	C	G			C
HALON 1211										
HELIUM	E	E	E	E	E	E	E			E
HEPTALDEHYDE	C	C	X	C	E	X	X			E
HEPTANAL	C	C	X	C	E	X	X			E
HEPTANE	X	C	C	X	E	X	X		E	E
HEPTANE CARBOXYLIC ACID										
HEPTANOIC ACID	X	C	C	X	E	X				E
HEPTANONE										
HEXADECANOIC ACID	G	X	X	G	E	E	G	E	E	E
HEXALDEHYDE	C	C	C	C	X	X	X	E	E	X
HEXANE	X	C	C	X	E	X	X	E	E	E
HEXANOL	C	C	C	C	C	E	E	E	E	C
HEXENE	X	C	C	X	C	X	X			C
HEXYL ALCOHOL	C	C	C	C	C	E	E	E	E	C
HEXYL METHYL KETONE (Methyl hexyl ketone)	G	C	X	G	X	X				X
HEXYLAMINE	G	G	F	G	F	F				F
HEXYLENE GLYCOL	E	E	E	F	C	E				C
HISTOWAX (Paraffin Wax)	X		C		X					
HYDRAULIC & MOTOR OIL	C	C	C	C	C	X	X	E	E	C
HYDRAZINE	C	C	C	E	C	C	G			C
HYDROBROMIC ACID	E	C	E	E	X	E	X	E	E	X
HYDROCHLORIC ACID	C	C	C	C	C	C	X	C	C	C
HYDROCYANIC ACID	C	C	E	E	C	C	G			C
HYDROFLUORIC ACID	C	C	E	C	C	C	X	E	E	C
HYDROFLUOSILICIC ACID	E	C	E	E	X	E	G	E	E	X
HYDROGEN CHLORIDE ANHYDROUS	E	C	E	E	X	X	X			X
HYDROGEN DIOXIDE (10%) (Hydrogen peroxide)	G	F	C	G	F	G				F
HYDROGEN GAS	E	E	E	E	E	C	G	E	E	E
HYDROGEN PEROXIDE OVER 10%	C	X	C	C	X	C	X	C	F	X
HYDROGEN PEROXIDE 10%	G	F	C	G	F	G	X	E	E	F
HYDROGEN SULFIDE (WET)	E	E	G	E	X	X	X	E	E	X
HYDROXY BENZENE (Phenol)	C	X	C	C	X	C				X
HYDROXYISOBUTYRONIRILE (Acetone cyanohydrin)	E	G	F	E	C	C				C
HYDROXYTOLUENE (Benzyl alcohol)	C	C	C	C	X	X	X			X
HYVAR VXL										
IMINODI-2-PROPANOL (Diisopropanolamine)	E	G	F	E	G	G				G
IMINODIETHANOL (Diethanolamine)	C	G	F	G	C	C	X			C
IODINE	C	C	C	C	C	X	G	E	E	C
IODINE PENTAFLUORIDE	X	X	X	X	X	X	X			X

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## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
IODOFORM	X	X	X	E	E	X				E
ISO-BUTANAL (Isobutyraldehyde)		F		G	X	X	G	E	E	X
ISO-BUTYLAMINE	E	X	F	G	X	F				X
ISO-BUTYLBROMIDE	X	X	X	X	X	X				X
ISO-BUTYLCARBINOL (Isoamyl alcohol)	E	E	E	E	E	X				E
ISOCYANATES	G	X	F	G	C	F		E	E	C
ISOCTANE	X	C	C	X	E	X	X	E	E	E
ISOPROPYL ACETATE	C	X	X	C	X	X	X	E	E	X
ISOPROPYL ALCOHOL	E	C	E	E	C	E	E	E	E	C
ISOPROPYL ETHER	X	X	C	X	G	X	X	E	E	G
JET FUELS	X	C	X	X	C	X	X	E	E	C
JP-4 OIL	X	X	X	X	E	X	X			E
KEROSENE	X	C	C	X	E	X	X	E	E	E
KETONES	G	C	C	E	C	C	E	E	E	C
LACQUER SOLVENTS	X	X	X	X	X	X		E	E	X
LACTIC ACID - COLD	E	C	E	C	C	E	G	G	G	C
LACTIC ACID - HOT	E	C	E	C	C	E	X	G	G	C
LARD	C	C	C	C	E	X	X	E	E	E
LAVENDER OIL	X	X	X	X	C	X	X			C
LEAD ACETATE	E	C	X	E	C	E	X	E	E	C
LEAD NITRATE	E	E	E	E	E	E	E			E
LEAD SULFATE	E	E	E	E	E	E		E	E	E
LIME	E	G	G	E	G	E		E	E	G
LIME BLEACH (Calcium hypochlorite)	E	C	E	E	C	C	E			C
LIME SULFUR	E	E	E	E	E	C	X	E	E	E
LIMONENE (Dipentene)	X	X	X	X	C	X				C
LINOLEIC ACID	X	C	X	X	C	X	X			C
LINSEED OIL	C	C	C	C	E	X	X	E	E	E
LIQUID PETROLEUM GAS (LPG)	X	G	C	X	E	X	X	E	E	E
LUBRICATING OIL	X	C	C	X	C	X	X	E	E	C
LYE SOLUTIONS (Caustic soda solution)	E	G	E	G	C	E	G			C
MEK	E	X	X	E	X	X	X	E	E	X
MAGNESIUM ACETATE	E	X	E	G	X	X	X			X
MAGNESIUM CHLORIDE	E	E	E	E	E	E	E	E	E	E
MAGNESIUM HYDRATE (Magnesium hydroxide)	E	C	E	E	C	C	G	E	E	C
MAGNESIUM HYDROXYDE	E	C	E	E	C	C	G	E	E	C
MAGNESIUM SULFATE	E	E	E	E	E	C	G	E	E	E
MALEIC ACID	X	X	X	C	X	X	X	E	E	X
MALEIC ANHYDRIDE	C	X	X	C	X	X	X			X
MALIC ACID	X	C	C	C	E	E	G	C	C	E
MANGANOUS SULFATE	G	E	E	E	E	G				E
MAPP										
MERCURY	E	E	E	E	E	E	E	E	E	E
MERCURY VAPORS	E	G	E	E	E	G	E			E
MESITYL OXIDE	F	X	X	C	X	X	X			X
METHALLYL ALCOHOL	E	E	E	E	E	E				E
METHALLYL CHLORIDE	X	X	X			X				
METHANE CARBOXYLIC ACID *see Acetic Acid								E	E	
METHANOIC ACID (Formic acid)	E	E	E	E	G	C	E	E	E	G
METHANOL (Methyl alcohol)	C	E	E	E	C	E	E	E	E	C
METHANOL (Wood alcohol)	C	E	E	E	C	E	E	E	E	C
METHOXY ETHANOL	E	E	E	E	C	E		E	E	C

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
METHOXYETHOXY ETHANOL										
METHOXYPROPENYL BENZENE										
METHYL ACETATE	C	C	X	C	X	C	X			X
METHYL ACETOACETATE	C	X	X	C	X	X	X			X
METHYL ACETONE (Ethyl methyl ketone)	E	X	X	E	X	X	X	E	E	X
METHYL ACETYLENE PROPADIENE										
METHYL ALLYL ALCOHOL										
METHYL ALLYL CHLORIDE (Methylallyl chloride)	X	X	X			X				
METHYL AMYL CARBINOL (s-Heptyl alcohol)	G	G	E	E	E	G				E
METHYL BENZENE (Toluene)	X	X	X	X	X	X	X	F	F	X
METHYL BROMIDE	C	X	X	X	C	X	X	F	F	C
METHYL BUTANE (iso-Pentane)	X	X	X	X	E	X				E
METHYL BUTYL ALCOHOL										
METHYL BUTYL KETONE	E	X	X	E	X	X	X	E	E	X
METHYL CARBITOL (Diethylene glycol monomethyl ether)		F		G	F					F
METHYL CELLOSOLVE	C	C	C	C	C	X	X	E	E	C
METHYL CHLORIDE	C	X	X	C	X	X	X	F	F	X
METHYL CYANIDE	E	E	G	E	C	G				C
METHYL ETHYL KETONE	E	X	X	E	X	X	X	E	E	X
METHYL HEXANOL	E	E	E	E	E					E
METHYL METHACRYLATE	X	X	X	X	X	X	X	E	E	X
METHYL NORMAL AMYL KETONE		E	X	E	C	X				C
METHYL PROPYL ETHER	X	X	C	X	X	X				X
METHYL SALICYLATE	C	X	X	C	X	X		E	E	X
METHYL STYRENE (p-Vinyltoluene)	X	X	X	X	X	X				X
METHYL SULFIDE (Dimethyl sulfide)	F	X	X	X	X	X				X
METHYL TERTIARY METYL ETHER										
METHYL 1-2, 4-PENTANEDIOL										
METHYL-ISO-AMYL-KETONE	G		X			X				
METHYL-L-PROPANOL										
METHYL-2-BUTANOL										
METHYL-2-BUTANONE (Methyl isopropyl ketone)	C	X	X	C	X	X	X			X
METHYL-2-HEXANONE (Methyl isoamyl ketone)	G		X			X				
METHYL-2-PENTANOL (Methyl amyl alcohol)	E	G	E	E	G	G				G
METHYL-2-PENTANONE (Methyl isobutyl ketone)	C	X	X	C	X	X				X
METHYL-2-PROPEN-L-OL										
METHYL-3-PENTEN-1-ONE										
METHYL-4-ISOPROPYL BENZENE (Cymene)	X	X	X	X	X	X				X
METHYL AMYL ACETATE			X			X				
METHYL AMYL ALCOHOL	E	G	E	E	G	G				G
METHYLCYCLOHEXANE	X	X	C	X	X	X				X
METHYLENE BROMIDE	X	X	X	X	C	X		E	E	C
METHYLENE CHLORIDE	X	X	X	C	X	X	X	F	F	X
METHYLETHYL KETONE	E	X	X	E	X	X	X			X
METHYL HEXYL KETONE	G	C	X	G	X	X		E		X
METHYL ISOBUTYL CARBINOL (Methyl amyl alcohol)	E	X	E	C	X	G				X

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## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
METHYLISOBUTYL KETONE	C	X	X	C	X	X	X	E	E	X
METHYLISOPROPYL KETONE	C	X	X	C	X	X	X			X
METHYLLACTONITRILE (Acetone cyanohydrin)	E	G	F	E	X	F				X
M-ETHYLPHENOL					E	E				E
METHYLPROPYL CARBINOL	E		E		E	E				E
METHYLPROPYL KETONE	G	X	X	G	X	X		E	E	X
MIL-A-6091	E	E	E	E	C	E				C
MIL-C-4339	X	X	X	X	E	X				E
MIL-C-7024	X	C	X	X	E	X				E
MIL-E-9500	E	E	E	E	E	E	E			E
MIL-F-16884	X	C	C	X	E	X	X			E
MIL-F-17111	X	C	X	X	E	X	X			E
MIL-F-25558 (RJ-1)	X	C	C	X	E	X	X			E
MIL-G-10924	X	C	C	X	E	X	X			E
MIL-G-25013	X	C	C	E	E	C	X			E
MIL-G-25537	X	C	C	X	E	X	X			E
MIL-G-3545	X	C	C	X	E	X				E
MIL-G-5572	X	X	X	X	E	X	X			E
MIL-G-7711	X	X	X	X	E	X	X			E
MIL-H-05606 (HFA)	X	C	C	C	E	X				E
MIL-H-13910	G	E	G	E	E	E	E			E
MIL-H-19457	E	X	X	C	X	X	X			X
MIL-H-22251	E	C	C	E	C		G			C
MIL-H-27601	X	C	C	X	G	X				G
MIL-H-5606 (J43)	X	C	C	C	E	X				E
MIL-H-6083	X	E	C	X	E	C	X			E
MIL-H-8446 (ML0-8515)	X	E	C	X	G	X	X			G
MIL-J-5161	X	X	X	X	C	X	X			C
MIL-J-5624 (JP-3 JP-4 JP-5)	X	X	X	X	E	X	X			E
MIL-L-15016	X		C			X	X			
MIL-L-17331	X		G			X	X			
MIL-L-2104	X	C	C	X	E	X				E
MIL-L-21260	X	C	C	X	E	X	X			E
MIL-L-23699	X	C	C	X	C	X	X			C
MIL-L-25681	E	C	C	E	C	C	G			C
MIL-L-3150	X	C	C	X	E	X	X			E
MIL-L-4343							X			
MIL-L-6082							X			
MIL-L-6085	X	X	X	X	C	X	X			C
MIL-L-7808	X	X	X	X	G	X	X			G
MIL-L-7870	X	C	X	X	E	X	X			E
MIL-L-9000	X	C	C	X	E	X	X			E
MIL-L-9236	X	X	X	X	C	X	X			C
MIL-P-27402	E	C	C	E	C		G			C
MIL-R-25567 (RP-1)										
MIL-R-25576 (RP-1)	X		C			X				
MIL-S-3136 TYPE 1 FUEL	X	C	C	X	E	X	X			E
MIL-S-3136 TYPE 2 FUEL	X	X	X	X	C	X	X			C
MIL-S-3136 TYPE 3 FUEL	X	X	X	X	G	X	X			G
MIL-S-3136 TYPE 4 OIL, LOWSWELL	X	X	C	X	E	X	X			E
MIL-S-3136 TYPE 5 OIL, MEDSWELL	X	G	G	X	E	X	X			E
MIL-S-3136 TYPE 6 OIL, HI SWELL	X	X	C	X	E	X	X			E
MIL-S-81087	E	E	E	E	E	E	E			E

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
MINERAL OIL	C	C	C	X	E	X	X	E	E	E
MINERAL SPIRITS	X	C	G	X	C	X	X			C
MOBILE HF A	X	C	X	X	E	X	X			E
MOLTEN SULFUR	G	E	E	E	G	G				G
MONO-CHLOROACETIC ACID	G	C	G	G	X	C	X	E	E	X
MONOBUTYL ETHER	C	C	C	C	G	X	X			G
MONOCHLOROBENZENE	X	X	X	X	X	X	X	F	F	X
MONOCHLORODIFLUOROMETHANE (Chlorodifluoromethane)	C	C	E	C	X	C	E	E	E	X
MONOETHANOL AMINE	C	G	C	C	G	C	G			G
MONOETHYL AMINE	C	C	F	E	C	C	F			C
MORPHOLINE	C	X	X	C	X	X				X
MOTOR OIL, 40W	X	C	C	X	E	X				E
MTBE (Methyl tert-butyl ether)	G	X			X					X
MURIATIC ACID (Hydrogen chloride)	C	C	C	F	C	C	X			C
N-BUTANAL (Butyraldehyde)	C	X	X	C	X	X	X	E	E	X
N-BUTYLAMINE	C	X	X	C	C	X	X			C
N-BUTYLBENZENE	X	X	X	X	X	X				X
N-BUTYLBROMIDE	X	X	X	X	X	X				X
N-BUTYLBUTYRATE	E	X	X	E	X	X	X			X
N-BUTYLCARBINOL (Pentyl alcohol)	E	E	E	E	E	E		E	E	E
N-NONYL ALCOHOL	E	E	E	E	E	E				E
N-OCTANE	X	G	X	X	C	X	X	E	E	C
N-SERV (75% XYLENE)										
NA-K										
NAPHTHA	X	X	C	X	C	X	X	E	E	C
NAPHTHALENE	X	X	X	X	X	X	X	E	E	X
NAPHTHENIC ACID	X	X	X	X	C	X	X			C
NATURAL GAS	X	E	E	X	E	C	F	E	E	E
NEOHXANE	X	G	X	X	E	X				E
NEON GAS	E	E	E	E	E	E	E			E
NEU-TRI	X		X		X	X				X
NICKEL ACETATE	E	G	X	E	C	E	X			C
NICKEL CHLORIDE	E	C	E	E	E	E	E	E	E	E
NICKEL NITRATE	E	E	E	E	E	E		E	E	E
NICKEL SULFATE	E	E	E	E	E	C	G	E	E	E
NIETYLENE										
NITRIC ACID, CONC (16N)	X	X	X	X	X	X				X
NITRIC ACID RED FUMING	X	X	X	X	X	X	X	X	X	X
NITRIC ACID 10%	E	G	E	E	X	X	X	E	E	X
NITRIC ACID, 13N		X			X	X				X
NITRIC ACID, 13N +5%		X			X	X				X
NITRIC ACID, 20%	G	X	E	E	X	X	X	E	E	X
NITRIC ACID 30%	F	X	E	F	X	X	X	G	G	X
NITRIC ACID 30% - 70%	F	X	C	X	X	X	X	F	F	X
NITRILOTRIETHANOL (Triethanolamine)	E	C	C	E	F	C	G	E	E	F
NITROBENZENE	F	X	X	C	X	X	X	E	E	X
NITROETHANE	G	C	G	C	X	G	G			X
NITROGEN	E	E	E	E	E	E	E	E	E	E
NITROMETHANE	G	C	C	C	X	G	C			X
NITROUS OXIDE GAS		G		E	E					E
NONANOIC ACID	E		X		E	X		E	E	E
NONANOL (Nonyl alcohol)	E	E	E	E	E	E				E
NUTO H										

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## COMPOUND

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
NYVAC LIGHT										
OCTANOIC ACID (n-Caprylic acid)	F		G		F	F				F
OCTANOL (Octyl alcohol)	C	C	C	C	C	C	E			C
OCTYL ACETATE	E	C	E	G	C	C	X	E	E	C
OCTYL ALCOHOL	C	C	C	C	C	C	E			C
OCTYL ALDEHYDE	F		X		X	X		E	E	X
OCTYL AMINE	E	G	F	G	F	F				F
OCTYL CARBINOL	E	E	E	E	E	E				E
OCTYLENE GLYCOL	E	E	E	E	E	E				E
OIL-PETROLEUM							X	G	G	
OLEIC ACID	X	F	C	X	G	X	X	E	E	G
OLEUM (Fuming sulfuric acid)	X	X	X	X	X	X	X	X	X	X
OLIVE OIL	C	G	C	G	E	X	X			E
ORTHO-DICHLOROBENZENE	X	X	X	X	X	X	X			X
ORTHO-DICHLOROBENZOL (o-Dichlorobenzene)	X	X	X	X	X	X	X			X
ORTHOXYLENE	X	X	X	X	X	X	X			X
OXALIC ACID	E	G	E	E	G	C	G	E	E	G
OXYDIETHANOL										
OZONE	G	F	G	E	X	X	X	E	E	X
P-CYME	X	X	X	X	X	X				X
PAINT THINNER	X	X	X	X	X	X	X			X
PALMITIC ACID	C	G	C	C	E	C	G	E	E	E
PAPERMAKERS ALUM										
PARA-DICHLOROBENZENE	X	X	X	X	X	X	X			X
PARAFFIN WAX	X	G	E	X	E	X				E
PARALDEHYDE	E	G	X	E	C	F				C
PARAXYLENE (p-Dimethylbenzene)	X	X	X	X	X	X				X
PCB										
PELARGONIC ALCOHOL (Nonyl alcohol)	E	E	E	E	E	E		E	E	E
PENTACHLOROETHANE	X	X	X		X	X				X
PENTADIONE										
PENTAMETHYLENE (Cyclopentane)	X	C	X	X	G	X				G
PENTANE	X	E	C	X	E	X	X	E	E	E
PENTANOL (Pentyl alcohol)	E		E					E	E	
PENTANONE	G	X	X	G	X	X				X
PENTASOL (Pentachlorophenol)	E	G	E	G	C	X	G	E	E	C
PENTYL ACETATE (Amyl acetate)	X	X	X	C	X	C	X	E	E	X
PENTYL ALCOHOL (n-Amyl alcohol)	C	C	E	E	C	C	G	E	E	C
PENTYL BROMIDE (Amyl bromide)	X	X	X	C	X	X				X
PENTYL CHLORIDE (Amyl chloride)	X	X	X	X	X	X	X	E	E	X
PENTYL ETHER (Amyl ether)	X	X	F	X	C	X				C
PENTYLAMINE (Amylamine)	G	F	F	X	F	F				F
PERCHLORIC ACID	C	E	C	G	X	C	X	E	E	X
PERCHLOROETHYLENE (Tetrachloroethylene)	X	X	X	X	F	X	X	E	E	F
PERCHLOROMETHANE (Carbon tetrachloride)	X	X	X	X	X	X				X
PETROLEUM CRUDE	X	G	E	X	G	X	X	E	E	G
PETROLEUM ETHER	X	X	C	X	E	X	X			E
PETROLEUM OILS	X	G	G	X	X	X	X	E	E	X
PHENBO										
PHENOL	C	X	C	X	X	C	X	E	E	X
PHENOLSULFONIC ACID	G	C	C	E	C	C	X			C

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
PHENYLAMINE (Aniline)	E	X	C	C	X	X		E	E	X
PHENYLBROMIDE (Bromobenzene)	X		X			X				
PHENYLBUTANE										
PHENYLCHLORIDE (Chlorobenzene)	X	X	X	X	X	X		E	E	X
PHENYLETHYLENE (Styrene)	X	X	X	X	X	X	X			X
PHENYLMETHANE (Toluene)	X	X	X	X	X	X		E	E	X
PHENYLMETHANOL (Benzyl alcohol)	E	C	C	C	X	X				X
PHENYLMETHYL ACETATE (Acetic acid)										
PHOSPHATE ESTERS	E	X	X	E	X	X	X			X
PHOSPHORIC ACID 10%	E	E	E	E	E	E	E	E	E	E
PHOSFORIC ACID 10% - 85%	E	G	E	E	G	G	G	E	E	G
PHOSPHORUS TRICHLORIDE	E	X	X	E	X	X	X	E	E	X
PICRIC ACID, H2O SOLUTION	G	E	E	E	E	C	G			E
PINE OIL	X	X	X	X	E	X	X	E	E	E
PINENE	X	C	X	X	C	X	X			C
POLY CHLORINATED BIPHENOL										
POLYETHYLENE GLYCOL E-400	E	G	E	E	C	E				C
POLYOL ESTER		X		X	G					G
POLYPROPYLENE GLYCOL	E	E	E		E	E		E	E	E
POTASSIUM ACETATE	E	E	E	E	C	E	X			C
POTASSIUM BISULFATE	E	E	E	E	E	E	G			E
POTASSIUM BISULFITE	E	E	E	E	E	E	G			E
POTASSIUM CARBONATE	E	E	E	E	E	E	E	E	E	E
POTASSIUM CHLORIDE	E	E	G	E	E	E	E	E	E	E
POTASSIUM CHROMATE	E	E	F	E	G	G	G			G
POTASSIUM CYANIDE	E	E	E	E	E	E	E	E	E	E
POTASSIUM DICHROMATE	E	E	G	E	E	C	G	E	E	E
POTASSIUM HYDRATE (Potassium hydroxide)	E		E			C	G	E	E	
POTASSIUM HYDROXYDE	E	G	E	E	G	C	G	E	E	G
POTASSIUM NITRATE	E	E	E	E	E	E	E	E	E	E
POTASSIUM PERMANGANATE, 5%	E	E	G	E	F	E	G	E	E	F
POTASSIUM SILICATE	E	E	E	E	E	E	E			E
POTASSIUM SULFATE	E	E	E	E	E	C	G	E	E	E
POTASSIUM SULFIDE	E	E	E	E	C	G	G			C
POTASSIUM SULFITE	E	E	C	E	E	C	G	E	E	E
PRESTONE ANTIFREEZE	E	E	E	E	E	E	E			E
PRODUCER GAS	X	G	C	X	E	X	X			E
PROPANE	X	E	C	X	E	X	X	E	E	E
PROPANEDIOL	E	G	E	X	E	E	E	E	E	E
PROPANETRIOL	E	E	E	E	E	E	E	E	E	E
PROPANOL	E	E	E	E	E	E	E	E	E	E
PROPANOLAMINE										
PROPANONE	E	X	C	E	X	C	G	E	E	X
PROPENOL	E		E		E					
PROPANEDIAMINE	E		F		G	G				G
PROPENE NITRILE	X	X			X	G		E	E	X
PROPENYL ALCOHOL (Allyl Alcohol)	E	E	E	E	E	E		E	E	E
PROPENYL ANISOLE	X		X		X	X		E	E	X
PROPIONIC ACID	E	C	G	E	C	E	X			C
PROPIONITRILE	E	C		C	E	E				E
PROPYL ACETATE	C	X	X	C	X	X	X	E	E	X
PROPYL ALCOHOL	E	E	E	E	E	E	E	E	E	E
PROPYL ALDEHYDE	G	X	X	G	X	F				X

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# Chemical Resistance Chart

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## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
PROPYL BENZENE	X	X	X			X				
PROPYL CHLORIDE	F	F	X	F	X	X				X
PROPYL ETHER										
PROPYL NITRATE	C	X	X	C	X	X	X			X
PROPYLENE	X	X	X	X	X	X	X			X
PROPYLENE DIAMINE	E		F		G	G				G
PROPYLENE GLYCOL	E	E	E	E	E	E	E	E	E	E
PYDRAUL, 'E' SERIES	C	X	X	C	X	X	X			X
PYDRAULIC 'C'	X	X	X	X	X	X	X			X
QUINTOLUBRIC 822 SERIES										
RED OIL	X	F	C	F	E	X	X	E	E	E
REFRIGERANT 11 (Freon 11)	X		E			X	X	E	E	
REFRIGERANT 12 (Freon 12)	X		E			X	E	E	E	
REFRIGERANT 22 (Freon 22)	X		E			C	E	E	E	
RESORCINOL	E	A	G	G	C	E	G			C
SAE NO. 10 OIL	X	C	X	X	E	X	X			E
SAL AMMONIAC	E	E	E	E	E	E	E	E	E	E
SEA WATER	E	E	E	E	E	E	E	E	E	E
SEWAGE	G	C	E	G	E	G	G	E	E	E
SILICATE ESTERS	X	E	G	X	G	X	C			G
SILICATE OF SODA (Sodium silicate)	E	E	E	E	E	E	E			E
SILICONE GREASE	E	E	E	E	E	E	E	E	E	E
SILICONE OIL	E	E	E	E	E	E	E	E	E	E
SILVER NITRATE	E	E	E	E	C	E	G	E	E	C
SKYDROL 500 TYPE 2	G	X	X	E	X	X	X			X
SKYDROL 500B	G	X	X	E	X	X	X			X
SKYDROL 500C	G	X	X	E	X	X	X			X
SKYDROL 7000 TYPE 2	E	X	X	E	X	E	X			X
SOAP SOLUTIONS	E	G	E	E	E	F	X	E	E	E
SODA ASH	E	E	E	E	E	E	X	E	E	E
SODA LIME	E	G	G	E	G	E				G
SODA NITER	E	G	E	E	E	G	G	E	E	E
SODIUM ACETATE	F	C	G	E	G	F	X	E	E	G
SODIUM ALUMINATE	E	E	E	E	E	E	G			E
SODIUM BICARBONATE	E	E	E	E	E	E	E	E	E	E
SODIUM BISULFATE	E	E	E	E	E	E	G	E	E	E
SODIUM BISULFITE	E	E	E	E	E	E	G	E	E	E
SODIUM BORATE	E	E	E	E	E	E	E	E	E	E
SODIUM CARBONATE	E	E	E	E	E	E	E	E	E	E
SODIUM CHLORIDE	E	E	E	E	E	E	E	E	E	E
SODIUM CYANIDE	E	E	E	E	E	E	E	E	E	E
SODIUM DICHROMATE	E	F	G	E	E	X	G			E
SODIUM HYDRATE (Sodium hydroxide)	E	G	C	E	X	E	G	E	E	X
SODIUM HYDROCHLORITE	G	F	E	G	F	F	G			F
SODIUM HYDROXIDE (Caustic soda)	E	G	C	E	X	E	G	E	E	X
SODIUM HYPOCHLORITE	C	C	G	E	C	X	F	E	E	C
SODIUM METAPHOSPHATE	G	E	C	E	E	E	E	E	E	E
SODIUM NITRATE	E	G	E	E	C	G	G	E	E	C
SODIUM PERBORATE	E	G	E	E	C	G	G			C
SODIUM PEROXIDE	E	G	G	E	C	C	G	E	E	C
SODIUM PHOSPHATE	E	G	E	E	E	E	E	E	E	E
SODIUM SILICATE	E	E	E	E	E	E	E	E	E	E
SODIUM SULFATE	E	E	E	E	E	C	G	E	E	E
SODIUM SULFIDE	E	E	E	E	E	G	G	E	E	E

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
SODIUM SULFITE	E	E	E	E	E	G	G	E	E	E
SODIUM THIOSULFATE	E	E	E	E	C	G		E	E	C
SOYBEAN OIL	G	E	G	C	E	X	X			E
STANNIC CHLORIDE	E	G	E	E	E	E	E	E	E	E
STANNIC SULFIDE	E	E	E	E	E	E				E
STANNOUS CHLORIDE	E	E	E	G	E	E	E	E	E	E
STANNOUS SULFIDE	E	E	E	E	E	E				E
STEAM, BELOW 350 DEG F	G	X	C	E	X	C	X	X	X	X
STEARIC ACID	C	G	G	G	G	C	G	E	E	G
STODDARD SOLVENT	X	G	X	X	E	X	X	E	E	E
STYRENE	X	X	X	X	X	X	X	F	F	X
SULFAMIC ACID	E	G	E	E	C	G				C
SULFUR	E	E	E	E	X	X	X	E	E	X
SULFUR CHLORIDE	X	E		E	C	X	X			C
SULFUR DIOXIDE	C	C	C	E	X	C	G		G	X
SULFUR TRIOXIDE, DRY	G	X	X	E	X	C	X	X	X	X
SULFURIC ACID 60% (200°F)	E	X	G	E	G	X	X	X	X	G
SULFURIC ACID, CONC.	X	X	X	X	X	X	X	F	F	X
SULFURIC ACID, FUMING	X	X	X	X	X	X	X	X	X	X
SULFURIC ACID, 25%	G	C	E	E	C	E	F	E	E	C
SULFURIC ACID, 25%-50%	G	X	G	E	C	G	F	E	E	C
SULFURIC ACID, 50%-96%	C	X	C	X	X	C	X	G	G	X
SULFUROUS ACID, 10%	E	C	E	E	E	G	G	E	E	E
SULFUROUS ACID, 10%-75%	E	C	E	E	F	G	G	E	E	F
SUTAN										
T-BUTYL AMINE	C	X	X	C	C	X				C
TALL OIL	X	C	F	X	E	X	X			E
TALLOW	X	G	F	E	E	X	X	E	E	E
TANNIC ACID	E	E	E	E	E	E	G	E	E	E
TAR	X	X		X	X	X	X	F	F	X
TAR BITUMINOUS	X	C	X	X	G	X	X			G
TARTARIC ACID	G	E	E	G	E	E	G	E	E	E
TELLONE 2						C				
TERTIARY BUTYL ALCOHOL	C	C	C	C	C	C	G			C
TERPINEOL	C		X			X	X			
TERTIARY BUTYL AMINE	C	X	X	C	C	X				C
TERTIARY BUTYL MERCAPTAN	X	X	X	X	X	X	X			X
TEST ENTRY										
TEST ENTRY 1										
TETRACHLOROBENZENE	X	X	X	X	X	X				X
TETRACHLOROETHANE	X	X	X	X	X	X	X	F	F	X
TETRACHLOROETHYLENE	X	X	X	X	C	X	X	F	F	C
TETRACHLOROMETHANE	X	X	X	X	X	X		E	E	X
TETRACHLORONAPHTHALENE	X	X	X	X	X	X		E	E	X
TETRAETHYLENE GLYCOL	E	E	E	E	E	E				E
TETRAETHYLORTHOSILICATE	E	E		E	E	X				E
TETRAHYDROFURAN (THF)	C	X	X	X	X	X	X			X
TIN CHLORIDE	E	C	C	E	E	E		E	E	E
TITANIUM TETRACHLORIDE	X	C	X	X	C	X	X			C
TOLUENE	X	X	X	X	X	X	X	E	E	X
TOLUIDINE	X	X	X	X	C	X		E	F	C
TOLUOL (Toluene)	X	X	X	X	X	X	X	E	E	X
TRANSFORMER OIL	X	C	C	X	C	X	X	E	E	C
TRANSMISSION 'A' OIL	X	C	C	X	E	X				E

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Key to General Chemical Resistance Chart [all data based on 20°C (68°F) unless noted]:

E – Excellent; G – Good; F – Fair; C – Conditional; I – Insufficient Data; X – Not Recommended; Blank – No Data

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
TRI(2-HYDROXYETHYL) AMINE (Triethanolamine)	E	C	C	E	G	C				G
TRIBUTYL PHOSPHATE	G		X	G	F	C	X			F
TRIBUTYLAMINE	E		F		G	G				G
TRICHLOROACETIC ACID	C	C	X	C	C	C	X			C
TRICHLOROBENZENE	X	X	X	X	C	X	X	F	F	C
TRICHLOROETHANE	X	X	X	X	X	X	X			X
TRICHLOROETHYLENE	X	X	X	X	X	X	X	F	F	X
TRICHLOROMETHANE	X	X	X	X	X	X	X	F	F	X
TRICHLOROTOLUENE (Benzotrachloride)		X	X	E	X	X				X
TRICRESYL PHOSPHATE	E	X	X	E	X	X	X			X
TRIETHANOLAMINE	E	C	C	E	C	C	G	E	E	C
TRIETHYLAMINE	G	G	E	E	E	G	X			E
TRIETHYLENE GLYCOL	E	E	E	E	C	E		E	E	C
TRIHYDROXYBENZOIC ACID	C	C	G	C	C	E				C
TRIMETHYL PENTANE (MIXED)	X	G	C	X	E	X	X			E
TRIMETHYL PENTENE										
TRIMETHYLAMINE	E	E	E	C	C	E				C
TRISODIUM PHOSPHATE	E	E	E	E	E	E	E	E	E	E
TRITOYL PHOSPHATE	E	C	C	E	X	X	X			X
TUNG OIL	C	C	C	X	E	X	X	E	E	E
TUNG OIL (CHINA OIL)	C	C	C	X	E	X	X	E	E	E
TURPENTINE	X	X	X	X	E	X	X	E	E	E
UNSYMMETRICAL DIMETHYL HYDRAZINE (UDMH)	E	C	E	E	C	E	X			C
UNDECYL ALCOHOL	E	E	E	E	E	E				E
UREA (Carbamide)	E	G	E	E	G	E		E	E	G
URETHANE FORMULATIONS										
URIC ACID	E	E	E	E	C	E				C
VARNISH	X	X	X	X	G	X	X	E	E	G
VEGETABLE OILS	C	C	G	F	E	X	X	E	E	E
VERSILUBE F44	E	E	E	E	E	E	E			E
VERSILUBE F55	E	E	E	X	E	E	E			E
VINEGAR (Acetic acid)	E	G	E	E	G	G	G	E	E	G
VINEGAR ACID (Vinegar)	E		E			G		E	E	
VINYL ACETATE	E	C	F	G	C	X	X	E	E	C
VINYL BENZENE	X	X	X	X	C	X	X	F	F	C
VINYL CHLORIDE	X	X	X	C	X	X		E	E	X
VINYL CYANIDE	X	X	G	X	X	G	F	E	E	X
VINYL ETHER (Divinyl ether)	X		G		G	X				G
VINYL STYRENE										
VINYL TOLUENE	X	X	X	X	X	X				X
VINYL TRICHLORIDE (Trichloroethane)	X	X	X	X	X	X				X
VITAL, 4300.5310										
VM & NAPHTHA	X	F	X	X	G	X	X			G
WATER	E	G	E	E	E	E	C	E	E	E
WATER, BOILING	E	G	E	E	G	E				G
WATER, SODA								E	E	
WEMCO C	X	C	X	X	E	X	X			E
WHISKEY	E	E	E	E	E	E	E	E	E	E
WHITE OIL	X	G	C	X	E	X	X	E	E	E
WHITE PINE OIL	X	X	X	X	C	X	X			C
WINES	E	E	E	E	E	E	E	E	E	E
WOOD ALCOHOL (Methanol)	C	E	E	E	C	E	E	E	E	C

## COMPOUND

Chemical or Material Conveyed	CIIR	CR	CSM	EPDM	NBR	NR	SBR	XLPE	UHMWPE	T629AA
WOOD OIL	C	C	C	X	E	X	X	E	E	E
XENON	E	E	E	E	E	E	E			E
XYLENE, XYLON	X	X	X	X	X	X	X	F	F	X
XYLIDINE	G	X	X	G	C	X	X			C
ZEOLITES	E	E	E	E	E	E	E			E
ZINC ACETATE	E	C		E	G	E	X			G
ZINC CARBONATE	E	E	E	E	E	E				E
ZINC CHLORIDE	E	E	E	E	E	E	E	E	E	E
ZINC CHROMATE	E	E	G	E	C	E				C
ZINC SULFATE	E	E	E	E	E	E	G	E	E	E
O-AMINOTOLUENE (o-Methylaniline)	C	X	X	C	X	X				X
1 UNDECANOL	E	E	E	E	E	E	E	E	G	E
1-AMINO-2-PROPANOL (Isopropanolamine)	E	E	F	E	C	G				C
1-AMINOBUTANE (Butylamine)	C	X	X	C	C	X	X			C
1-AMINOPENTANE (Amylamine)	G	C	F	X	F	F				F
1-BROMO-2-METHYL PROPANE (Isobutyl bromide)	X	X	X	X	X	X				X
1-BROMO-3-METHYL BUTANE (Isoamyl bromide)	X	X	X	X	X	X				X
1-BROMOBUTANE (n-Butyl bromide)	X	X	X	X	X	X				X
1-CHLORO-2-METHYL PROPANE (Isobutyl chloride)	X	X	X	X	X	X				X
1-CHLORO-3-METHYL BUTANE (Isoamyl chloride)	X	X	X	X	X	X				X
1-DECANOL	X	X	C	X	E	X		E	E	E
1-HENDECANOL (Undecanol)	E	E	E	E	E	E				E
1,4-DIOXANE	C	X	X	C	X	X		E		X
2(AMINOETHYLAMINO) ETHANOL (N-(Aminoethyl)ethanolamine)	E		G			G				
2(ETHOXYETHOXY) ETHANOL (Carbitol)	C	C	C	C	C	C	G			C
2(ETHOXYETHOXY) ETHYL ACETATE (Carbitol acetate)	G	X	G	X	X	X	X			X
2-AMINOETHANOL (Ethanolamine)	C	C	C	E	C	C	F			C
2-CHLORO-1-HYDROXY-BENZENE (o-Chlorophenol)	X	X	X	X	X	X				X
2-CHLOROPHENOL	X	X	X	X	X	X				X
2-CHLOROPROPANE	X	X	X	X	X	X				X
2-ETHOXYETHANOL	C	X	X	C	C	X	X	E	E	C
2-ETHOXYETHYL ACETATE	C	X	X	G	X	C		E	E	X
2-ETHYL(BUTYRALDEHYDE)	G		X		X	X				X
2-ETHYL-1-HEXANOL	C	C	C	C	C	G	G	E	E	C
2-ETHYLHEXANOIC ACID (Ethylhexoic acid)	F		G		F	F				F
2-ETHYLHEXYL ACETATE	E		G		X	X		C	C	X
2-OCTANONE (Methyl hexyl ketone)	G	C		G	X	X				X
2,4-DI-SEC--PENTYLPHENOL										
3-BROMOPROPENE (Allyl bromide)	X	X	X	X	X	X				X
3-CHLORO-2-METHYL PROPANE										
3-CHLOROPROPENE	C	X	X	X	C	X	E	E	G	C
3-COAL OIL	X	G	F	X	E	X				E
4-HYDROXY-4-METHYL-2-PENTANONE (Diacetone alcohol)	E	F	C	E	X	X	X	E	E	X

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