



CHEMLINE PLASTICS
SUPERIOR FLOW SOLUTIONS

Pure Chemicals • Mixed Chemicals
PVC • CPVC • PP • PVDF • PTFE • PFA
EPDM • FPM/FKM (Viton®) • Nitrile • CPE

ISO 9001:2015 CERTIFIED

CHEMICAL RESISTANCE GUIDE



chemline.com



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Note: Properties of plastics and elastomers vary because different compounds of the same material are used for different products and components. The following materials descriptions are of a general nature. Chemline should be consulted for material recommendations on specific applications.

THERMOPLASTICS

Most plastics are made from synthetic resins (polymers) through the process of polymerization. Two main types of plastics are thermoplastics and thermosets. Thermoplastic products are injection moulded or extruded from compound material processed under heat and pressure.

PVC (Polyvinyl Chloride)

The largest selection of Chemline valves and controls are moulded in PVC. This rigid gray colour material is unplasticized polyvinyl chloride. PVC is formed by the polymerization of the vinyl chloride monomer. Unplasticized PVC or PVC-U has excellent mechanical and chemical resistance properties at low cost. The working temperature range of PVC valves is 0 to 60°C (30 to 140°F). Vinyl is plasticized PVC. The added plasticizer produces a flexible material for such products as tubing, but offers poor chemical resistance.

The PVC used for Chemline valves is identified by cell classification number 12454-A as per ASTM Standard D 1784. Suffix "A" refers to the highest chemical resistance rating. Most other PVC valves as well as pipe and fittings have only a "B" chemical resistance rating. The special PVC "A" compound used in Chemline valves resists attack of most acids, strong alkalis, salts and many other chemicals. High chemical resistance of this material allows its application on aggressive services such as 98% H₂SO₄, dry chlorine and low pressure wet chlorine gas. PVC is attacked by chlorinated hydrocarbons, ketones, esters and some aromatic compounds. It can be used on solutions containing up to 1000 ppm solvents.

Chemline PVC valves are non-toxic. They meet CSA standard B137.0 for toxicity and NSF/ANSI Standard 61 for contact with drinking water. They are resistant to damaging effects of sunlight and weathering, thus painting is not necessary.

CPVC (Chlorinated Polyvinyl Chloride)

CPVC is PVC that has been chlorinated via a free radical chlorination reaction. It is similar to PVC in chemical resistance. Mechanically it is more ductile than PVC. Its main difference is higher working temperature ratings and is therefore used where temperatures are too high for PVC or when an extra margin of safety is required. Valves are suitable for applications from 0 to 95°C (30 to 200°F).

The CPVC compound used for Chemline valves is classified as 23567-A as per ASTM D 1784. The suffix "A" denotes conformance to the highest chemical resistance rating. Most other CPVC valves as well as pipe and fittings have only a "B" chemical resistance rating. The compound is non-toxic, conforming to CSA toxicity standard B137.0.



PP (Pigmented Polypropylene)

Polypropylene (PP) is a thermoplastic polyolefin made from the olefin propylene. A more modern term for polyolefin is polyalkene. Chemline offers piping systems, valves and controls normally in pigmented PP. The addition of grey-beige pigment prevents degradation due to ultraviolet light penetration.

PP is used in a wide variety of applications from acids and alkalis to organic solvents as well as pure water. PP is one of the best materials to use for systems exposed to varying pH levels, as many plastics do not handle both acids and bases well. It is excellent on acids such as hydrochloric and phosphoric acid but unsuitable on strong acids like concentrated nitric, also chlorinated hydrocarbons, aromatic compounds and high concentrations of free chlorine.

PP is ductile at ambient temperature and has good impact strength. It also has good thermal stability up to 90°C (194°F), higher than that of other thermoplastics such as PVC and HDPE. It is light weight. The specific gravity is 0.91 compared to 1.4 for PVC. Its abrasion resistance is good, much better than that of PVC. This is a feature of Chemline PVC butterfly valves which have PP discs as standard.

Chemline PP pipe and fittings weld together very well using either butt or socket fusion. The pressure losses in PP piping systems are lower than metal because of the smooth inside surfaces of the pipes. This property also minimizes or eliminates deposits or bacterial growth. PP is a poor conductor of heat, i.e. is a good insulator. Chilled or hot water systems in PP often require no insulation.

PP is very inert and relatively inexpensive, thus popular for high purity water systems. The standard pigmented material is normally used.

Special grades include U-PP (unpigmented, natural) translucent material sometimes preferred for pure water systems, pigmented black for the highest resistance to UV light, flame retardant grades to meet building code requirements, and electro-conductive grades for volatile media.

Polypropylene is available in two grades:

- Homopolymer (PP-H) made from Type I resin conforming to ASTM D 4101, produced from 100% propylene monomer. PP-H is the most widely utilized. It offers a high strength to weight ratio and is stiffer and stronger than the copolymer grade. Piping is normally PP-H, a few Chemline valves are also PP-H. The working temperature range of PP-H back pressure valves for example is 10 to 70°C (50 to 158°F).
- Random Copolymer (PP-R) made from Type II resin produced from 94% propylene with 6% ethylene. PP-R is a bit softer but has better impact strength, is tougher and more durable than PP-H. Copolymer polypropylene has better stress crack resistance and low temperature toughness than homopolymer at the expense of small reductions in other properties. Most Chemline valves and all the pipe fittings are PP-R. PP-R pipe is also available. The working temperature range of Chemline's PP-R ball valves is -20 to 80°C (-4 to 176°F) and up to 90°C (194°F) for diaphragm valves.

U-PP (Unpigmented Polypropylene)

U-PP is produced from high-purity virgin random copolymer. Chemline offers PP pipe, fittings and valves in unpigmented PP.

U-PP shows excellent purity levels when tested in standard static leach tests (better than high-purity PVC) and has a superior surface quality, i.e. smoothness (Ra=0.4 to 1.5 µm), making it a popular choice for high-purity water systems. It is suitable as piping for high purity water systems, compliant with USP Class VI for pharmaceutical high purity applications. It is also approved by the FDA for contact with food. The disadvantage of U-PP is it will degrade if exposed to UV light (sun light).

PVDF (Polyvinylidene Fluoride)

PVDF also known as "Kynar®", is a highly inert and pure thermoplastic fluoropolymer. It has many superior properties as a thermoplastic.

PVDF has excellent chemical resistance against halogens such as chlorine and bromine, strong acids such as hydrofluoric and nitric acids, organic solvents and oils. PVDF is not resistant to hot bases.

PVDF has much higher abrasion resistance than other thermoplastics. Chemline's butterfly valves with optional PVDF discs offer extended life on abrasive applications.

PVDF (Polyvinylidene Fluoride)

It has remarkable strength over the largest working temperature range. The working temperature range of PVDF ball valves is -20 to 100°C (-4 to 212°F) and up to 120°C (250°F) for diaphragm valves with a PVDF bonnet. PVDF's impact strength is over twice that of PVC. The valves and piping will withstand mechanical abuse at sub-freezing temperatures.

PVDF is a pure polymer without UV stabilizers, thermo stabilizers, softeners, lubricants or flame-retardant additives. It is the preferred choice of piping material for ultra-pure water and high purity chemicals in the semiconductor industry. PVDF is non-toxic, imparts no odours or tastes into the fluid. It is compliant with USP Class VI for pharmaceutical high purity applications and conforms with FDA regulations as outlined in Title 21, Chapter 1, Part 177-2510 (contact with food) as well as with ROHS. The Canadian Food Inspection Agency recognizes Chemline's PVDF for use in any food application by "Letter of No-Objection".

Gas permeability of PVDF is extremely low. A PVDF gas permeability barrier is available on most Chemline diaphragm valves. It is a backing to the PTFE diaphragm and has proven to increase the life of diaphragm valves on chlorine and strong acid services.

PVDF offers excellent fire protection without flame-retardant additives (V-O rating according to the UL-94 vertical flame test) and during combustion has only a slight amount of smoke development. It has high resistance to the damaging effects of UV (sun light) and gamma radiation.

ECTFE (Halar®)

ECTFE is a durable copolymer of ethylene and chlorotrifluoroethylene (CTFE). Chemline offers butt fusion metric pipe and fittings in ECTFE, commonly known as "Halar®". ECTFE shares with PVDF excellent properties such as high chemical resistance, wide application temperature range, good UV resistance (i.e. unaffected by sunlight long term), excellent abrasion resistance, smooth inner surfaces (low pressure losses, resistant to deposits or bacterial buildup), excellent insulating properties and low permeability. It is extremely inert and the material is natural, without any additives or pigment. It is suitable as piping for high purity water systems, compliant with USP Class VI for pharmaceutical high purity applications.



ECTFE has a working temperature range up to 95°C (200°F). Pressure ratings are higher than for PP but lower than for PVDF.

ECTFE has excellent chemical resistance (i.e. not subject to chemically induced stress cracking) against halogens such as chlorine and bromine, strong acids such as hydrofluoric and nitric acids, organic solvents and oils. ECTFE surpasses PVDF in resistance to strong bases and is the best material for handling sodium hypochlorite even at high temperatures. ECTFE is not resistant to hot amines, sodium or potassium.

ECTFE offers excellent fire protection without addition of flame-retardant additives. It has a V-O rating according to the UL-94 vertical flame test.

PE (Polyethylene)

Polyethylene is the polyolefin produced by polymerizing the olefin ethylene. The ball in a Chemline Cavity Free ball valve is made of PE. They withstand abrasion better than PVC.

PSU (Polysulfone)

Polysulfone is a thermoplastic polymer containing a sulfonyl functional group (-SO₂-) attached to two carbon atoms. It is offered as a tube material for Chemline variable area flow meters. It offers high impact strength, high dimensional stability and good optical transparency, all important for accuracy and easy reading of the flow meters. Working temperature range of the PSU flow meters is 0 to 90°C (32 to 194°F) depending on end and nut materials. While the standard PVC tube flow meters are not recommended for gases, PSU ones are. It is also more suitable for high purity water applications. The chemical resistance is good generally, but lower than that of PVC.

PA (Polyamide)

Polyamide is a polymer containing monomers of amides. There are a number of polyamide families. Polyamide is a tube material for Chemline variable area flow meters. It offers high impact strength, high dimensional stability and excellent optical transparency. The special grade to PA used for flow meters has very low water absorption rate. These properties are all important for accuracy and easy reading of the flow meters. PA tube flow meters may be used on pressurized gases, whereas PVC cannot be. Working temperature range of the flow meters is 0 to 75°C (32 to 167°F) depending on end and nut materials. This is higher than for PVC. Chemical resistance is relatively poor compared to PVC, so applications generally are water or only mildly corrosive chemicals.



THERMOSETS

Thermosets are polymers that irreversibly cure. The curing process transforms the resin into a larger molecular weight plastic by a cross-linking process. The process is initiated through heat, generally above 200°C (392°F), through a chemical reaction (two-part epoxy is an example), or irradiation. Due to the three dimensional network of bonds (cross-linking), thermoset materials are generally stronger than thermoplastic materials and have higher temperature ratings.

PDCPD (Polydicyclopentadiene)

PDCPD is a polyolefin thermoset polymer which is formed through the polymerisation of dicyclopentadiene (DCPD). It is used for Chemline butterfly valve bodies from 16" to 48" sizes and air release valves. Reaction Injection Moulding (RIM) is the manufacturing process. PDCPD has excellent corrosion resistance, similar to that of PP and high tensile strength which translates to high valve working pressures. PDCPD body butterfly valves offer higher working pressures than those with PP bodies at the same price. For example a 20" or 24" Type 75 butterfly valve at 30°C (86°F) is 110 psi rated with PDCPD body and 50 psi rated with PP body. Impact strength and dimensional stability is also high.

FRP

Fiberglass reinforced plastic (FRP) is a composite material made from glass reinforcement in a thermoset polymer, usually vinyl ester resin. Chemline FRP damper butterfly valves are made from high elongation vinyl ester for high resistance to impact and thermal shock. Special additives to the FRP can be provided for extremely high abrasion resistance in dirty corrosive gas handling applications. Fire retardants are always incorporated for the Chemline damper butterflies.

GRP (Glass Reinforced Plastic)

GRP is another term for FRP. Flange rings on large Chemline Cavity Free ball valves are GRP.

VE-CF

VE-CF is a proprietary composite thermoset material. It is composed of vinyl ester filled with 10% carbon fiber and 10% glass fiber. It is the body material of Chemline's ChemValve TFM (PTFE) lined butterfly valves. VE-CF has high temperature rating of 130°C (266°F), and high tensile strength for high valve working pressures. It has high impact strength even at low temperatures. All these properties mean durability and safety in severe and difficult chemical applications.



FLUOROPOLYMERS

Fluoropolymers are fluorocarbon based polymers with multiple strong carbon-fluorine bonds. They are characterized by a high resistance to solvents, acids, and bases. They have high application temperature ranges.

PTFE (Polytetrafluoroethylene)

PTFE is almost totally insoluble and chemically inert. It has high temperature resistance. Ball seats of PTFE have natural lubricity. Chemline diaphragm valves with PTFE diaphragms and PTFE bonded EPDM flange gaskets are suitable for the most severe chemical resistance applications. PTFE's weakness is that during the forming process the powder raw material cannot flow, so the finished material is left with some microporosity. This allows it to "cold flow" or creep under conditions of pressure and temperature. The microporosity also reduces the polymer's permeation resistance. Chemline PTFE diaphragms are supplied standard with PVDF gas barriers to avoid permeation problems which may reduce the diaphragm life. Newer fluoropolymers such as PFA and TFM were developed to overcome PTFE's weak properties.

PFA (Perfluoroalkoxy)

Perfluoroalkoxy (PFA) is a fully fluorinated polymer with the same chemical resistance and high temperature performance as PTFE. The big difference is that it is melt process able. PFA can be extruded to make pipe or tubing, or injection molded for tube fittings. It has much lower porosity than PTFE and is translucent instead of opaque white. Mechanically it is stronger. The threads in a moulded PFA tube fitting are vastly superior in durability and strength compared to the threads machined on a comparable PTFE fitting. Application temperature is to 150°C (300°F). Chemline recommends PFA as the best choice of fluoropolymer tubing. Like PTFE and TFM the PFA fluoropolymer is made from tetrafluoroethylene (TFE) and perfluoropropylvinyl ether (PPVE) monomer units. However, it is polymerized with a higher percentage of the PPVE comonomer; as much as 3 to 4% compared to <1% for TFM PTFE. This increases polymer-chain entanglement at lower molecular weight levels and makes it melt process able.

FEP (Fluorinated Ethylene Propylene)

FEP is a melt-process able fully fluorinated polymer with similar chemical resistance as PTFE and PFA and similar low porosity and translucency as PFA. FEP is a copolymer of hexafluoropropylene and tetrafluoroethylene (TFE) resin. FEP is less expensive than PFA tubing but the temperature rating is not as high and mechanical properties not as good. Convuluted FEP is usually chosen for the outer tubing of dual containment PFA tube systems. FEP is not used for moulding fittings.

TFM (modified PTFE)

TFM is a modified form of PTFE. It's chemical and temperature resistance is the same as standard PTFE but TFM can be welded together, or to PFA parts. Also porosity is lower, tensile strength is higher, and cold flow is less. The seats of the ChemValve, all-fluoropolymer lined butterfly valves are made of TFM.

It is a tetrafluoroethylene (TFE) polymerized with less than <1% perfluoropropylvinyl ether (PPVE) to produce a slightly higher density molecular structure with side chain branching. This branching increases polymer-chain entanglement, slightly lowers molecular weight, and reduces voids as well as warpage of the material under pressure.

Compared to standard PTFE, TFM PTFE has higher permeation resistance which means better resistance to aggressive chemical, less "cold flow" or "creep" which means longer life for a butterfly valve seat for example and smoother surfaces which translates to better abrasion resistance and lower particle generation in high purity services.

ELASTOMERS

EPDM (Ethylene Propylene Diene Monomer)

EPDM is a type of synthetic rubber, a cost effective elastomer used as the standard seal material for most Chemline valves. E=ethylene, P=propylene, D=diene and M refers to M-class according to ASTM D-1418. The M class includes rubbers having a saturated chain of the polymethylene type. EPDM has excellent chemical resistance on the great majority of applications including acids, alkalis, salts and many others at temperatures up to 90°C (194°F). EPDM is weak on organic compounds and cannot be used on fats and petroleum oils.

Chemline valves seals of EPDM meet CSA standard B137.0 for non-toxicity.

FKM or FPM ("Viton®" Fluorocarbon Rubber)

FKM (or FPM) is a fluoroelastomer, polymerized from vinylidene fluoride (VDF) and hexafluoropropylene (HFP). Other FKM types include other additional monomers. "Viton®" is more expensive than EPDM so is usually chosen as an alternate elastomer when required. It is a durable material, offering excellent seal life in valves. Resistance to mineral acids, oils and many aliphatic and aromatic hydrocarbons is excellent. FKM/FPM is weak on sodium hydroxide. It is usually offered as a standard seal material for PVDF valves because EPDM's temperature rating is lower than that of PVDF, whereas FKM's maximum temperatures match or exceed those of PVDF.

- FKM-C is a special formulation with higher resistance to chlorine services. A butterfly or diaphragm valve with FKM-C seat or diaphragm can work in services where usually only expensive all-PTFE lined valves can. Elastomer seated valves usually have longer cycle life than those with PTFE seals.
- FKM-F offers better chemical resistance on inorganic acids than standard FKM. The Chemline chemical resistance guide shows ratings for hydrochloric, nitric and sulphuric acids. A butterfly or diaphragm valve with FKM-F seat or diaphragm can work in services where only all-PTFE lined valves are normally selected. Elastomer seated valves usually have longer cycle life than those with PTFE seals.

CPE (Chlorinated Polyethylene)

CPE is a high performance synthetic rubber material renowned for long life in outdoor membrane applications (pools, fountains, roofs, etc.). As a seal material for Chemline valves it has found to be superior to all other elastomers on sodium hypochlorite. It resists hypochlorite up to full strength (13%). Ball valves supplied with CPE seals are very price competitive on this service.

NITRILE (Acrylonitrile-Butadiene Copolymer, abv. NBR)

Nitrile (formerly referred to as Buna-N) has high chemical resistance to oil and petroleum but is weak on oxidizing media i.e. acids. Nitrile has excellent abrasion resistance and is less expensive than FKM/FPM. It is often chosen as a seat material for Chemline butterfly valves in landfill applications and for abrasive slurry applications. It is an excellent alternative to FKM/FPM (Viton®) for petroleum based services.

Aflas®

Aflas® is a copolymer of tetrafluoroethylene and propylene (TFE/P). It offers excellent chemical resistance to strong acids and bases and excellent oil resistance. It is used as an alternate o-ring material in Chemline valves where higher chemical resistance than FKM/FPM is required. It has high heat resistance making it a good choice for PVDF ball valves seals.



Chemical Resistance codes

- A** Excellent = Recommended
- B** Good = Recommended
- C** Fair (limited life)
- X** Not Recommended

Corrosion resistance data given in this publication are based on laboratory tests conducted by the manufacturers of the materials covered and are indicative only of the conditions under which the tests were made. The information may be considered as a basis for recommendation but not as a guarantee. Materials should be tested in actual service to determine suitability for a particular purpose.

Consult Chemline for ratings on other materials not shown in this book such as **Hypalon** or **Neoprene** seals, or **Polyamide** or **Polysulfone** flow meter tubes.


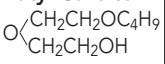
Concentration (%) is by weight.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
		°C	°F								
Acetic Acid CH ₃ COOH	80	20	68	A	B	A	A	A	X	C	X
		40	104	B	C	A	A	A			
		60	140	C	X	C	B	A			
		80	176				C	A			
		100	212					A			
Acetic Acid (Glacial) CH ₃ COOH	99	20	68	X	X	A	A	A	X	X	X
		40	104			B	A	A			
		60	140			C	B	A			
		80	176					A			
		100	212					A			
Acetic Anhydride (CH ₃ CO) ₂ O	Pure	20	68	X	X	B	B	A	X	C	X
		40	104			C	C	A		X	
		60	140			X	X	A			
		80	176					A			
		100	212					A			
Acetone CH ₃ COCH ₃	Pure	20	68	X	X	A	X	A	X	A	X
		40	104			A		A		B	
		60	140			C		A			
		80	176					A			
		100	212					A			
Acetaldehyde CH ₃ CHO	Pure	20	68	X	X	A	X	A	C	A	X
		40	104			A		A	C	A	
		60	140			B		A	X	B	
		80	176					A			
		100	212					A			
Acetaldehyde (Aqueous) CH ₃ CHO	40	20	68	X	X	A	X	A	B	A	X
		40	104			A		A	B	A	
		60	140			A		A	C	A	
		80	176			B		A	X	B	
		100	212					A			
Acetamide CH ₃ CONH ₂	Satu	20	68			A		A	A	A	A
		40	104					A	A	A	A
		60	140					A			
		80	176					A			
		100	212					A			
Acetonitrile CH ₃ CN	10 ppm	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
Acetophenone C ₆ H ₅ COCH ₃	10 ppm	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
Acetyl Acetone CH ₃ COCH ₂ COCH ₃	10 ppm	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
Acetyl Bromide CH ₃ COBr	10 ppm	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
Acetyl Chloride CH ₃ COCl	10 ppm	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
Acetylene C ₂ H ₂	50	20	68	A	X	A	A	A	A	C	A
		40	104	A	B	A	A	A	A	X	A
		60	140	B	C	A	A	A	A		X
		80	176		X		B	A	A		
		100	212				B	A	A		

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Acrylonitrile CH ₂ =CHCN		20	68	X	X	B	A	A	X	A	X	Aluminum Nitrate Al(NO ₃) ₃	Satu	20	68	A	A	A	A	A	A	A	A	A	A
		40	104			C	B	A		A				40	104	A	A	A	A	A	A	A	A	A	A
		60	140				C	A		B				60	140	A	A	A	A	A	A	A	A	A	A
		80	176				X	A						80	176			A	A	A	A	A	A	A	B
		100	212					A						100	212					A	A	A			
Adipic Acid HOOC(CH ₂) ₄ -COOH	Satu	20	68	A	A	A	A	A	A	A	A	Aluminum Sulfate Al ₂ (SO ₄) ₃	Satu	20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A
		80	176		B	B	A	A	A	B				80	176		A	A	A	A	A				
		100	212				A	A	B					100	212					A	A				
Allyl Alcohol CH ₂ =CHCH ₂ OH		20	68	A		A	A	A	A		A	Aminoacetic Acid NH ₂ CH ₂ COOH	10	20	68	A		A	A	A	B	A	A		
		40	104			A	A	A	A	B				40	104	A		A	A	A		A	A		
		60	140			B	A	A	A	B				60	140				A	A					
		80	176				A	A	B					80	176				A	A					
		100	212					A						100	212					A					
Allyl Chloride CH ₂ =CHCH ₂ Cl		20	68	X			A	A	B	X	B	Ammonia Gas NH ₃	100	20	68	A	C	A	A	A	X	A	A		
		40	104				C	A	B	C				40	104	A	C	A	A	A		A	A		
		60	140				X	A	C	X				60	140	A	X	B	A	A		A	B		
		80	176					A						80	176		X	B	A	A		B			
		100	212					A						100	212				B	A					
Alum (Potassium alum) K ₂ SO ₄ Al ₂ (SO ₄) ₃	Satu	20	68	A	A	A	A	A	A	A	A	Ammonium Acetate NH ₄ CH ₃ CO ₂	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	
		80	176		A	A	A	A	B	B				80	176		B	B	A	A	B	B	B	B	
		100	212				A	A	A					100	212				A	A	B				
Aluminum Acetate Al(CH ₃ CO ₂) ₃	Satu	20	68	A	A	A	A	A	A	A	A	Ammonium Bicarbonate NH ₄ HCO ₃		20	68	A	A	A	A	A	A	A	A	A	
		40	104	B	B	A	A	A	B	A				40	104	A	A	A	A	A	A	A	A	A	
		60	140				A	A		A				60	140	A	A	A	A	A	A	A	A	A	
		80	176				A	A		A				80	176			A	A	A					
		100	212				A	A		A				100	212				A	A					
Aluminum Ammonium Sulfate (Ammonium Alum) (NH ₄)Al(SO ₄) ₂	Satu	20	68			A	A	A	A	A	A	Ammonium Chloride NH ₄ Cl	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104			A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140				A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	
		80	176				A	A	A	A	B				80	176		A	A	A	A	A	A	B	
		100	212				A	A	A					100	212				A	A	A				
Aluminum Bromide Al Br ₃	Satu	20	68	A	A	A	A	A	A	A	A	Ammonium Fluoride NH ₄ F	20	20	68	A		A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A		A	A	A	A	A	A	A	
		60	140	B	B	A	A	A	A	A	A			60	140			A	A	A	A	A			
		80	176		B	A	A	A	A	A	A			80	176			B	A	A	A				
		100	212				A	A	A					100	212				A	A					
Aluminum Chloride Al Cl ₃	Satu	20	68	A	A	A	A	A	A	A	A	Ammonium Hydrogen-fluoride (NH ₄)HF ₂	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A	A	A			80	176		A	A	A	A	B	B	B	B	
		100	212				A	A	A					100	212				A	A	B				
Aluminum Fluoride Al F ₃	Satu	20	68	A	A	A	A	A	A	A	A	Ammonium Hydroxide (Ammonium Solution) NH ₄ OH	10	20	68	A	C	A	A	A	B	A	A		
		40	104	A	A	A	A	A	A	A	A			40	104	A	C	A	A	A	C	A	B		
		60	140	A	A	A	A	A	A	A	A			60	140	A	X	A	A	A	X	A	B		
		80	176		A	A	A	A	A	B	B			80	176		X	B	A	A					
		100	212				A	A	B					100	212				A	A					
Aluminum Hydroxide Al(OH) ₃	Satu	20	68	A	A	A	A	A	A	A	A			20	68	A	C	A	A	A	B	A	A		
		40	104	A	A	A	A	A	A	A	A			40	104	A	C	A	A	A	C	A	B		
		60	140	A	A	A	A	A	A	A	A			60	140	A	X	A	A	A	X	A	B		
		80	176		A	A	A	A	A	B	B			80	176		X	B	A	A					
		100	212				A	A	B					100	212				A	A					
120	248				A	A				120	248				B	A									

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE																																																							
		°C	°F											°C	°F																																																															
Ammonium Hydroxide (Ammonium Solution) NH ₄ OH	40	20	68	A	X	A	A	A	B	A	B	Amyl Borate (C ₅ H ₁₁) ₃ BO ₃	Pure	20	68	X	X	X	A	A	A	B	A	40	104				A	A					60	140				A	A					80	176			X	B	A					100	212				B	A					120	248				B	A				
		40	104	A	X	A	A	A	C	A	X			40	104				A	A					60	140				A	A					80	176				B	A					100	212				B	A					120	248				B	A														
		60	140	B	X	A	A	A	X	A				60	140				A	A					80	176				B	A					100	212				B	A					120	248				B	A																									
		80	176			X	B	A						80	176				A	A					100	212				B	A					120	248				B	A																																				
		100	212						B	A				100	212				A	A					120	248				B	A																																															
		120	248						B	A				120	248				A	A					120	248				B	A																																															
Ammonium Metaphosphate NH ₄ PO ₃		20	68	A	A	A	A	A	A	A	A	Amyl Chloride CH ₃ (CH ₂) ₃ CH ₂ Cl	Pure	20	68	X	X	X	A	A	B	X	B	40	104				A	A					60	140				A	A					80	176			A	A	A					100	212				A	A					120	248				A	A				
		40	104	A	A	A	A	A	A	A	B			40	104				A	A					60	140				A	A					80	176			A	A	A					100	212				A	A					120	248				A	A														
		60	140	A	A	A	A	A	A	A	B			60	140				A	A					80	176			A	A	A					100	212				A	A					120	248				A	A																									
		80	176			A	A	A	A	A				80	176				A	A					100	212				A	A					120	248				A	A																																				
		100	212						A	A				100	212				A	A					120	248				A	A																																															
		120	248						A	A				120	248				A	A					120	248				A	A																																															
Ammonium Nitrate NH ₄ NO ₃		20	68	A	B	A	A	A	A	A	A	Aniline C ₆ H ₅ NH ₂	Pure	20	68	C	C	B	A	A	A	A	X	40	104	X	X	B	B	A	B	C			60	140				C	B	A	B	X		80	176				X	C	A				100	212					X	A				120	248						A			
		40	104	A	B	A	A	A	A	A	A			40	104						A				60	140						A				80	176						A				100	212						A				120	248						A													
		60	140	B	B	A	A	A	A	A	A			60	140						A				80	176						A				100	212						A				120	248						A																								
		80	176			A	A	A	A	A	A			80	176						A				100	212						A				120	248						A																																			
		100	212						A	A				100	212						A				120	248						A																																														
		120	248						A	A				120	248						A				120	248						A																																														
Ammonium Perchlorate NH ₄ ClO ₄	*	20	68									Aniline Hydrochloride C ₆ H ₅ NH ₂ -HCl	Pure	20	68	B				A	A			40	104	B				A	A	A			60	140	C				B	A	A			80	176					X	A				100	212						X	A			120	248							A		
		40	104											40	104						A	A	A			60	140						A				80	176						X	A			100	212							A			120	248							A											
		60	140											60	140						A	A	A			80	176							A			100	212							A			120	248							A																						
		80	176											80	176										100	212										120	248																																									
		100	212											100	212										120	248																																																				
		120	248											120	248									120	248																																																					
Ammonium Persulfate (NH ₄) ₂ S ₂ O ₈		20	68	A		A	A	A	A	A		Animal Oil (Lard)		20	68	A	A	A	A	A	A	A	A	40	104	A	A	A	A	A	A	A	A		60	140	A	A	A	A	A	A	A	A		80	176					A	A				100	212						A				120	248						A			
		40	104	A		A	A	A	A	A				40	104						A				60	140						A				80	176						A				100	212						A				120	248						A													
		60	140			B	A	A	A					60	140						A				80	176						A				100	212						A				120	248						A																								
		80	176											80	176										100	212										120	248																																									
		100	212											100	212									120	248																																																					
		120	248											120	248									120	248																																																					
Ammonium Phosphate (NH ₄) ₃ PO ₄		20	68	A	A	A	A	A	A	A	A	Antimony Trichloride SbCl ₃	Satu	20	68	A			A	X	A	A	B	40	104	A			A		A	A			60	140						B	A			80	176						B	B			100	212						B				120	248						B			
		40	104	A	A	A	A	A	A	A	A			40	104										60	140										80	176										100	212										120	248																			
		60	140	A	A	A	A	A	A	A	B			60	140										80	176										100	212										120	248																														
		80	176			A	A	A	A	A				80	176										100	212										120	248																																									
		100	212						A	A				100	212									120	248																																																					
		120	248						A	A				120	248									120	248																																																					
Ammonium Sulfate (NH ₄) ₂ SO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Antimony Trioxide Sb ₂ O ₃		20	68				A	A	A	A	A	40	104					A	A				60	140						A	A			80	176						A	A			100	212						A				120	248						A			
		40	104	A	A	A	A	A	A	A	A			40	104										60	140										80	176										100	212										120	248																			
		60	140	A	A	A	A	A	A	A	A			60	140										80	176										100	212										120	248																														
		80	176			A	A	A	A	A	A			80	176									100	212										120	248																																										
		100	212						A	A				100	212									120	248																																																					
		120	248						A	A				120	248									120	248																																																					
Ammonium Sulfide (NH ₄) ₂ S	Satu	20	68	A	A	A	A	A	X	A	X	Aqua Regia HNO ₃ +3HCl		20	68	C	C	C	A	A	C	X	X	40	104	C	C	C	A	A				60	140				X	A	A			80	176					A	A			100	212					B	A			120	248					C	B							
		40	104	A	A	A	A	A	A	A				40	104									60	140																																																					

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Barium Chloride BaCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	Benzoyl Chloride C ₆ H ₅ COCl	Satu	20	68	X	X	A	A	A	X	X	X		
		40	104	A	A	A	A	A	A	A	A			40	104			A	A						
		60	140	A	A	A	A	A	A	A	A			60	140			B	A						
		80	176			A	A	A	A	A	A			80	176				A						
		100	212					A	A	A				100	212										
		120	248					A	A	A				120	248										
Barium Hydroxide Ba(OH) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Benzyl Alcohol C ₆ H ₅ CH ₂ OH	Pure	20	68			A	A	A	A	A	X		
		40	104	A	A	A	A	A	A	A	A			40	104			A	A	A	A	B			
		60	140	A	A	A	A	A	A	A	A			60	140			A	A	A	A	C			
		80	176		B	A	B	A	A	A	B			80	176				A	A	B				
		100	212					A	A					100	212				A	A	B				
		120	248					A	A					120	248				A	A					
Barium Nitrate Ba(NO ₃) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Benzyl Benzoate C ₆ H ₅ COOCH ₂ -C ₆ H ₅	Satu	20	68					A	A		B	X	
		40	104	A	A	A	A	A	A	A	A			40	104			B	A						
		60	140	A	A	A	A	A	A	A	A			60	140			B	A						
		80	176			A	A	A	A	A	B			80	176										
		100	212					A	A	A				100	212										
		120	248					A	A					120	248										
Barium Sulfate BaSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Benzyl Chloride C ₆ H ₅ CH ₂ Cl	Pure	20	68					A	A	A	C	B	X
		40	104	A	A	A	A	A	A	A	A			40	104				A	A					
		60	140	A	A	A	A	A	A	A	A			60	140				A	A					
		80	176			A	A	A	A	A	B			80	176				A	A					
		100	212					A	A	A				100	212										
		120	248					A	A	A				120	248										
Barium Sulfide BaS	Satu	20	68	A	A	A	A	A	A	A	B	Black Liquor	Satu	20	68	A	A	A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	B			40	104	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A				60	140	B	A	A	A	A	A	A	A		
		80	176			A	A	A	A	A				80	176		B	B	A	A	A	A	B		
		100	212					A	A	A				100	212				A	A	A				
		120	248					A	A	A				120	248				B						
Beer	Pure	20	68	A	A	A	A	A	A	A	B	Bleaching Agent Ca(ClO) ₂ CaCl ₂ -2H ₂ O	5	20	68	A	A			A	A	A	A	C	
		40	104	A	A	A	A	A	A	A	B			40	104	A	A			A	A	A	A		
		60	140	A	A	A	A	A	A	A	B			60	140	A	A			A	A				
		80	176			A	A	A	A	A	B			80	176					A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A					120	248					A	A				
Benzaldehyde C ₆ H ₅ CHO	Satu	20	68	X		A	A	A	C	C	X	Bleaching Agent Ca(ClO) ₂ CaCl ₂ -2H ₂ O	12	20	68	A	A			A	A	A	B	C	
		40	104					A	A					40	104	A	A			A	A				
		60	140					B	A					60	140	A	A			A	A				
		80	176					A	A					80	176					A	A				
		100	212					A						100	212					A	A				
		120	248					A						120	248					A	A				
Benzene C ₆ H ₆	Pure	20	68	C	C	B	A	A	A	X	X	Borax (Sodium Borate) Na ₂ B ₄ O ₇ ·10H ₂ O	Satu	20	68	A	A	A	A	A	A	A	A		
		40	104	X	X	C	B	A	B					40	104	A	A	A	A	A	A	A	B		
		60	140					B	A	B				60	140	A	A	A	A	A	A	A	C		
		80	176					C	A	B				80	176		A	A	A	A	A	A	X		
		100	212					X	A					100	212					A	A				
		120	248					A						120	248					A	A				
Benzene Sulfonic Acid C ₆ H ₅ SO ₃ H	10	20	68	A			A	A	A	A	X	Boric Acid H ₃ BO ₃	Satu	20	68	A	A	A	A	A	A	A	A		
		40	104					B	A	A				40	104	A	A	A	A	A	A	A	A		
		60	140					C	A	A				60	140	A	A	A	A	A	A	A	A		
		80	176					X	A	A				80	176		B	A	A	A	A	B	B		
		100	212						A					100	212					A	A	B			
		120	248					B						120	248					A	A				
Benzene	Pure	20	68			A	A	A	A	X	A	Boron Trichloride BCl ₃	Pure	20	68	A				A	A	A	A	A	
		40	104			B	A	A	A		A			40	104	A				A	A	A	A	A	
		60	140					C	B	A	A			B	60	140	A				A	A	A	A	
		80	176							A	B				80	176					A	A	A		
		100	212							A					100	212					A	A			
		120	248							A					120	248					A	A			
Benzoic Acid C ₆ H ₅ COOH	Pure	20	68	A	A	A	A	A	A	A	B	Bromic Acid HBrO ₃	Pure	20	68	A	A	X	A	A					
		40	104	A	A	A	A	A	A	B	B			40	104	A	A			A	A				
		60	140	B	B			A	A	A	B			B	60	140					A	A			
		80	176			C		A	A	A					80	176					A	A			
		100	212					A	A	B					100	212					A	A			
		120	248					B							120	248					B	A			

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	
		°C	°F											°C	°F									
		Bromine Vapor	25											20	68									B
	40	104		C			A	A	A				40	104				A	A					
	60	140					A	A	A				60	140				A	A					
	80	176					A	A					80	176				A	A					
	100	212					B	A					100	212				A	A					
	120	248					B	A					120	248				A	A					
Bromine Solution (Aqueous)	Satu	20	68	A	C	C	A	A	A	X	X	Butyn Diol C ₄ H ₆ O ₂		20	68	A		A	A	A	A	A	A	A
		40	104	B		X	A	A	A					40	104	B		A	A	A	A	A	A	A
		60	140				A	A						60	140			A	A	A	A	A	A	A
		80	176				A	A						80	176				A	A				
		100	212				B	A						100	212					A				
		120	248				B	A						120	248					A				
Butadiene CH ₂ =CHCH=CH ₂	Gas	20	68	A	A		A	A	A	X	B	Butyl Ether C ₄ H ₉ OC ₄ H ₉		20	68	X	X	C	A	A	X	X	B	
		40	104	A	A		A	A	A		C			40	104				A	A				
		60	140	A			A	A	A					60	140				C	A				
		80	176				A	A						80	176				X					
		100	212				A	A						100	212									
		120	248				A	A						120	248									
Butane CH ₃ (CH ₂) ₂ CH ₃	Gas	20	68	A	A	A	A	A	A	X	A	Butyl Mercaptan CH ₃ (CH ₂) ₃ SH	Pure	20	68				A	A				
		40	104	A	A	A	A	A	A		B			40	104				A	A				
		60	140		A	A	A	A	A					60	140				A	A				
		80	176		A	A	A	A	A					80	176				A	A				
		100	212					A						100	212									
		120	248					A						120	248									
Butyl Acetate CH ₃ COOC ₄ H ₉	Pure	20	68	C	C	C	A	A	X	B	X	Butyl Phenol  C(CH ₃) ₃		20	68	C	C	A	A	A	C	X	X	
		40	104	X	X	X	B	A		C				40	104			B	A	A				
		60	140				X	A		X				60	140				A	A				
		80	176											80	176					A				
		100	212											100	212									
		120	248											120	248									
Butyl Acrylate CH ₂ =CHCOOC ₄ H ₉	Pure	20	68	X	X	X	A	A	X	A	X	Butyl Phthalate C ₆ H ₄ (COOC ₄ H ₉) ₂		20	68				A	A	A	B	B	X
		40	104				B	A		A				40	104				A	B	A	B		
		60	140					C	A					60	140				A	C		X		
		80	176					X						80	176					X				
		100	212											100	212									
		120	248											120	248									
Butyl Alcohol C ₄ H ₉ OH	Pure	20	68	A	A	A	A	A	A	A	B	Butyl Stearate C ₁₇ H ₃₅ COOC ₄ H ₉	Pure	20	68				A	A	A	C	A	
		40	104	A	A	A	A	A	B	A	B			40	104				A	A	A		B	
		60	140	B	A	A	A	A	C	A	B			60	140				A	A	A		C	
		80	176		B	A	A	A		A	B			80	176				A	A				
		100	212				A	A						100	212					A				
		120	248				A	A						120	248					A				
Butyl Amine C ₄ H ₉ NH ₂	Satu	20	68	X	X	X	B	A	A	X	A	Butylene CH ₃ CH ₂ CH=CH ₂		20	68				A	A	A			
		40	104				X	A						40	104				A	A	A			
		60	140					A						60	140				A	A	A			
		80	176											80	176				A	A	B			
		100	212											100	212					A	A			
		120	248											120	248					A	A			
Butyl Bromide C ₄ H ₉ Br	Pure	20	68				A	A				Butyric Acid CH ₃ CH ₂ CH ₂ COOH	Pure	20	68	B	B	A	A	A	B	B	X	
		40	104				A	A						40	104				A	A	A	C		
		60	140				A	A						60	140				A	A	A	X		
		80	176				A	A						80	176				A	A	A			
		100	212				A	A						100	212					A	A			
		120	248				A	A						120	248					B	A			
Butyl Carbitol 		20	68				A	A				Caffeine Citrate		20	68				A	A	A	A		
		40	104				B	A						40	104				A	A				
		60	140					C	A					60	140					A	A			
		80	176											80	176					A	A			
		100	212											100	212						A			
		120	248											120	248						A			
Butyl Cellosolve C ₄ H ₉ O(CH ₂) ₂ OH	Pure	20	68				A	A	X		X	Calcium Acetate Ca(CH ₃ COO) ₂	Satu	20	68	A	A	A	A	A	A	A	A	
		40	104				A	A						40	104	A	A	A	A	A	A	A	A	
		60	140				B	A						60	140	A	A	A	A	A	A	A	A	
		80	176					C	A					80	176		B	B	A	A	A	A		
		100	212					X						100	212					A	A			
		120	248											120	248					B	A			

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE			
		°C	°F											°C	°F											
Calcium Bisulfite (Calcium hydrogen sulfite) Ca ₂ (HCO ₃) ₂		20	68	A	A	A	A	A	A	A	A	Carbitol C ₂ H ₅ (OCH ₂ ·CH ₂) ₂ OH		20	68	A			A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	B			B	A	B	A	B	A	C	
		60	140		A	A	A	A	A					60	140				C	A	C					
		80	176			A	A	A	A					80	176					A	A					
		100	212				A	A						100	212							A				
		120	248											120	248							A				
Calcium Bromide CaBr ₂		20	68	A	A	A	A	A	A	A	A	Carbon Dioxide Gas CO ₂	Wet	20	68	A	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A	
		80	176				A	A						80	176		A	A	A	A	A	A	A	A	A	B
		100	212					A	A					100	212					A	A	A				
		120	248											120	248					A	A	A				
Calcium Carbonate CaCO ₃	Satu	20	68	A	A	A	A	A	A	A	A	Carbon Dioxide Gas CO ₂	Dry	20	68	A	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A					80	176		A	A	A	A	A	A	A	A	A	A
		100	212				A	A	A					100	212					A	A	A				
		120	248					A	A					120	248					A	A	A				
Calcium Chlorate Ca(ClO ₃) ₂	Satu	20	68	A	A	A	A	A	A	A	C	Carbon Disulfide CS ₂	Pure	20	68	C	C	X		A	A	A	X	C		
		40	104	A	A	A	A	A	A					40	104	C	C			A	B		C			
		60	140	A	A	A	A	A	A	A				60	140	X	X			A	C		X			
		80	176		A	A	A	A						80	176					A	X					
		100	212				A	A						100	212					A						
		120	248					A	A					120	248											
Calcium Chloride CaCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	Carbon Monoxide CO	Gas	20	68	A	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A	A	A			80	176		A	A	A	A	A	A	A	A	B	
		100	212				A	A	A					100	212					A	A	A				
		120	248					A	A					120	248											
Calcium Hydroxide Ca(OH) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Carbon Tetrachloride CCl ₄	Pure	20	68	C	C	X		A	A	B	X	X		
		40	104	A	A	A	A	A	A	A	A			40	104	X	X			A	A					
		60	140	A	A	A	A	A	A	A	A			60	140					A	A					
		80	176		B	A	A	A	A	A	C			80	176					A	A					
		100	212			B	A	A	A					100	212					A	A					
		120	248				A	A						120	248											
Calcium Hypochlorite Ca(ClO) ₂	Satu	20	68	A	A	A	A	A	A	B	C	Carbonic Acid H ₂ CO ₃	Satu	20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	B				40	104	A	A	A	A	A	A	A	A	A		
		60	140	B	B	B	A	A	A	C				60	140	A	A	A	A	A	A	A	A	A	A	
		80	176		C	C	A	A	B	C				80	176		B	B	A	A	A	A	A	A	B	
		100	212				B	A	C					100	212					A	A	B				
		120	248											120	248											
Calcium Nitrate Ca(NO ₃) ₂		20	68	A	A	A	A	A	A	A	A	Casein		20	68				A	A	A	A				
		40	104	A	A	A	A	A	A	A	A			40	104				A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	A			60	140				A	A	A	A	A			
		80	176		A	A	A	A	A	A	A			80	176					A	A	A	A			
		100	212				A	A	A					100	212					A	A					
		120	248					A	A					120	248											
Calcium Sulfate CaSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Castor Oil	Pure	20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A		
		80	176		A	A	A	A	A	A	B			80	176		A	A	A	A	A					
		100	212				A	A	A					100	212					A	A					
		120	248					A	A					120	248											
Calcium Sulfide CaS	Satu	20	68	A	A	A	A	A	A	A	A	Chloric Acid HClO ₃	20	20	68	A		X		A	A	A	A			
		40	104	A	A	A	A	A	A	A	A			40	104	A				A	A	A	A			
		60	140	A	A	A	A	A	A	A	A			60	140	B				A	A					
		80	176			A	A	A	A	A	B			80	176					A	A					
		100	212				A	A	A					100	212											
		120	248					A	A					120	248											
Caprylic Acid CH ₃ (CH ₂) ₆ COOH	Pure	20	68				A	A				Chlorine Dioxide ClO ₂	8 gm/li	20	68	A	A	C		A	A	A		A		
		40	104				A	A			40			104	A	B	X		A	A						
		60	140					A	A					60	140	B	B			A	A					
		80	176					A	A					80	176					A	A					
		100	212					A	A					100	212							A				
		120	248						A	A				120	248							A				


*Special Viton® FPM-C required. Consult Chemline.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-C	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	
		°C	°F											°C	°F									
Chlorine Dioxide ClO ₂	14 gm/li	20	68	A	A	C	A	A	A*		A	Chromic Acid Anhydride CrO ₃	50	20	68	C	C	X	A	A	A	A	X	X
		40	104	A	B	X	A	A			B			40	104	X	X		A	A	A			
		60	140	B	B		A	A						60	140				A	A	B			
		80	176				A	A						80	176				B	A	C			
		100	212				A	A						100	212				A					
		120	248				A	A						120	248				A					
Chlorine Gas Cl ₂	** Wet	20	68	A	A	X	A	A	X	X	A	Chromic Potassium Alum KCr(SO ₄) ₂	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104	A	B		A	A						40	104	A	A	A	A	A	A	A	A	
		60	140	B	C		A	A						60	140	A	A	A	A	A	A	A	A	
		80	176				A	A						80	176			A	A	A	A	B	B	
		100	212				A	A						100	212				A	A	A			
		120	248				A	A						120	248				B					
Chlorine Gas (up to 150 ppm moisture) Cl ₂	Dry	20	68	A	A	X	A	A	B	B		Citric Acid CH ₂ COOH CH ₂ COOH CH ₂ COOH	10	20	68	A	A	A	A	A	A	A	A	A
		40	104	A	A		A	A	C	X				40	104	A	A	A	A	A	A	A	A	
		60	140	A	A		A	A	X					60	140	B	B	A	A	A	A	A	A	
		80	176				A	A						80	176		B	A	A	A	A	A	A	
		100	212				A	A						100	212				A	A	A			
		120	248				A	A						120	248				A	A	A			
Chlorine Solution (Chlorinated Water)	400 ppm	20	68	A	A	C	A	A	C	B	A	Coconut Oil		20	68	A	A	A	A	A	A	A	B	A
		40	104	A	B	X	A	A	X	C	A			40	104	A	A	A	A	A	A	B	A	
		60	140	B	B		A	A			B			60	140	A	A	A	A	A	A			
		80	176				A	A			C			80	176		A	A	A	A				
		100	212				A	A						100	212				A	A				
		120	248				A	A						120	248				A	A				
Chlorine Solution (Chlorinated Water)	3000 ppm	20	68	A	A	X	A	A			NITRILE	Copper Acetate Cu(CH ₃ COO) ₂	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104	A	A		A	A						40	104				A	A	A			
		60	140				A	A						60	140				A	A	A			
		80	176				A	A						80	176				A	A				
		100	212				A	A						100	212				A	A				
		120	248				A	A						120	248				A					
Chlorobenzene (Monochloro-benzene) C ₆ H ₅ Cl	Pure	20	68	X	X	B	A	A	B	X	X	Copper Borofluoride Cu(BF ₄) ₂		20	68	A	A	A	A	A	A	A	A	A
		40	104			C	A	A						40	104				A	A	A			
		60	140				A	A						60	140				A	A	A			
		80	176				B	A						80	176				A	A	A			
		100	212				B	A						100	212				A	A				
		120	248												120	248				A	A			
Chloroform (Trichloro-methane) CHCl ₃	Pure	20	68	X	X	C	A	A	B	X	X	Copper Carbonate Cu ₂ CO ₃	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104			X	A	A						40	104	A			A	A				
		60	140				B	A						60	140				A	A				
		80	176				C	A						80	176				A	A				
		100	212				X	A						100	212				A	A				
		120	248												120	248				A	A			
Chloro-sulfonic Acid HSO ₃ Cl	Pure	20	68	X	X	X	C	A	X	X	X	Copper Chloride CuCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104				X	A						40	104	A	A	A	A	A	A	A	A	
		60	140					A						60	140	A	A	A	A	A	A	A	A	
		80	176					A						80	176		A	A	A	A	A	A	A	
		100	212					A						100	212				A	A	A			
		120	248												120	248				A	A			
Chromic Acid Anhydride CrO ₃	10	20	68	A	A	X	A	A	A	B	X	Copper Cyanide CuCN	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104	A	A		A	A	A	C				40	104				A	A	A			
		60	140	A	B		A	A	A	X				60	140				A	A	A			
		80	176		C		A	A	B					80	176			B	A	A				
		100	212				A	A	X					100	212				B	A				
		120	248												120	248				C				
Chromic Acid Anhydride CrO ₃	20	20	68	A	A	X	A	A	A	B	X	Copper Fluoride CuF	Satu	20	68	A	A	A	A	A	A	A	A	A
		40	104	A	B		A	A	A	X				40	104	A	A	A	A	A	A	A	A	
		60	140	B	C		A	A	A					60	140	B	B	B	A	A				
		80	176				A	A	B					80	176				A	A				
		100	212				A	A	C					100	212				A	A				
		120	248												120	248				B				
Chromic Acid Anhydride CrO ₃	30	20	68	C	C	X	A	A	A	X	X	Copper Nitrate Cu(NO ₃) ₂		20	68	A	A	A	A	A	A	A	A	A
		40	104	X	X		A	A	A					40	104	A	A	A	A	A	A	A	A	
		60	140				A	A	A					60	140	B	B	A	A	A	A	A	A	
		80	176				B	A	B					80	176			B	A	A	A	B		
		100	212				C	A	C					100	212				A	A	A			
		120	248												120	248				A	A			

DV Series and Type 14 Diaphragm Valves with PVDF Gas Barriers are always recommended for **Wet Chlorine gas. PVC or CPVC material bodies are recommended for maximum 21 psi services. Consult Chemline on all chlorine gas applications.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE			
		°C	°F											°C	°F											
Copper Sulfate CuSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Cyclohexanol C ₆ H ₁₁ OH	Pure	20	68	X	X	A	A	A	A	A	X	C		
		40	104	A	A	A	A	A	A	A	A							B	A	A	A					
		60	140	A	A	A	A	A	A	A	A			A					C	A	A					
		80	176			A	A	A	A	A	A			A					X	B	A					
		100	212					A	A	A											C	A				
		120	248					A	A																	
Corn Oil		20	68	A	A	A	A	A	A	B	A	Cyclohexanone C ₆ H ₁₀ O	Pure	20	68	X	X	B	A	A			X	X		
		40	104	A	A	A	A	A	A	B	A							C	A	A						
		60	140	A	A	A	A	A	A	A								X	B	A						
		80	176					A	A												A					
		100	212					A	A													A				
		120	248					A	A																	
Corn Syrup		20	68	A	A	A	A	A	A	A	A	Decalin C ₁₀ H ₁₈	Pure	20	68			X	A	A	A	X	X			
		40	104	A	A	A	A	A	A	A	A							A	A							
		60	140	A	A	A	A	A	A	A	A									A	A					
		80	176			A	A	A	A	A	A			B							A	A				
		100	212					A	A	A												A				
		120	248					A	A														A			
Cottonseed Oil		20	68	A	A	A	A	A	A	A	A	Decane CH ₃ (CH ₂) ₈ CH ₃	Pure	20	68					A	A		X	X		
		40	104	A	A	A	A	A	A	B	A							A	A							
		60	140	A	A	A	A	A	A	B	A									A	A					
		80	176			B	A	A	B	C	A										A	A				
		100	212					A	A	B												A				
		120	248					A	A														A			
Creosote		20	68	X	X	A	A	A	A	X	A	Dextrine (C ₆ H ₁₂ O ₅) _n	Satu	20	68	A	A	A	A	A	A	A	A	A		
		40	104				A	A									A	A	A	A	A	A	A	A		
		60	140				A	A									A	A	A	A	A	A	A	A	A	
		80	176						A										A	A	A	A	A	A	B	
		100	212						A											A	A	A	A			
		120	248						A												A	A				
Cresol C ₆ H ₄ (CH ₃)OH	Pure	20	68	C	X	A	A	A	A	X	X	Dextrose (Glucose) C ₆ H ₁₂ O ₆	Pure	20	68	A	A	A	A	A	A	A	A	A		
		40	104			B	A	A	A								A	A	A	A	A	A	A	A		
		60	140				B	A	B								A	A	A	A	A	A	A	A	A	
		80	176				B	A										A	A	A	A	A	A	A	A	
		100	212					C	A												A	A	A			
		120	248																			A	A			
Croton Aldehyde CH ₃ CH=CH·CHO	Pure	20	68	X		A	A	A	A	B	C	Diacetone Alcohol (CH ₃) ₂ C(OH)CH ₂ -COCH ₃	Pure	20	68			A	A	A	X	A	X			
		40	104				A	A										B	B	A						
		60	140					A												B	A					
		80	176																		C	A				
		100	212						A													X	A			
		120	248																							
Cryolite Na ₃ AlF ₆		20	68	B	B	A	A	A				Dibenzyl Ether C ₆ H ₅ CH ₂ O-CH ₂ C ₆ H ₅	Pure	20	68					A	A		C	X		
		40	104	B	B	A	A	A										B	A							
		60	140	B	C	A	A	A											C	A						
		80	176			A	A	A												X	A					
		100	212					A	A													A				
		120	248					A	A														A			
Cupric Fluoride CuF ₂	Satu	20	68	A	A	A	A	A	A	A	A	Dibutyl Amine (C ₄ H ₉) ₂ NH	Pure	20	68					A	A					
		40	104	A	A	A	A	A	A	A	A								C	A						
		60	140	A	A	A	A	A	A	A	A									X	A					
		80	176			B	A	A														A				
		100	212					A	A																	
		120	248					A	A																	
Cuprous Chloride CuCl	Satu	20	68	A	A	A	A	A	A	A	A	Dibutyl Ether (C ₄ H ₉) ₂ O	Pure	20	68	X	X	C	A	A	X	X	B			
		40	104	A	A	A	A	A	A	A	A									A	A					
		60	140	A	A	A	A	A	A	A	A									C	A					
		80	176			A	A	A	A	A	A										X	A				
		100	212					A	A	A																
		120	248					A	A																	
Cyclohexane C ₆ H ₁₂	Pure	20	68	X	X	C	A	A	A	X	B	Dibutyl Phthalate C ₆ H ₄ (COOC ₄ H ₉) ₂	Pure	20	68	X		B	A	A	B	A	X			
		40	104			X	A	A	A										B	A						
		60	140				A	A												C	A					
		80	176					A	A													A				
		100	212					A	A														A			
		120	248					A	A															A		

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE															
		°C	°F											°C	°F																							
Dibutyl Sebacate <chem>H9C4OOC(CH2)8-COOC4H9</chem>		20	68				A	A	C	C	X	Diisopropyl Ketone <chem>[(CH3)CH]2CO</chem>	Pure	20	68	X	X		X	A	X	B	X															
		40	104				B	A							40	104																						
		60	140				C	A							60	140																						
		80	176				X	A							80	176																						
		100	212					A							100	212																						
		120	248					A							120	248																						
Dichloro-acetic Acid <chem>Cl2CHCOOH</chem>		20	68	A		B	A	A	X	C	X	Dimethyl Acetamide <chem>CH3CON(CH3)2</chem>		20	68	X	X	X	X	A																		
		40	104				A	A							40	104																						
		60	140				A	A							60	140																						
		80	176				A	A							80	176																						
		100	212					A							100	212																						
		120	248					A							120	248																						
Dichloro-benzene <chem>C6H4Cl2</chem>	Pure	20	68	X			A	A	B	X	X	Dimethyl Amine <chem>(CH3)2NH</chem>	Pure	20	68	X	X		A	B	A	X	C	X														
		40	104				A	A							40	104			B	C	A																	
		60	140				A	A							60	140				X	A																	
		80	176					A							80	176																						
		100	212					A							100	212																						
		120	248					A							120	248																						
Dichloro-ethylene <chem>CH2=CCl2</chem>		20	68	X			A	A	B	X	X	Dimethyl-aniline <chem>C6H3(CH3)2-(NH2)</chem>	Pure	20	68	X	X		A	A		X	X															
		40	104				A	A							40	104				B	C	A																
		60	140				A	A							60	140					X	A																
		80	176					A							80	176																						
		100	212					A							100	212																						
		120	248					A							120	248																						
Dichloro-isopropyl Ether <chem>Cl-CH2-CH(O-CH-CH2-C)2</chem> <chem>CH3 CH3</chem>	Pure	20	68				A	A				Dimethyl Ether <chem>(CH3)2O</chem>		20	68				A	A	X	X	B															
		40	104				B	A						40	104																							
		60	140				C	A						60	140																							
		80	176				X	A						80	176																							
		100	212												100	212																						
		120	248												120	248																						
Diethylamine <chem>(C2H5)2NH</chem>	Pure	20	68	X	X	A	B	A		A	X	Dimethyl-formamide <chem>HCON(CH3)2</chem>	Pure	20	68	X	X	A	X	A	A	A	X															
		40	104			B	C	A						40	104			A		A																		
		60	140				X	A						60	140			B		A																		
		80	176					A						80	176					A																		
		100	212					A						100	212					A																		
		120	248												120	248																						
Diethylene-triamine <chem>H2N(CH2CH2NH)2H</chem>		20	68	X	X		A	A				Dimethyl Phthalate <chem>C6H4(COOCH3)2</chem>		20	68	X	X	B	B	A	B	B	X															
		40	104				B	A						40	104			B	C	A																		
		60	140				C	A						60	140				X	A																		
		80	176				X	A						80	176																							
		100	212												100	212																						
		120	248												120	248																						
Diethylether <chem>C2H5OC2H5</chem>	Pure	20	68	X	X	C	A	A	C	C	C	Dimethyl Sulfoxide (DMP) <chem>(CH3)2SO</chem>		20	68				X	A																		
		40	104			X	B	A						40	104																							
		60	140				C	A						60	140																							
		80	176				X	A						80	176																							
		100	212					A						100	212																							
		120	248												120	248																						
Diglycolic Acid <chem>(HO2CCH2)2O</chem>	Satu	20	68	A	A	A	A	A	A	A	A	Diocetyl Phthalate (DOP) <chem>C6H4(COOC8H17)2</chem>		20	68	X	X		A	A	A	A	B															
		40	104	A			A	A							40	104				B	A																	
		60	140				A	A							60	140				C	A																	
		80	176					A							80	176				X	A																	
		100	212					A							100	212					A																	
		120	248												120	248																						
Diisobutyl Ketone <chem>[(CH3)2CHCH2]2CO</chem>	Pure	20	68	X	X		A	A	A	X	A	Dioxane <chem>C1COCCOC1</chem>	Pure	20	68	X	X	B	C	A	X	X	X															
		40	104				A	A						40	104			C	C	A																		
		60	140				B	A						60	140				X	A																		
		80	176				X	A						80	176																							
		100	212												100	212																						
		120	248												120	248																						
Diisobutylene <chem>C8H16</chem>	Pure	20	68	X	X		A	A	A	X	A	Dioxolane <chem>C1COCCO1</chem>		20	68	X	X		X	A	X	X	X															
		40	104				A	A						40	104																							
		60	140				A	A						60	140																							
		80	176				A	A						80	176																							
		100	212				A	A						100	212																							
		120	248				A	A						120	248																							

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE				
		°C	°F											°C	°F												
Diphenyl Oxide C ₆ H ₅ OC ₆ H ₅	Satu	20	68	X	X			A	A		X	Ethyl Formate HCOOC ₂ H ₅	Pure	20	68					A	A	X	B	X			
		40	104																	A							
		60	140																		A						
		80	176																								
		100	212																								
		120	248																								
Disodium Hydrogen Ortho Phosphate Na ₂ HPO ₄ ·12H ₂ O		20	68	A	A		A	A				2-Ethyl Hexanol CH ₃ (CH ₂) ₃ CH (C ₂ H ₅)CH ₂ OH		20	68					A	A						
		40	104	A	A		A	A												A	A						
		60	140	A	A		A	A													A	A					
		80	176		A		A	A													B	A					
		100	212				A	A														A					
		120	248				A	A														A					
Epichlorohydrin CH ₂ -CH-CH ₂ Cl 	Pure	20	68	X	X	X	C	A	X	X	X	Ethyl Mercaptan C ₂ H ₅ -SH	Pure	20	68					A	A	A	A	X			
		40	104				X	A													A	A	A	A			
		60	140																			A	A				
		80	176																				A	A			
		100	212																								
		120	248																								
Ethanolamine (Monoethanolamine) H ₂ NCH ₂ CH ₂ OH	Pure	20	68	X	X		X	A			A	Ethyl Monochloroacetate ClCH ₂ COOC ₂ H ₅	Pure	20	68	C	X	A	A	A	C	A	A	X			
		40	104					A												A	C	A					
		60	140																			A					
		80	176																				A				
		100	212																				A				
		120	248																								
Ethyl Acetate CH ₃ COOC ₂ H ₅	Pure	20	68	X	X	B	B	A	X	B	X	Ethyl Oxalate (COOC ₂ H ₅) ₂		20	68					X	A	X	A	X			
		40	104			B	C	A													A						
		60	140			C		A														A					
		80	176					A																			
		100	212					A																			
		120	248					A																			
Ethyl Acetoacetate CH ₃ COCH ₂ -COOC ₂ H ₅	Pure	20	68	X	X	X	A	A	X	A	X	Ethylene Bromide CH ₂ Br-CH ₂ Br	Pure	20	68	X	X			A	A	C	B	X			
		40	104				B	A		A											A	A					
		60	140					C	A													A	A				
		80	176				X	A														A	A				
		100	212					A															A				
		120	248					A															A				
Ethyl Acrylate H ₂ CCH-COOC ₂ H ₅	Pure	20	68	X	X		A	A	X	B	X	Ethylene Chloride (Ethylene Dichloride) ClCH ₂ CH ₂ Cl		20	68	X	X	B	A	A	A	X	X				
		40	104				B	A													A	A					
		60	140					C	A													A	A				
		80	176				X	A															A	A			
		100	212					A																A			
		120	248					A																			
Ethyl Alcohol C ₂ H ₅ OH	Pure	20	68	A	A	A	A	A	A	A	A	Ethylene Chlorohydrin ClCH ₂ -CH ₂ OH	Pure	20	68	X	X	A	B	A	X	A	X				
		40	104	A	B	A	A	A	A	A	A										C	A					
		60	140	B	B	B	A	A	A	A	A											A					
		80	176		C	B	A	A	A	A	A			B									A				
		100	212				A	A																			
		120	248				A	A																			
Ethyl Benzene C ₂ H ₅ C ₂ H ₅		20	68	X	X		A	A	A	X	C	Ethylene Diamine NH ₂ CH ₂ CH ₂ NH ₂	Pure	20	68	X	X	B	X	A		A	A				
		40	104				A	A													A						
		60	140				A	A														A					
		80	176					A															A				
		100	212					A																A			
		120	248					A																			
Ethyl Chloride C ₂ H ₅ Cl		20	68	X	X	C	A	A	A	A	B	Ethylene Glycol HOCH ₂ -CH ₂ OH	Pure	20	68	A	A	A	A	A	A	A	A	A			
		40	104			X	A	A	A	A												A	A	A	A		
		60	140				A	A	A														A	A	A	A	
		80	176				A	A																A	A	A	
		100	212				A	A																	A	A	A
		120	248				A	A																		A	A
Ethyl Ether (C ₂ H ₅) ₂ O	Pure	20	68	X	X	C	A	A	C	C	C	Ethylene Glycol Monoethyl Ether HOCH ₂ -CH ₂ OH	Pure	20	68				A	A	A	C		C			
		40	104			X	B	A													A	A	X		X		
		60	140				C	A															A				
		80	176				X	A																A			
		100	212					A																	A		
		120	248					A																		A	

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Ethylene Oxide <chem>CH2-CH2-O</chem>	Pure	20	68	X	X		B	A	X	X	X	Fluoboric Acid HBF ₄	Pure	20	68	A	A	A	A	A	A	A	A	A	B
		40	104				C	A							40	104	A	A	A	A	A	A	A	A	
		60	140				C	A							60	140	B	A	A	A	A	A	A	A	
		80	176				X	A							80	176		B	B	A	A	A	A	A	B
		100	212												100	212				A	A				
		120	248												120	248				A	A				
Fatty Acids RCOOH		20	68	A	B	A	A	A	A	X	A	Fluorine Gas F ₂	Wet	20	68	A		X	A	A	A	A			
		40	104	A	B	B	A	A						40	104	B			A	A	A	A			
		60	140	A	B	B	A	A						60	140	X			A	A	B	B			
		80	176			C	A	A						80	176					A					
		100	212				A	A						100	212					A					
		120	248				A	A						120	248					A					
Ferrous Chloride FeCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	Fluorosilicic Acid (Hydrofluoro-silicic Acid) H ₂ SiF ₆	50	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	B		
		60	140	B	A	A	A	A	A	A	A			60	140	B	B	A	A	A	A	A	B		
		80	176		A	A	A	A	A	A	B			80	176		C	B	A	A	A	B	B		
		100	212				A	A	B					100	212				A	A	A				
		120	248				A	A						120	248				A	A					
Ferric Hydroxide Fe(OH) ₃	Satu	20	68	A	A	A	A	A	A	A	A	Formaldehyde HCHO	35	20	68	A	A	A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	A			60	140	C	B	A	B	A	A	A			
		80	176		A	A	A	A	A	A	B			80	176			B	X	A	A	A			
		100	212				A	A			100			212					A						
		120	248				A	A			120			248					A						
Ferric Nitrate Fe(NO ₃) ₃	Satu	20	68	A	A	A	A	A	A	A	A	Formaldehyde HCHO	37	20	68	A	A	A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	A			60	140	C	B	A	B	A	A	A			
		80	176		A	B	A	A	A	A	B			80	176			B	X	A	A	A			
		100	212				A	A	A					100	212					A					
		120	248				A	A			120			248					A						
Ferric Sulfate Fe ₂ (SO ₄) ₃		20	68	A	A	A	A	A	A	A	A	Formaldehyde HCHO	50	20	68	A	A	A	A	A	B	A			
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A					
		60	140	A	A	A	A	A	A	A	A			60	140	C	B	A	B	A					
		80	176		A	A	A	A	A	A				80	176			B	X	A					
		100	212				A	A			100			212					A						
		120	248				A	A			120			248					A						
Ferric Sulfide Fe ₂ S ₃		20	68	A	A	A	A	A	A	A	A	Formic Acid HCOOH	90	20	68	A	A	A	A	A	X	A	X		
		40	104	A	A	A	A	A	A	A	A			40	104	B	B	B	A	A					
		60	140	A	A	A	A	A	A	A	A			60	140	X	X	X	A	A					
		80	176		B	B	A	A	A	B				80	176				A	A					
		100	212				A	A			100			212				B	A						
		120	248				A	A			120			248				C	A						
Ferric Chloride FeCl ₃	Satu	20	68	A	A	A	A	A	A	A	A	Freon F-11 CCl ₃ F		20	68	A			A	A	B	C	X		
		40	104	A	A	A	A	A	A	A	A			40	104	A			A	A					
		60	140	B	A	A	A	A	A	A	A			60	140	A			A	A					
		80	176		A	A	A	A	A	B				80	176				A	A					
		100	212				A	A	B					100	212				A	A					
		120	248				A	A						120	248				A	A					
Ferrous Hydroxide Fe(OH) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Freon F-12 CCl ₂ F ₂		20	68	A			A	A	B	B	C		
		40	104	A	A	A	A	A	A	A	A			40	104	A			A	A					
		60	140	A	A	A	A	A	A	A	A			60	140	A			A	A					
		80	176		A	A	A	A	A	B				80	176				A	A					
		100	212				A	A	A					100	212				A	A					
		120	248				A	A						120	248				A	A					
Ferrous Nitrate Fe(NO ₃) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Freon F-21 CHCl ₂ F		20	68	X			A	A	C	C	X		
		40	104	A	A	A	A	A	A	A	A			40	104				A	A	X				
		60	140	A	A	A	A	A	A	A	A			60	140				A	A					
		80	176		A	A	A	A	A	B				80	176				A	A					
		100	212				A	A	A					100	212				A	A					
		120	248				A	A						120	248				A	A					
Ferrous Sulfate FeSO ₄		20	68	A	A	A	A	A	A	A	A	Freon F-22 CHClF ₂		20	68	X			A	A	X	B	X		
		40	104	A	A	A	A	A	A	A	A			40	104				A	A					
		60	140	A	A	A	A	A	A	A	A			60	140				A	A					
		80	176		A	A	A	A	A	B				80	176				A	A					
		100	212				A	A	B					100	212				A	A					
		120	248				A	A						120	248				A	A					

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE			
		°C	°F											°C	°F											
Freon F-113 CClF ₂ -CCl ₂ F		20	68	B			A	A	B	X	X	Glycerol (Glycerine) C ₃ H ₅ (OH) ₃	Pure	20	68	A	A	A	A	A	A	A	A	A	A	
		40	104				A	A							40	104	A	A	A	A	A	A	A	A	A	A
		60	140				A	A							60	140	A	A	A	A	A	A	A	A	A	A
		80	176				A	A							80	176			A	A	A	A	A	A	A	A
		100	212				A	A							100	212					A	A				
		120	248				A	A							120	248					A	A				
Freon F-114 CClF ₂ -CClF ₂		20	68	B			A	A	A	C	B	Glycolic Acid HOCH ₂ COOH	Satu	20	68			A	B	A	A	A	A			
		40	104				A	A	A						40	104			A	X	A					
		60	140				A	A							60	140			A	X	A					
		80	176				A	A							80	176				X	A					
		100	212				A	A							100	212					A					
		120	248				A	A							120	248					A					
Fructose CH ₂ OH CO (CHOH) ₃ CH ₂ OH		20	68	A	A	A	A	A	A	A	A	Heptane CH ₃ (CH ₂) ₅ CH ₃		20	68	A		A	A	A	A	X	A			
		40	104	A	A	A	A	A	A	A	A				40	104	A		B	A	A	A				
		60	140	A	A	A	A	A	A	A	A				60	140	B		C	A	A	A				
		80	176			A	A	A	A	A	B				80	176				A	A					
		100	212				A	A	A						100	212				A	A					
		120	248				A	A							120	248				A	A					
Fruit Juice	Pure	20	68	A		A	A	A	A			Hexane CH ₃ (CH ₂) ₄ CH ₃		20	68	A	A	A	A	A	A	X	A			
		40	104	A		A	A	A	A						40	104	B		B	A	A					
		60	140	A		A	A	A	A						60	140			C	A	A					
		80	176			A	A	A	A						80	176				A	A					
		100	212				A	A							100	212				A	A					
		120	248				A	A							120	248				A	A					
Furan CH = CH O CH = CH		20	68				C	A	X	X	X	Hexyl Alcohol CH ₃ (CH ₂) ₅ OH	Pure	20	68	A	A	A	A	A	A	B	A			
		40	104				X	A							40	104	A			A	A	A	B	A		
		60	140												60	140	B			A	A	A	C	B		
		80	176												80	176				B	A	A	X			
		100	212												100	212					A	A				
		120	248												120	248					A	A	B			
Furfural C ₄ H ₃ OCHO	Pure	20	68	X	X	C	B	A	B	A	X	Hydrazine H ₂ N-NH ₂	Pure	20	68	X	X	C	C	A	X	A	A			
		40	104			X	B	A	B	A					40	104			X	C	A					
		60	140				C	A	C	A					60	140				X	A					
		80	176				X	A							80	176					A					
		100	212					A							100	212					A					
		120	248					A							120	248					A					
Furfuryl Alcohol C ₄ H ₃ OCH ₂ OH	Pure	20	68	X	X		A	A	X	C	X	Hydrobromic HBr	20	20	68	A	A	A	A	A	A	A	C			
		40	104				A	A							40	104	A	A	A	A	A	A	A	C		
		60	140				B	A							60	140	B	B	A	A	A	A	A	X		
		80	176				X	A							80	176			B	A	A	A	B	B		
		100	212												100	212					A	A				
		120	248												120	248					B	A				
Gallic Acid C ₆ H ₂ (OH) ₃ COOH		20	68				A	A	A	A	A	Hydrobromic HBr	47	20	68	A	A	A	A	A	A	A				
		40	104				B	A							40	104	A	A	A	A	A	A	A			
		60	140				C	A							60	140	B	B	A	A	A	A				
		80	176				X	A							80	176			B	A	A	A				
		100	212					A							100	212					A	A				
		120	248					A							120	248					B	A				
Gasoline - Regular*		20	68	B		C	A	A	B	X	B	Hydrochloric HCl	25	20	68	A	A	A	A	A	A	A	A			
		40	104	B		X	A	A	B						40	104	A	A	A	A	A	A	A	A		
		60	140				A	A	B						60	140	A	A	A	A	A	A	A	A		
		80	176				A	A							80	176			A	A	A	A	B	X		
		100	212					A							100	212					A	A	C			
		120	248					A							120	248					B	A				
Gasoline - Sour		20	68	B		C	A	A	B	X	B	Hydrochloric HCl	35	20	68	A	A	A	A	A	A	B	B	A		
		40	104	B		X	A	A							40	104	A	A	A	A	A	X	B	A		
		60	140				A	A							60	140	B	A	A	A	A	X	X	A		
		80	176				A	A							80	176			B	B	A	A				
		100	212					A							100	212					A	A				
		120	248					A							120	248					C	A				
Gelatin & Glue		20	68	A	A	A	A	A	A	A	A	Hydrochloric HCl	38	20	68	A	A	A	A	A	B	C	A			
		40	104	A	A	A	A	A	A	A	A				40	104	A	A	A	A	A	X	C	A		
		60	140	A	A	A	A	A	A	A	A				60	140	B	B	A	A	A	X	X			
		80	176			A	A	A	A	A	B				80	176			B	B	A	A				
		100	212				A	A	A						100	212					B	A				
		120	248				A	A							120	248					C	A				

* For Premium grade Gasoline, a special Buna-N elastomer is recommended over Viton®. Consult Chemline.

**Hydrochloric Acid: 20° Baumé = 32%; 23° Baumé (Fuming) = 38% concentration.

Hydrofluorosilicic Acid - See Fluorosilicic Acid, page 15

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Hydrocyanic Acid HCN		20	68	A	A	A	A	A	A	A		Hydrogen Sulfide (Aqueous) H ₂ S		20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A						40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A						60	140	A	A	A	A	A	B	A	A	A	
		80	176				A	A						80	176		A	A	A	A		A	A		
		100	212				A	A						100	212				A	A					
		120	248				A	A						120	248				A	A					
Hydrofluoric Acid HF	10	20	68	A	A	A	A	A	A	A	A	Hydroiodic Acid HI		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	B	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	C	B	A	A	A	A	A	A			60	140				A	A					
		80	176		C	A	A	A	A	A	A			80	176				A	A					
		100	212			B	A	A	A					100	212				A	A					
		120	248											120	248				A	A					
Hydrofluoric Acid HF	30	20	68	A	A	A	A	A	A	A	A	Hydroquinone C ₆ H ₄ (OH) ₂	Satu	20	68	A		A	A	A	A	A	A	B	
		40	104	B	B	A	A	A	A	A	A			40	104	A		A	A	A	A	A			
		60	140	C	C	A	A	A	A	A	A			60	140	A		A	A	A					
		80	176	X	X	B	A	A	B	B	A			80	176			A	A	A					
		100	212				A	A			B			100	212				A	A					
		120	248											120	248				A	A					
Hydrofluoric Acid HF	40	20	68	B	B	A	A	A	A	A	A	Hypochlorous Acid HClO	10	20	68	A	A	A	A	A	A	A	A	C	
		40	104	C	C	A	A	A	A	A	A			40	104	A	A	B	A	A	A	B			
		60	140	X	X	A	A	A	A	B	A			60	140	A	A		A	A	A				
		80	176			B	A	A	B	C	A			80	176		B		A	A	B				
		100	212				A	A			B			100	212				A	A					
		120	248											120	248				B	A					
Hydrofluoric Acid HF	55	20	68	B	B	A	A	A	A	A	A	Iodine I ₂		20	68	C		A	A	A	B	X			
		40	104	C	X	A	A	A	A	B	A			40	104	X			A	A					
		60	140	X		A	A	A	A	C	A			60	140				A	A					
		80	176			B	A	A	B	X	A			80	176				A	A					
		100	212				A	A			B			100	212					A					
		120	248											120	248					A					
Hydrogen H ₂		20	68	A	A	A	A	A	A		NITRILE	Isobutyl Alcohol (CH ₃) ₃ CHCH ₂ OH	Pure	20	68	A		A	A	A	A	A	B		
		40	104	A	A	A	A	A	A		40			104	A		A	A	A						
		60	140	A	A	A	A	A	A		60			140			A	A	A						
		80	176		A	A	A	A	A		80			176				A	A						
		100	212				A	A			100			212				A	A						
		120	248					A			120			248					A						
Hydrogen Fluoride (Anhydrous) HF		20	68			A	A	A	X	B	X	Iso-octane (CH ₃)CCH ₂ CH(CH ₃) ₂		20	68	A		A	A	A	A	X	A		
		40	104				A	A						40	104				A	A					
		60	140				A	A						60	140				A	A					
		80	176				A	A						80	176				A	A					
		100	212				A	A						100	212				A	A					
		120	248				A	A						120	248					A					
Hydrogen Peroxide H ₂ O ₂	20	20	68	A	A	A	A	A	A	A	X	Isophorone C ₉ H ₁₄ O	Pure	20	68					A	X	X	X		
		40	104	A	A	A	A	A	A	B				40	104					A					
		60	140	B	B	A	A	A	A	B				60	140					A					
		80	176		B	B	A	A	A	C				80	176										
		100	212				A	A						100	212										
		120	248					A						120	248										
Hydrogen Peroxide H ₂ O ₂	35	20	68	A	B	A	A	A	A	B	X	Isopropyl Acetate (CH ₃)COOCH(CH ₃) ₂	Pure	20	68					A	X	B	X		
		40	104	B	C	B	A	A	A	C				40	104					A					
		60	140	C	X	B	A	A	C	X				60	140					A					
		80	176			C	A	A						80	176					A					
		100	212				A	A						100	212					A					
		120	248					A						120	248										
Hydrogen Peroxide H ₂ O ₂	**	20	68	B	C	C	A	A	C	X	X	Isopropyl Alcohol (CH ₃) ₂ CHOH	Pure	20	68	A	A	A	A	A	A	A	A		
		40	104	C	X	X	A	A	X					40	104	A	A	A	A	A	A	A	B		
		60	140				A	A						60	140	A	A	A	A	A	A				
		80	176				A	A						80	176				A	A	A				
		100	212					A						100	212					A	B				
		120	248						A					120	248					A					
Hydrogen Sulfide Gas H ₂ S	Dry	20	68	A	A	A	A	A	A	A	A	Isopropyl Chloride (CH ₃) ₂ CHCl		20	68				A	A	A	X	B		
		40	104	A	A	A	A	A	A	A	A			40	104				A	A					
		60	140	A	A	A	A	A	A	A	A			60	140				B	A					
		80	176		B	A	A	A	A	B	B			80	176					C	A				
		100	212				A	A	A					100	212						A				
		120	248					A						120	248										

**Hydrogen Peroxide: 35% at 55°C Viton® = "A"; 40% at 66°C Viton® = "B".

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE				
		°C	°F											°C	°F												
Isopropyl Ether (CH ₃) ₂ CHO -CH(CH ₃) ₂	Pure	20	68				A	A	C	C	B	Lead Chloride PbCl ₂		20	68	A	A	A	A	A	A	A	A	A	A		
		40	104				B	A							40	104	A	A	A	A	A	A	A	A	A	A	
		60	140				C	A							60	140	A	A	A	A	A	A	A	A	A	A	
		80	176				X	A							80	176			A	A	A	A	A	A	A	A	
		100	212												100	212					A	A	A				
		120	248												120	248					A	A					
Jet Fuel JP-4		20	68	A		B	A	A	A	X	B	Lead Nitrate Pb(NO ₃) ₂	Satu	20	68	A	A	A	A	A	A	A	A	A	A		
		40	104	A		X	A	A							40	104	A	A	A	A	A	A	A	A	A	A	
		60	140	B			A	A							60	140	A	A	A	A	A	A	A	A	A	A	
		80	176				A	A							80	176		A	A	A	A	A	A	A	A	A	
		100	212				B	A							100	212					A	A	A				
		120	248					A							120	248											
Jet Fuel JP-5		20	68	A		B	A	A	A	X	A	Lead Sulfate PbSO ₄		20	68	A	A	A	A	A	A	A	A	A	A		
		40	104	A		X	A	A							40	104	A	A	A	A	A	A	A	A	A	A	
		60	140	B			A	A							60	140	A	A	A	A	A	A	A	A	A	A	
		80	176				A	A							80	176		A	A	A	A	A	A	A	A	A	
		100	212				A	A							100	212					A	A	A				
		120	248					A							120	248					A	A					
Kerosene		20	68	B		A	A	A	A	X	A	Lemon Oil		20	68			C	A	A	A	A	C	A			
		40	104	B		C	A	A							40	104			X	A	A						
		60	140	C		X	A	A							60	140				A	A						
		80	176				A	A							80	176				A	A						
		100	212				A	A							100	212					A	A					
		120	248				B	A							120	248					A	A					
Lacquer (Nitroselrouse lacquer)		20	68	X		A	A	A	C	X	X	Linoleic Acid CH ₃ (CH=CH-CH ₃) ₃ -(CH ₂) ₇ COOH		20	68	A		B	A	A	A	X	A				
		40	104				A	A							40	104	A			A	A						
		60	140				A	A							60	140	B			A	A						
		80	176				A	A							80	176				A	A						
		100	212				A	A							100	212					A	A					
		120	248					A							120	248					A	A					
Lactic Acid CH ₃ CH(OH)COOH	25	20	68	A	A	A	A	A	A	A	A	Linoleic Oil		20	68	A			A	A	A						
		40	104	A	A	A	A	A	A	A	B			40	104	A			A	A	B						
		60	140	A	A	A	A	A	A	A	C			60	140	B			A	A	X						
		80	176		B	A	A	A	A	A				80	176				A	A							
		100	212				A	A	A	A				100	212					A	A						
		120	248				A	A						120	248					A	A						
Lactic Acid CH ₃ CH(OH)COOH	80	20	68	A	A	A	A	A	A	A	A	Linseed Oil		20	68	A	A	A	A	A	A	B	A				
		40	104	B	A	A	A	A	A	A	B			40	104	A	A	A	A	A	A						
		60	140		B	A	A	A	A	A	C			60	140	A	A	A	A	A	A						
		80	176			B	A	A	A	A				80	176			B	A	A	A						
		100	212				B	A	B					100	212					A	A						
		120	248					A						120	248					A	A						
Lard (Animal Oil)		20	68	A	A	A	A	A	A	A	A	Lithium Bromide LiBr	60	20	68	A		A	A	A	A		A				
		40	104				A	A	A	A	A			40	104	A		A	A	A	A		A				
		60	140				A	A	A	A	A			A	60	140	A		A	A	A	A		A			
		80	176				A	A							80	176			B	A	A	A		A			
		100	212				A	A							100	212					A	A		A			
		120	248				A	A							120	248					A	A					
Lauric Acid CH ₃ (CH ₂) ₁₀ COOH		20	68	A		A	A	A	A			Lithium Chloride LiCl	Satu	20	68	A	A	A	A	A	A	A	A	A			
		40	104	A			A	A							40	104	A	A	A	A	A	A	A	A	A		
		60	140			A	A	A							60	140	A	A	A	A	A	A			A		
		80	176				A	A							80	176			A	A	A	A			A		
		100	212				A	A							100	212					A	A					
		120	248				A	A							120	248					B	A					
Lauroyl Chloride CH ₃ (CH ₂) ₁₀ COCl	Pure	20	68				A	A				Lithium Hydroxide LiOH		20	68	A		A	A	A	A	A	A	A			
		40	104				A	A						40	104	A		A	A	A	A	A	A				
		60	140				A	A							60	140	A		A	A	A	A	A	A			
		80	176				A	A							80	176			A	A	A						
		100	212				A	A							100	212					A	A					
		120	248				A	A							120	248						A					
Lead Acetate Pb(CH ₃ COO) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Liquor (Gin, Whiskey, etc.)		20	68	A	A	A	A	A	A	A	A	A			
		40	104	A	A	A	A	A	A	A	A			A	40	104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	B	A	A			A	60	140				A	A	A	A	A	A		
		80	176		A	A	A	A	B	A	B				80	176				A	A	A	A	A	A		
		100	212				A	A							100	212					A	A					
		120	248				A	A							120	248						A					

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Magnesium Carbonate MgCO ₃		20	68	A	A	A	A	A	A	A	A	Mercuric Chloride HgCl ₂		20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	A
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A
		80	176		B	A	A	A	A	A	A			80	176			A	A	A	A	A	A		B
		100	212				A	A	A					100	212				A	A					
		120	248				A	A						120	248				A	A					
Magnesium Chloride MgCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	Mercuric Cyanide Hg(CN) ₂	Satu	20	68	A		A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A		A	A	A	A	A	A			
		60	140	B	A	A	A	A	A	A	60			140	A		A	A	A	A	A				
		80	176		B	A	A	A	A	A	80			176			A	A	A						
		100	212				A	A	B		100			212				A	A						
		120	248				A	A			120			248				A	A						
Magnesium Citrate Mg ₃ (C ₆ H ₅ O ₇) ₂		20	68	A	A	A	A	A	A	A	A	Mercuric Nitrate Hg(NO ₃) ₂		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	60			140	A	A	A	A	A	A	A				
		80	176		A	A	A	A	A	A	80			176			A	A	A						
		100	212				A	A	A		100			212				A							
		120	248				A	A			120			248				A							
Magnesium Fluoride MgF ₂	Satu	20	68	A	A	A	A	A	A	A	A	Mercuric Sulfate HgSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	60			140	A	A	A	A	A	A	A	A			
		80	176			A	A	A	A	A	80			176		A	A	A	A	A	A	A			
		100	212				A	A	A		100			212				A	A	A					
		120	248					A			120			248				A	A						
Magnesium Hydroxide Mg(OH) ₂	Satu	20	68	A	A	A	A	A	A	A	A	Mercurous Nitrate Hg ₂ (NO ₃) ₂	Satu	20	68	A		A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A		A	A							
		60	140	A		A	A	A	A	A	60			140	A		A	A							
		80	176			A	A	A	A	A	80			176			A	A							
		100	212				B	A	A		100			212				A	A						
		120	248				B	A			120			248				A	A						
Magnesium Nitrate Mg(NO ₃) ₂		20	68	A	A	A	A	A	A	A	A	Mercury Hg		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	60			140	A	A	A	A	A	A	A	A			
		80	176			A	A	A	A	A	80			176		A	A	A	A	A	A	A			
		100	212				A	A	A		100			212				A	A						
		120	248				A	A			120			248				A	A						
Magnesium Sulfate (Epsom Salts) MgSO ₄		20	68	A	A	A	A	A	A	A	A	Methane CH ₄		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	A	60			140	B	B	B	A	A	A	A	A			
		80	176		A	A	A	A	A	A	80			176				A	A	A	B				
		100	212				A	A	A		100			212				A	A	B					
		120	248				A	A			120			248				A	A						
Maleic Acid HOOC ₂ H ₂ COOH		20	68	A	A	A	A	A	A	A	B	Methane Sulfonic Acid CH ₃ SO ₃ H	50	20	68				A	A					
		40	104	A	A	A	A	A	A	B	B			40	104			A	A						
		60	140	B	A	A	A	A	B	B	60			140			A	A							
		80	176		A	A	A	A	B		80			176			A	A							
		100	212				A	A			100			212				A							
		120	248				A	A			120			248				A							
Malic Acid HOOCCH ₂ CH(OH)COOH	Satu	20	68	A	A	A	A	A	A	A	A	Methyl Acetate CH ₃ COOCH ₃	Pure	20	68	X	X	B	A	A	X	B	X		
		40	104	A	A	A	A	A	A	A	40			104			B	A		C					
		60	140	A	A	A	A	A	B	A	60			140											
		80	176		A	A	A	A	A	B	80			176				C	A						
		100	212				A	A			100			212				X	A						
		120	248				A	A			120			248					A						
Manganese Chloride MnCl ₂		20	68	A		A	A	A	A	A	A	Methyl Acrylate CH ₂ CHCOOCH ₃	Pure	20	68				A	A	X	B	X		
		40	104	A		A	A	A	A	A	40			104				B	A						
		60	140	B		A	A	A	A	A	60			140				C	A						
		80	176			B	A	A	A		80			176				X	A						
		100	212				A	A			100			212					A						
		120	248				A	A			120			248					A						
Manganese Sulfate MnSO ₄		20	68	A	A	A	A	A	A	A	A	Methyl Alcohol CH ₃ OH	Pure	20	68	A	A	A	A	A	B	A	A		
		40	104	A	A	A	A	A	A	A	40			104	B	B	A	A	A	B	A	B			
		60	140	A	A	A	A	A	A	A	60			140	B	B	A	A	A	C	A	C			
		80	176		B	A	A	A	A	A	80			176			B	A	A	C	B				
		100	212				A	A	A		100			212				A	A	C					
		120	248				A	A			120			248				A	A						

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	
		°C	°F											°C	°F									
Methyl Amine CH ₃ NH ₂		20	68	X	X	B	C	A	A	A	C	Methyl Monochloroacetate ClCH ₂ COOCH ₃	Pure	20	68	C	X	A	A	A	C	A	X	
		40	104				X	A						40	104			A	C	A				
		60	140					A						60	140			A		A				
		80	176					A						80	176					A				
		100	212					A						100	212									
Methyl Bromide CH ₃ Br		20	68	C		X	A	A	A	B	X	Methyl Salicylate C ₆ H ₄ (OH)COOCH ₃		20	68			A	A	A	A	X	X	
		40	104				A	A						40	104									
		60	140				A	A						60	140									
		80	176				A	A						80	176									
		100	212				A	A						100	212									
Methyl Cellosolve HOCH ₂ CH ₂ OCH ₃		20	68	A		A	A	A		B		Methylene Bromide CH ₂ Br ₂		20	68					A	A	A	X	X
		40	104				A	A						40	104				A	A				
		60	140				A	A						60	140				A	A				
		80	176											80	176					A				
		100	212											100	212					A				
Methyl Chloride CH ₃ Cl		20	68	X		C	A	A	C	B	X	Methylene Chloride CH ₂ Cl ₂	**	20	68	X	X	X	B	A	C	X	X	
		40	104				A	A						40	104				B	A				
		60	140				A	A						60	140				X	A				
		80	176				A	A						80	176									
		100	212				A	A						100	212									
Methyl Chloroform CH ₃ CCl ₃		20	68	X		C	A	A	B	X	X	Methylene Iodine CH ₂ I ₂		20	68					A	A	A		
		40	104				B	A						40	104					A	A			
		60	140					A						60	140					A	A			
		80	176					A						80	176						A			
		100	212					A						100	212							A		
Methyl Ethyl Ketone (MEK) CH ₃ -CO-C ₂ H ₅		20	68	X	X	A	X	A	X	B	X	Monochloroacetic acid ClCH ₂ COOH	50	20	68	A	A	B	A	A	B	C	X	
		40	104			C		A		C				40	104	B	B	B	A	A	X			
		60	140			X		A						60	140	B	B	X	A	A				
		80	176					A						80	176				A	A				
		100	212					B						100	212					A				
Methyl Formate HCOOCH ₃		20	68				A	A	X	B	X	Monochlorobenzene C ₆ H ₅ Cl		20	68	X	X	B	A	A	B	X	X	
		40	104				B	A						40	104			C	A	A				
		60	140				C	A						60	140				A	A				
		80	176				C	A						80	176				B	A				
		100	212											100	212				B	A				
Methyl Isobutyl Carbinol (CH ₃) ₂ CHCH ₂ CH(OH)CH ₃		20	68			A	A	A				Monoethanolamine (Ethanolamine) H ₂ NCH ₂ CH ₂ OH	Pure	20	68	X	X		X	A		A	A	
		40	104			A	A	A						40	104					A				
		60	140				B	A						60	140									
		80	176				B	A						80	176									
		100	212					A						100	212									
Methyl Isobutyl Ketone (CH ₃) ₂ CHCH ₂ -COCH ₃		20	68	X	X	A	X	A	X	B	X	Monomethylaniline C ₆ H ₅ NHCH ₃		20	68					A	A	A	X	X
		40	104					A						40	104				B	A				
		60	140					A						60	140				X	A				
		80	176					A						80	176					A				
		100	212					A						100	212									
Methyl Isopropyl Ketone (CH ₃) ₂ CHCOCH ₃		20	68				X	A		X		Morpholine O(CH ₂ CH ₂) ₂ NH	Pure	20	68	X	X	A	A	A	A	C	X	
		40	104	X				A						40	104			A	A	A				
		60	140					A						60	140			A	C	A				
		80	176					A						80	176					A				
		100	212					A						100	212									
Methyl Methacrylate CH ₂ C(CH ₃)-COOCH ₃		20	68				A	A	X	X	X	Naphtha		20	68	A		A	A	A	A	X	B	
		40	104				B	A						40	104			B	A	A				
		60	140					C	A					60	140			C	A	A				
		80	176				X	A						80	176					A	A			
		100	212											100	212					A	A			
120	248										120	248					A	A						


** Methylene Chloride: PP & Viton® recommended at 1 gm/litre concentration.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F			
		°C	°F											°C	°F											
Naphthalene C ₁₀ H ₈		20	68	X		B	A	A	A	X	X	Nitric Acid HNO ₃	*	70	20	68	A	B	C	A	A	C	X	A		
		40	104				A	A	A						70	40	104	B	C	X	A	A	X		A	
		60	140				A	A	A						70	60	140	C	X		B	A				B
		80	176				A	A	A						70	80	176				C	A				
		100	212				A	A							70	100	212				X	A				
		120	248				A	A							70	120	248									
Natural Gas		20	68	A			A	A	A	A	A	Nitric Acid HNO ₃	*	98	20	68	X	X	X	A	A	X	X	X		
		40	104	A			A	A						98	40	104				B	B					
		60	140	B			A	A						98	60	140				X	B					
		80	176				A	A						98	80	176					C					
		100	212				A	A						98	100	212					C					
		120	248				A	A						98	120	248										
Nickel Acetate (CH ₃ CO ₂) ₂ Ni	Satu	20	68	A	A	A	A	A	C	A	A	Nitrobenzene C ₆ H ₅ NO ₂		20	68	X	X		A	B	A	B	B			
		40	104	A	A	A	A	A						20	104			B	C	A						
		60	140	A	A	A	A	A						20	140			C	X	A						
		80	176		A	A	A	A						20	176					A						
		100	212				A	A						20	212					A						
		120	248				A	A						20	248					A						
Nickel Dichloride NiCl ₂	Satu	20	68	A	A	A	A	A	A	A	A	Nitroethane CH ₃ CH ₂ NO ₂	Pure	20	68				A	A	X	A				
		40	104	A	A	A	A	A	A	A	A			20	104				A							
		60	140	A	A	A	A	A	A	A	A			20	140				A							
		80	176		A	A	A	A	A	A	A			20	176				A							
		100	212				A	A	A					20	212											
		120	248				A	A						20	248											
Nickel Nitrate Ni(NO ₃) ₂	Satu	20	68	A		A	A	A	A	A	A	Nitrogen Dioxide NO ₂		20	68	A			A	A	A	A	A	A		
		40	104	A		A	A	A	A	A	A			20	104				A	A						
		60	140	A		A	A	A	A	A	A			20	140				A	A						
		80	176			A	A	A	A	A	B			20	176				A	A						
		100	212				A	A	A					20	212											
		120	248				A	A	A					20	248					A						
Nickel Sulfate NiSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Nitromethane CH ₃ NO ₂	Pure	20	68				A	A		B	X			
		40	104	A	A	A	A	A	A	A	A			20	104				A	A						
		60	140	A	A	A	A	A	A	A	A			20	140					A						
		80	176		B	B	A	A	A	A	A			20	176					A						
		100	212				A	A	B					20	212											
		120	248				A	A						20	248											
Nicotine C ₁₀ H ₁₄ N ₂		20	68	A		A	A	A				Nitrotoluene C ₆ H ₄ CH ₃ NO ₂	Pure	20	68	X	X	A	A	A	C	X	C			
		40	104	A		A	B	A						20	104			A	A	A						
		60	140	A				A						20	140				A	A						
		80	176					A						20	176					A						
		100	212					A						20	212					A						
		120	248					A						20	248											
Nicotinic Acid C ₃ H ₄ NCOOH		20	68	A		A	A	A		A		Nitrous Acid HNO ₂	10	20	68			C	A	A	A	B	X			
		40	104	A		A	A	A						20	104			X	A	A						
		60	140	A		A	A	A						20	140				A	A						
		80	176			A	A	A						20	176				A	A						
		100	212				A	A						20	212											
		120	248				A	A						20	248											
Nitric Acid HNO ₃	10	20	68	A	A	A	A	A	A	A	A	Nitrous Oxide N ₂ O		20	68	A			A	A	A	A	A			
		40	104	A	A	A	A	A	A	A	A			20	104	A			A	A	A	A	A			
		60	140	A	A	A	A	A	A	B	FKM-F				20	140	A			A	A	A	A	A		
		80	176		B	B	A	A	A	X					20	176				A	A	A	A	B		
		100	212				A	A	A						20	212					A	A	B			
		120	248				A	A							20	248					B	A	B			
Nitric Acid HNO ₃	*	30	20	68	A	A	A	A	A	B	A	Octane C ₈ H ₁₈		20	68				A	A	A	A	X	A		
		30	40	104	A	B	A	A	A	A	B			A	20	104				A	A					
		30	60	140	B	C	B	A	A	B	X			A	20	140				A	A					
		30	80	176		X	B	A	A	C				A	20	176				A	A					
		30	100	212				A	A	C				B	20	212					A	A				
		30	120	248				B	A						20	248					A	A				
Nitric Acid HNO ₃	*	50	20	68	A	A	A	A	A	X	A	Octene CH ₃ (CH ₂) ₅ CH=CH ₃	Pure	20	68				A	A	A	X	A			
		50	40	104	B	B	B	A	A	B				A	20	104				A	A					
		50	60	140	B	C	C	A	A	C				B	20	140				A	A					
		50	80	176		X	X	A	A	X				C	20	176					A	A				
		50	100	212				C	A					X	20	212					A	A				
		50	120	248					A						20	248					A	A				

*When DV Series Diaphragm Valves are used on nitric acid, the PVDF Gas Barrier is always recommended if a PTFE diaphragm.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	
		°C	°F											°C	°F									
Oil - Heavy		20	68	B	B	X	A	A	B	X	B	Oxalic Acid HOOC-COOH	20	20	68	A	A	A	A	A	B	A	B	
		40	104				A	A	B		B			40	104	A	A	A	A	A		A		
		60	140				A	A						60	140	A	A	A	A	A				
		80	176											80	176		A	A	B	A				
		100	212					A						100	212				C	A				
		120	248					A						120	248					A				
Oil - Light (Incl. Diesel Fuels)		20	68	A		A	A	A	A	X	A	Oxalic Acid HOOC-COOH	50	20	68	A	A	A	A	A	B	A	B	
		40	104				A	A	A					40	104	A	A	A	A	A		A		
		60	140				A	A	A					60	140	A	A	A	B	A				
		80	176				A	A						80	176		A	A	C	A				
		100	212					A	A					100	212					A				
		120	248					A						120	248					A				
Oil - Lubricating (ASTM 1)		20	68	A		B	A	A	A	X	A	Oxygen Gas O ₂		20	68	A	A	A	A	A	A	A	B	
		40	104	A		C	A	A	A		B			40	104	A			A	A	A	A		
		60	140	A		X	A	A	A					60	140	A			A	A	A	A		
		80	176				A	A	A					80	176				A	A	A	A		
		100	212					A	A	A				100	212					A				
		120	248					A	A	A				120	248					A				
Oil - Lubricating (ASTM 2 and 3)		20	68	A		B	A	A	A	X	A	Ozone Gas O ₃	7000 ppm	20	68	X	X	X	B	A		B		
		40	104	A		C	A	A	A		B			40	104				A					
		60	140	A		X	A	A	A					60	140				A					
		80	176				A	A	A					80	176									
		100	212					A	A	B				100	212									
		120	248					A	A	A				120	248									
Oil - Sulfonated		20	68	A		A	A	A	A	A	A	Ozone Solution (Aqueous) O ₃	10 ppm	20	68	A	A	B	A	A	A	A		
		40	104											40	104	A	B	B	A	A	B	B		
		60	140											60	140	B	B		A	A	B	B		
		80	176											80	176				A	A				
		100	212											100	212									
		120	248											120	248									
Oil - Machine, Mineral, Motor		20	68	A		A	A	A	A	X	A	Ozone Solution (Aqueous) O ₃	0.5 mg/l	20	68	A	B	X	A	A	A	A		
		40	104	A		B	A	A	A		A			40	104	A	B		A	A	B	B		
		60	140	A		C	A	A	A		B			60	140	B			A	A	B	B		
		80	176				A	A						80	176				A	A				
		100	212					A						100	212									
		120	248											120	248									
Oil - Petroleum (Crude Oil)		20	68	B		B	A	A	A	X	A	Palmitic Acid C ₁₅ H ₃₁ COOH	Pure	20	68	A		A	A	A	A	A	B	A
		40	104				A	A						40	104			A	A	A				
		60	140				A	A						60	140			A	A	A				
		80	176				A	A						80	176			B	A	A				
		100	212					A	A					100	212				A	A				
		120	248					A	A					120	248				A	A				
Oleic Acid CH(CH ₂) ₇ CH ₃ CH(CH ₂) ₇ COOH		20	68	A	B	A	A	A	A	X	X	Paraffin Oil		20	68	A	A	A	A	A	A	A	X	A
		40	104	A	B	A	A	A	A					40	104	A	A	A	A	A	A		A	
		60	140	A	B	A	A	A	A					60	140			A	A	A	A			
		80	176			A	A	A	A					80	176				A	A				
		100	212					A	A	A				100	212				A	A				
		120	248					B	A	B				120	248				A	A				
Oleum (fuming sulphuric acid) H ₂ SO ₄ +SO ₃		20	68	X	X	X	X	A	X	X	X	Perchloro-ethylene Cl ₂ C=CCl ₂	Pure	20	68	X	X	B	A	A	A	X	X	
		40	104											40	104			C	A	A	A			
		60	140											60	140			X	A	A	B			
		80	176											80	176				A	A				
		100	212											100	212				A	A				
		120	248											120	248				A	A				
Olive Oil		20	68	A	A	A	A	A	A	B	A	Perchloric Acid HClO ₄	10	20	68	A		A	A	A	A	A	X	
		40	104	A	A	A	A	A	A		A			40	104	A		A	A	A	A	A		
		60	140	A	A	A	A	A	A		A			60	140	B		B	A	A	A	A		
		80	176			A	A	A	A		A			80	176				A	A				
		100	212					A	A					100	212				A	A				
		120	248					A	A					120	248				A	A				
Organic Phosphorus Series Insecticide (Sumition®)		20	68	X	X	A	A	A	A	A	C	Perchloric Acid HClO ₄	70	20	68	B		C	A	A	A	A		
		40	104			A	A	A	A	A				40	104				A	A	A	A		
		60	140			B	A	A	A	A				60	140				A	A	A	A		
		80	176				A	A						80	176				A	A				
		100	212					B	A					100	212					A				
		120	248					B	A					120	248					A				

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Potassium Aluminate Silicate Al ₂ O ₃ ·K ₂ O·6SiO ₂		20	68	A	A	A	A	A	A	A	A	Potassium Ferricyanide K ₃ [Fe(CN) ₆]		20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A	A	A			80	176		A	A	A	A	A	A	A	A	
		100	212				A	A	A					100	212				A	A					
		120	248				A	A						120	248				A	A					
Potassium Bicarbonate KHCO ₃	Satu	20	68	A	A	A	A	A	A	A	A	Potassium Ferrocyanide K ₄ [Fe(CN) ₆]		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A		
		80	176		A	A	A	A	A	A	A			80	176			A	A	A	A				
		100	212				A	A	A					100	212				A	A					
		120	248				A	A						120	248				A	A					
Potassium Bichromate K ₂ Cr ₂ O ₇	Satu	20	68	A	A	A	A	A	A	A	A	Potassium Fluoride KF		20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	40			104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A		
		80	176		B	B	A	A	A	A	B			80	176			A	A	A	A	A	B		
		100	212				A	A	A					100	212				A	A	A				
		120	248				A	A						120	248				A	A					
Potassium Bisulfate KHSO ₄		20	68	A	A	A	A	A	A	A	A	Potassium Hydroxide (Caustic Potash) KOH	25	20	68	A	B	A	A	A	X	A	B		
		40	104	A	B	A	A	A		A	B														
		60	140	A	B	A	B	A		A	C														
		80	176		B	A	C	A		A	X														
		100	212				X	A																	
		120	248																						
Potassium Borate		20	68	A	A	A	A	A	A	A	Potassium Hypochlorite KClO		20	68	A	A	A	A	A	A	A	B			
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A					
		60	140	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A					
		80	176		A	A	A	A	A	A			80	176				A							
		100	212				A	A	A				100	212				A							
		120	248				A	A					120	248				A							
Potassium Bromate KBrO ₃		20	68	A	A	A	A	A	A	A	Potassium Iodide KI		20	68	A	A	A	A	A	A	A	A			
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A				
		60	140	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A				
		80	176		B	B	A	A					80	176		A	A	A	A	A	A	B			
		100	212				A	A					100	212				A	A	A					
		120	248				A	A					120	248				A	A						
Potassium Bromide KBr		20	68	A	A	A	A	A	A	A	Potassium Nitrate KNO ₃		20	68	A	A	A	A	A	A	A	A			
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A				
		60	140	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A				
		80	176		A	A	A	A	A	A			80	176			A	A	A	A	A	B			
		100	212				A	A	A				100	212				A	A	A					
		120	248				B	A					120	248				A	A						
Potassium Chlorate (Aqueous) KClO ₃		20	68	A	A	A	A	A	A	C	Potassium Perborate KBO ₃		20	68	A	A	A	A	A						
		40	104	A	A	A	A	A	A				40	104	A	A	A	A	A						
		60	140	B	A	A	A	A	A				60	140	A	A	A	A	A						
		80	176		B	B	A	A					80	176		A	A	A	A						
		100	212				A	A					100	212				A	A						
		120	248				A	A					120	248				A	A						
Potassium Chloride KCl		20	68	A	A	A	A	A	A	A	Potassium Perchlorate KClO ₄		20	68	A	A	A	A	A						
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A						
		60	140	A	A	A	A	A	A	A			60	140	A	A	A	A	A						
		80	176		A	A	A	A	A	A			80	176		B	B	A	A						
		100	212				A	A	A				100	212				A	A						
		120	248				A	A					120	248				A	A						
Potassium Chromate K ₂ CrO ₄		20	68	A	A	A	A	A	A	A	Potassium Permanganate KMnO ₄	10	20	68	A	A	A	A	A	A	A	A	C		
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A					
		60	140	B	B	A	A	A	A	A			60	140	B	A	A	A	A	A					
		80	176		B	B	A	A	A	A			80	176		A	B	A	A						
		100	212				A	A	A				100	212				A	A						
		120	248				B	A					120	248				A	A						
Potassium Cyanide KCN		20	68	A	A	A	A	A	A	A	Potassium Permanganate KMnO ₄	25	20	68	A	A	A	A	A	A	A	X			
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A					
		60	140	A	A	A	A	A	A	A			60	140	B	A	A	A	A	A					
		80	176		B	B	A	A	A	B			80	176		B	B	A	A						
		100	212				A	A	B				100	212				A	A						
		120	248				A	A					120	248				A	A						

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Potassium Persulfate K ₂ S ₂ O ₈	Pure	20	68	A	A	A	A	A	A	A	X	Propylene Dichloride CH ₃ CHClCH ₂ Cl	Pure	20	68	X	X	X	A	A	B	X	X		
		40	104	A		A	A	A	A	A					40	104				A	A				
		60	140	A		A	A	A	A	A					60	140				B	A				
		80	176				A	A							80	176				B	A				
		100	212				A	A							100	212									
		120	248				A	A							120	248									
Potassium Phosphate K ₃ PO ₄	Pure	20	68	A	A	A	A	A	A	A	A	Propylene Oxide CH ₃ CHCH ₂ 	Pure	20	68	X	X		C	A	X	X	X		
		40	104	A		A	A	A	A	A	C				40	104				X	A				
		60	140	C		A	A	A	A	A	X				60	140					A				
		80	176			A	A	A	A	A					80	176									
		100	212				A	A	A						100	212									
		120	248					A							120	248									
Potassium Sulfate K ₂ SO ₄	Pure	20	68	A	A	A	A	A	A	A	A	Pyridine C ₅ H ₅ N	Pure	20	68	X	X	A	C	A	X	B	X		
		40	104	A	A	A	A	A	A	A	A				40	104			A	C	A		C		
		60	140	A	A	A	A	A	A	A	A				60	140			B	X	A		X		
		80	176			A	A	A	A	A	B				80	176					A				
		100	212				A	A	A						100	212									
		120	248				A	A	B						120	248									
Potassium Sulfide K ₂ S	Pure	20	68	A	A	A	A	A	A	A		Radium Chloride RaCl ₂	Pure	20	68	A		A	A	A	A	A	X		
		40	104	A	A	A	A	A	A	A				40	104			A	A	A	A	A			
		60	140	A	A	A	A	A	A	A					60	140			A	A	A	A	A		
		80	176			A	A	A	A	A					80	176				A	A				
		100	212				A	A	A						100	212				A	A				
		120	248				A	A							120	248									
Potassium Sulfite K ₂ SO ₃	Pure	20	68	A	A	A	A	A	A	A	A	Rhodium Chloride RhCl ₃	Pure	20	68	A		A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	A				40	104			A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A				60	140				A	A	A	A		
		80	176				A	A							80	176				A	A				
		100	212				A	A							100	212					A				
		120	248												120	248									
Potassium Thiocyanate KSCN	Pure	20	68	A	A	A	A	A	A	C	A	Salicylaldehyde C ₆ H ₄ OHCHO	Pure	20	68				A	A	A	A	A		
		40	104	A	A	A	A	A	A					40	104				A	A	A				
		60	140	A	A	A	A	A	A						60	140				B	A				
		80	176				A	A	A						80	176				C	A				
		100	212				A	A							100	212				X	A				
		120	248				A	A							120	248									
Propane CH ₃ CH ₂ CH ₃	Pure	20	68	A	A	A	A	A	A	X	A	Salicylic Acid C ₆ H ₄ OHCO ₂ H	Pure	20	68	A			A	A	A	A	A		
		40	104			A	A	A						40	104	A			A	A	A	A			
		60	140			B	A	A							60	140	A			A	A	A	A		
		80	176				A	A							80	176				A	A	A			
		100	212				A	A							100	212				B	A				
		120	248				A	A							120	248					A				
Propionic Acid CH ₃ CH ₂ COOH	50	20	68	A		A	A	A	X	B	B	Silicic Acid SiO ₃ ·nH ₂ O	Pure	20	68	A	A	A	A	A	A	A	A		
		40	104	A		A	A	A						40	104	A	A	A	A	A	A	A	A		
		60	140			A	A	A							60	140	A	A	A	A	A	A	A	A	
		80	176					A							80	176			A	A	A	A	A	A	
		100	212					A							100	212					A	A	A		
		120	248					A							120	248					A	A			
Propyl Acetate CH ₃ CO ₂ C ₃ H ₇	Pure	20	68				A	A	X	B	X	Silicone Oil	Pure	20	68	A	A	A	A	A	A	A	A		
		40	104				B	A						40	104	A	A	A	A	A	A	A	A		
		60	140				C	A							60	140	A	A	A	A	A	A	A		
		80	176				X	A							80	176			A	A	A	A			
		100	212												100	212					A	A			
		120	248												120	248					A	A			
Propyl Alcohol C ₃ H ₇ OH	Pure	20	68	A	A	A	A	A	A	A	B	Silver Acetate CH ₃ COOAg	Pure	20	68	A		A	A	A	A	A	A		
		40	104	A	A	A	A	A	A	A	B				40	104				A	A	A			
		60	140	B		A	A	A	A	A	A			C		60	140				A	A	A		
		80	176			B	B	B	A	A	A			X		80	176				A	A			
		100	212					C	A	A						100	212					A	A		
		120	248						A							120	248					A	A		
Propyl Nitrate C ₃ H ₇ NO ₃	Pure	20	68				A	A	X	B		Silver Chloride AgCl	Pure	20	68	A	A	A	A	A	A	A	A		
		40	104					A						40	104	A	A	A	A	A	A	A			
		60	140					A							60	140	A	A	A	A	A	A	A		
		80	176					A							80	176			A	A	A	A	A		
		100	212												100	212					A	A	A		
		120	248												120	248					A	A			

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE		
		°C	°F											°C	°F										
Silver Cyanide AgCN	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Bromide NaBr	Satu	20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	A
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	A
		80	176			A	A	A	A					80	176			A	A	A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Silver Nitrate AgNO ₃	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Carbonate Na ₂ CO ₃	Satu	20	68	A	A	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A	A	
		80	176			A	A	A	A					80	176			A	A	A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Silver Sulfate Ag ₂ SO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Chlorate NaClO ₃	Satu	20	68	A	A	A	A	A	A	A	A	C	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	B	B	A	A	A	A			
		80	176			A	A	A	A					80	176		B	B	A	A	B	A			
		100	212					A	A					100	212				A	A	B				
		120	248					A	A			120	248				A	A							
Sodium Acetate CH ₃ COONa	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Chloride (Brine) NaCl	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A			40			104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A			60			140	A	A	A	A	A	A	A	A	A		
		80	176			A	A	A			80			176			A	A	A	A	A	A	A		
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Sodium Alum NaAl(SO ₄) ₂ ·12H ₂ O	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Chlorite NaClO ₂	25	20	68	X	X			A	A	B	B	X	
		40	104	A	A	A	A	A	A	A	A			40	104				B	B					
		60	140	A	A	A	A	A	A	A	A			60	140										
		80	176			A	A	A	A					80	176										
		100	212					A	A					100	212										
		120	248					A	A			120	248												
Sodium Benzoate C ₆ H ₅ COONa	Satu	20	68	A	A	A	A	A				Sodium Cyanide (Aqueous) NaCN	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A			40			104	A	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A			60			140	A	A	A	A	A	A	A	A	A		
		80	176			A	A	A			80			176			B	B	A	A	A	A	A		
		100	212					A	A					100	212					A	A	B			
		120	248					A	A			120	248					A	A						
Sodium Bicarbonate NaHCO ₃	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Dithionite Na ₂ S ₂ O ₄	10	20	68	A				A	A	A	A	X	
		40	104	A	A	A	A	A	A	A	A			40	104	A				A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140					A	A	A	A		
		80	176			A	A	A	A					80	176							A			
		100	212					A	A					100	212							A			
		120	248					A	A			120	248												
Sodium Bichromate Na ₂ Cr ₂ O ₇	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Ferricyanide Na ₃ [Fe(CN) ₆]·H ₂ O	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A		
		60	140	A	A	B	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A		
		80	176			B	B	A	A	A	A			80	176			B	B	A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Sodium Bisulfate NaHSO ₄	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Ferrocyanide Na ₄ [Fe(CN) ₆]·10H ₂ O	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A		
		80	176			B	B	A	A	A	A			80	176			B	B	A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Sodium Bisulfite NaHSO ₃	Satu	20	68	A	A	A	A	A	A	A	A	Sodium Fluoride NaF	Satu	20	68	A	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A	A		
		80	176			B	B	A	A	A	A			80	176					A	A				
		100	212					A	A					100	212					A	A				
		120	248					A	A			120	248					A	A						
Sodium Bromate NaBrO ₃	Satu	20	68	A				A	A	A	X	Sodium Hydroxide (Caustic Soda) NaOH	10	20	68	A	C	A	B	A	C	A	A		
		40	104					A	A	A	A			40	104	A	X	A	B	A	C	A	A		
		60	140					A	A	A	A			60	140	A	X	A	B	A	X	A	A		
		80	176					A	A					80	176			X	B	C	A		A	A	
		100	212					A	A					100	212					C	A				
		120	248					A	A			120	248					A							

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE			
		°C	°F											°C	°F											
Sodium Hydroxide (Caustic Soda) NaOH	15	20	68	A	B	A	A	A	C	A	A	Sodium Nitrite NaNO ₂	Satu	20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	C	A	A	A	C	A	A			40	104	A	A	A	A	A	A	A	A	A		
		60	140	A	C	A	B	A	X	A	A			A	60	140	B	B	A	A	A	A	A	A	A	A
		80	176		X	B	C	A	A		A			A	80	176		B		A	A	A	A	A	A	B
		100	212					X	A						100	212				A	A	A				
		120	248					A							120	248					A	A				
Sodium Hydroxide (Caustic Soda) NaOH	30	20	68	A	B	A	A	A	C	A	A	Sodium Palmitate Na(C ₁₅ H ₃₁ COO)	5	20	68			A	A	A						
		40	104	A	B	A	A	A	X	A	A			40	104				A	A						
		60	140	A	C	A	B	A		A	A			60	140				A	A						
		80	176		X	A	C	A		A	A			80	176					A	A					
		100	212					X	A					100	212						A	A				
		120	248					A						120	248						A	A				
Sodium Hydroxide (Caustic Soda) NaOH	50	20	68	A	B	A	A	A	X	A	CPE	Sodium Perborate NaBO ₃ ·4H ₂ O		20	68			A	A	A	A	A	A	A	A	
		40	104	A	B	A	B	A		A				40	104				A	A	A	A	A	A		
		60	140	A	C	A	C	A		A				60	140				A	A	A	A	A	A		
		80	176		X	A	X	A		A				80	176				A	A	A	A				
		100	212					A						100	212					A	A					
		120	248					A						120	248					A	A					
Sodium Hypochlorite (Bleach) NaOCl	3	20	68	A	A	B	A*	A	A	B	A	Sodium Perchlorate NaClO ₄		20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	A	B	A*	A	A	B	A			40	104	A	A	A	A	A	A	A				
		60	140	B	B	B	A*	A	B	C	A			60	140	B	B	A	A	A	A	A				
		80	176								C			80	176		B	B	A	A	A	A				
		100	212											100	212					A	A					
		120	248											120	248						A	A				
Sodium Hypochlorite (Bleach) NaOCl	5	20	68	A	A	B	A*	A	A	B	A	Sodium Peroxide Na ₂ O ₂		20	68	A	A	A	A	A	A	A	A	A	B	
		40	104	A	A	B	A*	A	A	B	A			40	104	A	A	A	A	A	A	A				
		60	140	B	B	C	B*	A	B	C	A			60	140	B	B	A	A	A	A					
		80	176								C			80	176		B	A	A	A	A					
		100	212											100	212					A	A					
		120	248											120	248						A	A				
Sodium Hypochlorite (Bleach) NaOCl	7	20	68	A	A	B	A*	A	A	B	A	Sodium Persulfate Na ₂ S ₂ O ₈	Satu	20	68	A	A	A	A	A	A	A	A	X		
		40	104	A	A	C	A*	A	A	C	A			40	104	A		A	A	A	A	A				
		60	140	B	B	C	B*	A	B	C	B			60	140	B		A	A	A	A	A				
		80	176								C			80	176				A	A	A	A				
		100	212											100	212					A	A	A				
		120	248											120	248						A	A				
Sodium Hypochlorite (Bleach) NaOCl	10	20	68	A	A	B	A*	A	A	X	A	Sodium Phosphate (Acidic) Na ₃ PO ₄		20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	A	C	A*	A	A		B			40	104	A	A	A	A	A	A	A				
		60	140	B	B	C	B*	A	B		B			60	140	A	A	A	A	A	A	A				
		80	176								C			80	176		B		A	A	A	A				
		100	212											100	212					A	A	A				
		120	248											120	248						A	A				
Sodium Hypochlorite (Bleach) NaOCl	13	20	68	A	A	B	A*	A	A	X	A	Sodium Phosphate (Alkaline) Na ₃ PO ₄		20	68	A	A	A	A	A	A	A	A	A		
		40	104	A	A	C	A*	A	A		B			40	104	A	A	A	A	A	A	A				
		60	140	B	B		B*	A	B		C			60	140	A	A	A	A	A	A	A				
		80	176											80	176		B	A	A	A	A	A				
		100	212											100	212					A	A	A				
		120	248											120	248						A	A				
Sodium Iodide NaI		20	68			A	A	A	A	A	NITRILE	Sodium Phosphate (Neutral) Na ₃ PO ₄		20	68	A	A	A	A	A	A	A	A	A		
		40	104			A	A	A	A	A				40	104	A	A	A	A	A	A	A				
		60	140				B	A	A	A				60	140	A	A	A	A	A	A	A				
		80	176					A	A	A				80	176		B	A	A	A	A	A				
		100	212											100	212					A	A	A				
		120	248											120	248						A	A				
Sodium Metasilicate Na ₂ SiO ₃		20	68	A	A	A	A	A	A	A	Sodium Silicofluoride Na ₂ SiF ₆		20	68	A	A	A	A	A	A	A	A				
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A					
		60	140	A	A	A	A	A	A	A			60	140	B	A	A	A	A	A	A					
		80	176			A	A	A	A	A			80	176				A	A	A						
		100	212					A	A	A			100	212					A	A						
		120	248					A	A				120	248						B	A					
Sodium Nitrate NaNO ₃	Satu	20	68	A	A	A	A	A	A	A	Sodium Sulfate Na ₂ SO ₄	Satu	20	68	A	A	A	A	A	A	A	A	A			
		40	104	A	A	A	A	A	A	A			40	104	A	A	A	A	A	A	A					
		60	140	A	A	A	A	A	A	A			60	140	A	A	A	A	A	A	A					
		80	176			A	A	A	A	A			80	176		A	A	A	A	A	A	B				
		100	212					A	A	A			100	212					A	A	A					
		120	248					A	A				120	248						A	A					

* Moulded PVDF material is suitable for Sodium Hypochlorite; however, fusion welded joints may fail prematurely.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE					
		°C	°F											°C	°F													
Sodium Sulfide Na ₂ S		20	68	A	A	A	A	A	A	A	A	Sulfur S	Pure	20	68	A	A		A	A	A	A	C	X				
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A			A														
		80	176		A	A	A	A	A	A	A			A														
		100	212				A	A	B																			
Sodium Sulfite Na ₂ SO ₃		20	68	A	A	A	A	A	A	A	A	Sulfur Chloride S ₂ Cl ₂		20	68			C	A	A	A	X	X					
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		A	A	A	A	B	B																		
		100	212				A	A																				
Sodium Thiocyanate NaSCN		20	68	A	A	A	A	A	A	A	A	Sulfur Dichloride SCl ₂		20	68			C	A	A	A	X	X					
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176				A	A	A																			
		100	212				A	A																				
Soybean Oil		20	68	A	A	A	A	A	A	A	A	Sulfur Dioxide Gas SO ₂	Dry	20	68	A	A	A	A	A	A	A	A					
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		B	B	A	A	A																			
		100	212				A	A																				
Stannic Chloride (Tin (IV) Chloride) SnCl ₄		20	68	A	A	A	A	A	A	A	A	Sulfur Dioxide Gas SO ₂	Wet	20	68	A	A	A	A	A	A	A	A					
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		B	B	A	A	A																			
		100	212				A	A																				
Stannous Chloride (Tin (II) Chloride) SnCl ₂		20	68	A	A	A	A	A	A	A	A	Sulfur Trioxide SO ₃		20	68	X	X	X	X	B	X	X						
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		B	B	A	A	A																			
		100	212				A	A																				
Stearic Acid CH ₃ (CH ₂) ₁₆ COOH		20	68	A	A	A	A	A	A	B	A	Sulfuric Acid H ₂ SO ₄	10	20	68	A	A	A	A	A	A	A	A	A				
		40	104	A	A	B	A	A	A																			
		60	140	A	A	B	A	A	B	C																		
		80	176		B		A	A	A																			
		100	212				A	A																				
Styrene C ₆ H ₅ CH=CH ₂		20	68				A	A	A	X	C	Sulfuric Acid H ₂ SO ₄	30	20	68	A	A	A	A	A	A	A	A	A				
		40	104				A																					
		60	140																									
		80	176																									
		100	212																									
Succinic Acid (Amber Acid) CH ₂ =COOH CH ₂ =COOH		20	68	A	A	A	A	A	A	A	A	Sulfuric Acid H ₂ SO ₄	50	20	68	A	A	A	A	A	A	A	A	A				
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		B	B	A	A	A																			
		100	212				A	A																				
Sugar Liquors (Beet, Cane)		20	68	A	A	A	A	A	A	A	A	Sulfuric Acid H ₂ SO ₄	60	20	68	A	A	A	A	A	A	A	A	A				
		40	104	A	A	A	A	A	A	A	A																	
		60	140	A	A	A	A	A	A	A	A																	
		80	176		A	A	A	A	A																			
		100	212				A	A																				
Sulfamic Acid HOSO ₂ NH ₂	20	20	68	A	A	A	A	A				Sulfuric Acid H ₂ SO ₄	70	20	68	A	A	A	A	A	A	A	A	A				
		40	104	A	A	A	A	A																				
		60	140			A	A	A																				
		80	176				A	A																				
		100	212																									

Sulfuric Acid at 90°C: up to 50% – PP rated "A", EPDM rated "B"; 51-93% – PP rated "C".

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	
		°C	°F											°C	°F									
Sulfuric Acid H ₂ SO ₄	80	20	68	A	A	A	A	A	A	A	A	Tannic Acid (Tannin) C ₇₆ H ₅₂ O ₄₆	50	20	68	A	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A	A	A	A			40	104	A	A	A	A	A				
		60	140	B	B	B	A	A	A	B	A			60	140	A	A	A	A	A				
		80	176		C	B	A	A	B	X	B			80	176			A	A	A				
		100	212				B	A	C		C			100	212				A	A				
		120	248				X	B			X			120	248				A	A				
Sulfuric Acid H ₂ SO ₄	90	20	68	A	A	A	A	A	A	B	A	Tartaric Acid (Dioxysuccinic Acid) CH(OH)COOH CH(OH)COOH	50	20	68	A		A	A	A	A	A	A	A
		40	104	B	A	A	A	A	A	B	A			40	104	A		A	A	A	A	A	A	
		60	140	B	B	B	A	A	A	C	A			60	140	A		A	A	A	A	A	B	A
		80	176		C	B	A	A	B	X	B			80	176			B	A	A	A			B
		100	212				B	A	C		C			100	212					A	A			
		120	248				X	B	X		X			120	248					A	A			
Sulfuric Acid H ₂ SO ₄	93	20	68	A	A	A	A	A	A	B	A	Tertiary Butyl Alcohol (CH ₃) ₃ C(OH)	50	20	68	A	A	A	A	A	A	A	B	X
		40	104	B	B	A	A	A	A	B	A			40	104				A	A				
		60	140	B	B	B	A	A	B	C	A			60	140				A	A				
		80	176		C	B	A	A	B	X	B			80	176				A	A				
		100	212			C	B	A	X		C			100	212					A				
		120	248				X	B			X			120	248					A				
Sulfuric Acid H ₂ SO ₄	94	20	68	A	A	B	A	A	A	C	A	Tetrachloroethane Cl ₂ CHCHCl ₂	Pure	20	68	X		B	A	A	A	X	X	
		40	104	B	B	B	A	A	B	X	A			40	104				A	A				
		60	140	B	C	B	A	A	C		B			60	140				A	A				
		80	176			C	B	A	C		C			80	176				A	A				
		100	212				C	A						100	212					A				
		120	248				X	B						120	248					A				
Sulfuric Acid H ₂ SO ₄	95	20	68	A	A	C	A	A	A	X	A	Tetraethyl Lead Pb(C ₂ H ₅) ₄	Pure	20	68	A		A	A	A	A	X	B	
		40	104	B	B		A	A	C		B			40	104				A	A	A			
		60	140	C	C		A	A	C		C			60	140				A	A	A			
		80	176				B	A						80	176				A	A	B			
		100	212				C	A						100	212				A	A				
		120	248				X	B						120	248				A	A				
Sulfuric Acid H ₂ SO ₄	* 96	20	68	A	B	X	A	A	B	X	A	Tetrahydrofuran CH ₂ -CH ₂ CH ₂ -CH ₂ O	Pure	20	68	X	X	B	C	A	B	X	X	
		40	104	C	C		A	A	C		B			40	104				C	X	A			
		60	140	C	X		A	A	X		C			60	140				X		A			
		80	176				B	A						80	176						B			
		100	212				C	A						100	212									
		120	248				X	B						120	248									
Sulfuric Acid H ₂ SO ₄	98	20	68	B	B	X	A	A	X	X	B	Tetralin (Tetrahydro-naphthalene) C ₁₀ H ₁₂	Pure	20	68	X		X	A	A	A	X	X	
		40	104	C	C		A	A			C			40	104				A	A				
		60	140	X	X		B	A						60	140				B	A				
		80	176				C	A						80	176					B				
		100	212				X	B						100	212									
		120	248					B						120	248									
Sulfuric Acid H ₂ SO ₄	100	20	68	X	X	X	X	A	X	X	NITRILE	50	50	20	68				A	A				
		40	104					A						40	104					A	A			
		60	140											60	140					B	A			
		80	176											80	176						B	A		
		100	212											100	212						C	A		
		120	248											120	248							A		
Sulfurous Acid H ₂ SO ₃	50	20	68	A	A	A	A	A	A	A	C	Titanic Sulfate Ti(SO ₄) ₂	50	20	68	A	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	B			40	104	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A	B	C			60	140	A	A	A	A	A				
		80	176		B	A	A	A	B	C				80	176		A	A	A	A				
		100	212				A	A	C					100	212				A	A				
		120	248					A						120	248				A	A				
Sulfuryl Chloride SO ₂ Cl ₂	Pure	20	68	X	X		B	A	A	X	X	Titanium Dioxide TiO ₂	50	20	68	A	A	A	A	A	A	A	A	
		40	104				C	A						40	104	A	A	A	A	A	A	A		
		60	140					A						60	140	A	A	A	A	A	A			
		80	176											80	176			A	A	A	A			
		100	212											100	212					A	A	A		
		120	248											120	248					A	A			
Tall Oil	50	20	68	A			A	A	A	B	A	Titanous Sulfate Ti ₂ (SO ₄) ₃	50	20	68	A	A	A	A	A	A	A	A	
		40	104	A			A	A	A		A			40	104	A	A	A	A	A	A	A		
		60	140	B			A	A	A		A			60	140	A	A	A	A	A				
		80	176				A	A						80	176		A	A	A	A				
		100	212				A	A						100	212				A	A				
		120	248				A	A						120	248				A	A				

Sulfuric Acid at 90°C: up to 50% – PP rated "A", EPDM rated "B"; 51-93% – PP rated "C".

*66 Baumé Sulphuric Acid = 96% concentration.

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE				
		°C	°F											°C	°F												
Titanium Tetrachloride TiCl ₄		20	68	X		A		A	A	C	B	Uranium Oxide UO ₂		20	68			A	A	A	A	A	A	A			
		40	104					A	A						40	104				A	A	A	A	A	A		
		60	140					A	A						60	140					A	A					
		80	176												80	176						A	A				
		100	212												100	212							A				
		120	248												120	248								A			
Toluene (Toluol) C ₆ H ₅ CH ₃		20	68	X	X	A	A	A	A	X	X	Urea CO(NH ₂) ₂ (Urine)	50	20	68	A	A	A	A	A	A	A	A	A			
		40	104			C	A	A							40	104	A	A	A	A	A	A	A	A	A		
		60	140			X	B	A							60	140	A	A	A	A	A	A	A	A	A		
		80	176				B	A							80	176		A	A	A	A						
		100	212				C	B							100	212					A	A					
		120	248					C							120	248						A	A				
Triacetin C ₃ H ₅ O ₃ (COCH ₃) ₃	Pure	20	68					A	B	A	B	Varsol		20	68					A	A	A	A	X	A		
		40	104					A							40	104											
		60	140					A							60	140											
		80	176					A							80	176											
		100	212					A							100	212											
		120	248					A							120	248											
Tributyl Phosphate (C ₄ H ₉ O) ₃ PO		20	68	X		A	A	A	X	B	X	Vaseline (Petrolatum)		20	68	A		A	A	A	A	A	X	A			
		40	104			B	A	A							40	104	A		A	A	A						
		60	140			C	C	A							60	140	A		A	A	A						
		80	176				X	A							80	176			C	A	A						
		100	212												100	212					A	A					
		120	248												120	248						A	A				
Trichloro-acetic Acid Cl ₃ C-COOH		20	68	C		A	A	A	X	X	X	Vinegar		20	68	A	A	A	A	A	A	A	A	C			
		40	104			A	B	A							40	104	A	A	A	A	A	A	A	A			
		60	140			B	C	A							60	140	A	A	A	A	A	A	A	A			
		80	176				X								80	176		B	A	A	A						
		100	212												100	212				B	A						
		120	248												120	248				B	A						
Trichloro-ethylene ClHC=CCl ₂		20	68	X	X	B	A	A	A	X	X	Vinyl Acetate CH ₃ COOCH=CH ₂		20	68	X	X		A	A	X	B	X				
		40	104			C	A	A	A						40	104				A	A		X				
		60	140			X	A	A	A						60	140				A	A						
		80	176				A	A	A						80	176				A	A						
		100	212				A	A							100	212				A	A						
		120	248					A							120	248				A	A						
Tricresyl Phosphate (CH ₃ C ₆ H ₄ O) ₃ PO	Pure	20	68	X	X	C	A	A	A	A	X	Water - Deionized, Distilled or Potable		20	68	A	A	A	A	A	A	A	A				
		40	104					A							40	104	A	A	A	A	A	A	A	A			
		60	140					A							60	140	A	A	A	A	A	A	A	A			
		80	176												80	176		A	A	A	A	A	A	A			
		100	212												100	212				A	A						
		120	248												120	248				A	A						
Triethanolamine (HOCH ₂ CH ₂) ₃ N		20	68			A	A	A	B	A	A	Water - Sea		20	68	A	A	A	A	A	A	A	A				
		40	104					A							40	104	A	A	A	A	A	A	A	B			
		60	140												60	140	A	A	A	A	A	A	A	B			
		80	176						A						80	176		A	A	A	A	A	A				
		100	212												100	212				A	A						
		120	248												120	248				A	A						
Triethylamine (C ₂ H ₅) ₃ N		20	68				B	A	A		X	Water - Waste (Domestic Sewage)		20	68	A	A	A	A	A	A	A	A				
		40	104				B	A							40	104	A	A	A	A	A	A	A	A			
		60	140				X	A							60	140	A	A	A	A	A	A	A	A			
		80	176					A							80	176		A	A	A	A						
		100	212												100	212				A	A						
		120	248												120	248				A	A						
Trimethylpropane C ₆ H ₁₄		20	68	A	A	A	A	A	A		A	Wine (Red and White)		20	68	A	A	A	A	A	A	A	A				
		40	104	A	A	A	A	A	A		A				40	104	A	A	A	A	A	A	A	A			
		60	140	A	A	A	A	A	A		A				60	140	B	B	A	A	A	A	A				
		80	176			A	A	A	A		A				80	176				A	A		A				
		100	212					A	A						100	212				A	A						
		120	248						A						120	248				A	A						
Turpentine		20	68	A	A	B	A	A	A	B	B	Xylene C ₆ H ₄ (CH ₃) ₂		20	68	X	X	X	A	A	B	X	C				
		40	104	A		C	A	A	A						40	104				A	A						
		60	140	A		X	A	A	A						60	140				A	A						
		80	176				A	A	A						80	176				A	A						
		100	212					A	A						100	212				A	A						
		120	248						A						120	248				A	A						

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE									
		°C	°F											°C	°F																	
Zinc Acetate (CH ₃ COO) ₂ Zn·2H ₂ O		20	68	A	A	A	A	A	A	A	A	Hydrochloric Acid	25	20	68	A	A	A	A	A	A	A	A	A								
		40	104	A	A	A	A	A	A	A	A			Ferric Chloride	(1:1)	40	104	A	A	A	A	A	A	A	A							
		60	140	A	A	A	A	A	A	A	A					28		60	140	A	A	A	A	A	A	A	A					
		80	176															80	176									B	B			
		100	212													100	212															
		120	248										120	248																		
Zinc Bromide ZnBr ₂	Satu	20	68	A	A	A	A	A	A	A	A	Hydrochloric Acid	20	20	68									A	A	A	A					
		40	104	A	A	A	A	A	A	A	A			Ferrous Chloride	(1:1)	40	104									A	A	A	A			
		60	140	A	A	A	A	A	A	A	A					28		60	140									A	A	A	A	
		80	176															80	176									A	A	B	B	
		100	212													100	212										A	A	C			
		120	248									120	248									A	A									
Zinc Chloride ZnCl ₂		20	68	A	A	A	A	A	A	A	A	Hydrochloric Acid	25	20	68									A	A			A				
		40	104	A	A	A	A	A	A	A	A			Ferrous Chloride	(1:1)	40	104									A	A			A		
		60	140	A	A	A	A	A	A	A	A					28		60	140									A	A			A
		80	176															80	176									A	A	B		
		100	212													100	212										A	A				
		120	248									120	248									A	A									
Zinc Cyanide Zn(CN) ₂		20	68	A			A	A	A	A	A	Hydrochloric Acid	10	20	68	A	A							A	A							
		40	104											Hydrofluoric Acid	(1:1)	40	104	B	B							A	A					
		60	140													15		60	140	B	B							A	A			
		80	176															80	176	X	X							A	A			
		100	212													100	212										A	A				
		120	248									120	248									A	A									
Zinc Nitrate Zn(NO ₃) ₂ ·6H ₂ O		20	68	A	A	A	A	A	A	A	A	Hydrochloric Acid	18	20	68	A	A							A	A							
		40	104	A	A	A	A	A	A	A	A			Hydrofluoric Acid	(1:1)	40	104	B	B							A	A					
		60	140	A	A	A	A	A	A	A	A					20		60	140	B	B							A	A			
		80	176			A	A	A	A	A	A							80	176			B						A	A			
		100	212													100	212										A	A				
		120	248									120	248									B	A									
Zinc Sulfate ZnSO ₄		20	68	A	A	A	A	A	A	A	A	Hydrochloric Acid	20	20	68	A	A	B	A	A	A	A	A	B	B							
		40	104	A	A	A	A	A	A	A	A			Nitric Acid	50	40	104	A	A	C	A	A	A	A	B	B						
		60	140	A	A	A	A	A	A	A	A					5g		60	140	B	B	X	A	A								
		80	176			A	A	A	A	A	A							80	176			C						A	A			
		100	212													100	212										A	A				
		120	248									120	248									B	A									
Mixed Chemicals												Hydrochloric Acid	36 %	20	68	B	B	B	A	A	B	B										
														40	104	B	B	B	A	A	B	B										
Hydrochloric Acid	36%	60	140				B	A	B	C																						
		80	176					A	A	B																						
Allyl Chloride	12 PPM	100	212					B	A	C																						
		120	248						B	A																						
Hydrochloric Acid	36%	20	68	B	B	B	A	A	B	B																						
		40	104	B	B	B	A	A	B	B																						
Benzene	54 PPM	60	140	B	B	B	A	A	B	C																						
		80	176			B	B	A	A	B																						
Hydrochloric Acid	18%	100	212					B	A	C																						
		120	248						B	A																						
Hydrochloric Acid	36%	20	68	B	C	B	A	A	B	C																						
		40	104	B		B	A	A	C																							
Chloro-benzene	490 PPM	60	140																													
		80	176																													
Hydrochloric Acid	36%	100	212																													
		120	248																													
Hydrochloric Acid	18%	20	68	A	A	A	A	A	B	B																						
		40	104	B	B	B	A	A	B	C																						
Sulfuric Acid	98	60	140	B	B	B	A	A	B																							
		80	176			B	B	A	A	C																						
Sulfuric Acid	13g	100	212																													
		120	248																													
Hydrochloric Acid	36%	20	68	A	A	A	A	A	B	B																						
		40	104	B	B	B	A	A	B	C																						
Chromic Acid	250	60	140																													
		80	176																													
Ammonium Fluoride	8 g/l	100	212																													
		120	248																													

Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE	Chemical	Concentration (%)	Temp.		PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
		°C	°F											°C	°F								
Chromic Acid	220	20	68	A	A	X	A	A	X	X		Sulfuric Acid	4	20	68	B	B	X	A	A	X	X	
		40	104	B	B		A	A															
Chromium Sulfate	1	60	140	B	B		A	A				Chromic Acid	400 g/l	60	140		B		A	A			
		80	176		B		A	A															
Sodium Silicofluoride	12 g/l	100	212				A	A				Sulfuric Acid	15	100	212				A	A			
		120	248				A	A															
Chromic Acid	350	20	68	A	A	X	A	A	X	X		Sulfuric Acid	15	20	68	A	A	X	A	A	A	B	
		40	104	B	B		A	A															
Sodium Silicofluoride	17	60	140	C	C		A	A				Chromic Acid	5	60	140	B	B		A	A	A	B	C
		80	176				A	A															
Oxalix Acid	1 g/l	100	212				A	B				Phosphoric Acid	80 parts	100	212				A	A	X		
		120	248				A	B															
Nitric Acid	15	20	68	A	A	A	A	A				Sulfuric Acid	2	20	68	A	A	X	A	A	A	X	
		40	104	A	A	A	A	A															
Hydrofluoric Acid	(1:1)	60	140	B	B	B	A	A				Chromic Acid	10	60	140	B	B		A	A	C		
		80	176	X	X		A	A															
Hydrofluoric Acid	3	100	212				A	A				Water	80 parts	100	212				A	A			
		120	248				A	A															
Nitric Acid	15	20	68	A	A	A	A	A	A	A		Sulfuric Acid	0.7	20	68	A	A	X	A	A	X	X	
		40	104	A	A	A	A	A	A	B													
Hydrofluoric Acid	(1:1)	60	140	B	C	X	A	A	B			Chromic Acid	250	60	140	B	B		A	A			
		80	176	X	X		A	A	B														
Hydrofluoric Acid	5	100	212				A	A	C			Sodium Silicofluoride	1 g/l	100	212				A	A			
		120	248				B	A	X														
Nitric Acid	15	20	68	A	B	B	A	A				Sulfuric Acid	20	20	68	A	A	X	A	A	A	A	
		40	104	B	C	B	A	A															
Hydrofluoric Acid	10	60	140	B	C		A	A				Hydrofluoric Acid	(1:1)	60	140	B	B		A	A	C	C	
		80	176	X	X		A	A															
Hydrofluoric Acid	(1:1)	100	212				B	A				Hydrofluoric Acid	10	100	212				A	A			
		120	248				B	A															
Nitric Acid	5	20	68	A	A	A	A	A				Sulfuric Acid	25	20	68	A	A	X	A	A			
		40	104	B	B	B	A	A															
Hydrofluoric Acid	(1:1)	60	140	B	B	B	A	A				Hydrofluoric Acid	(1:1)	60	140	B	B		A	A			
		80	176	X	B	C	A	A															
Hydrofluoric Acid	20	100	212				B	A				Hydrofluoric Acid	15	100	212				B	A			
		120	248				B	A															
Nitric Acid	100	20	68				B	A				Sulfuric Acid	75	20	68	A	A	B	A	A			
		40	104				C	C															
Hydrofluoric Acid	55	60	140									Nitric Acid	5	60	140	B	B	C	A	A			
		80	176																				
Phosphoric Acid	100	100	212									Chlorine Gas	Trace	100	212				A				
		120	248																				
Nitric Acid	50 100g	20	68	B	B	B	A	A				Sulfuric Acid	75	20	68	A	A	A	A	A	A	A	
		40	104	X	X	X	A	A															
Sulfuric Acid	50 100g	60	140				A	A				Sulfurous Acid	4	60	140	A	A	B	A	A	C	B	
		80	176				A	A															
Sulfuric Acid	2	100	212				A	A				Sulfuric Acid	150	100	212				A	A			
		120	248				A	A															
Chromic Acid	(1:1)	20	68	A	A	X	A	A	A	B		Spelter	80	20	68	A	A	A	A	A	A	A	
		40	104	A	A		A	A	B														
Chromic Acid	1	60	140	B	B		A	A	C			Manganese Sulfate	2 g/l	60	140	A	A	A	A	A	A	A	
		80	176		B		A	A	X														
Sulfuric Acid	10	100	212		C		A	A				Sodium Sulfate	225	100	212				A	A			
		120	248				A	A															
Chromic Acid	(1:1)	20	68	A	B	X	A	A	A	B		Sulfuric Acid	225	20	68	A	A	A	A	A	A	A	B
		40	104	B	B		A	A	C														
Chromic Acid	10	60	140	C	X		A	A	C			Formaldehyde	50 g/l	60	140		A	A	A	A	A	A	
		80	176				A	A															
Sulfuric Acid	(1:1)	100	212				A	A				Sulfuric Acid	98	100	212				B	B	A		
		120	248				A	A															
Sulfuric Acid	10	20	68	A	B	X	A	A	B	C		Sulfuric Acid	(1:1)	20	68				A	A			
		40	104	B	B		A	A	C														
Chromic Acid	25	60	140	C	X		A	A	X			Phosphoric Acid	80	60	140				C	B			
		80	176				A	A															
Chromic Acid	25	100	212				A	A				Phosphoric Acid	80	100	212								
		120	248				B	A															





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