CHEMICAL RESISTANCE GUIDE

PURE CHEMICALS
MIXED CHEMICALS

PVC.CPVC.PP.PVDF.PTFE.PFA
EPDM.FPM/FKM/FKM-F(Viton®).Nitrile

CHEMLINE PLASTICS
SUPERIOR FLOW SOLUTIONS

CRG.11.03.2023

CHEMICAL RESISTANCE GUIDE

Materials of Construction

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 flexibile 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 alkalais, salts and many other chemicals. High chemical resistance of this material allows its application on aggressive services such as 98% H2 SO4, 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. It's 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 alkali's 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 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. It's 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).

Materials of Construction

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, important for chlor-alkalai process applications like wet chlorine gas and HCl. PVDF's impact strength is over twice that of PVC. It withstands mechanical abuse at sub-freezing temperatures. Chemline's butterfly valves with optional PVDF discs offer extended life on abrasive applications.

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 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 (Polyetheylene)
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.

Materials of Construction

COMPOSITES

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.

FRP (Fiberglass Reinforced Plastic)
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 handing applications. Fire retardants are always incorporated for the Chemline damper butterflies.

PPG (Glass-filled Polypropylene)
PPG is an injection mouldable composite comprising short glass fibers in a matrix of polypropylene (PP). PPG is an engineering plastic, with better mechanical and/or thermal properties than standard plastics like PVC or polyethylene. PPG body valves are rated for service temperatures up to 266°F (130 C).Polypropylene features resistance to a wide range of chemicals, is lightweight, tough, and has high impact strength over a large temperature range. Glass fiber-reinforcement improves those properties, increasing strength, rigidity, dimensional stability, resistance to warpage, and maximum service temperatures.

PPSG (Glass-filled Polyphenylene Sulfide)
Polyphenylene Sulfide (PPS) is an important high temperature thermoplastic polymer. It is considered a high performance plastic because its properties are at a level higher than engineering and standard plastics. It has the broadest resistance to chemicals of any high performance plastic. PPS products have no known solvents below 392°F (200 C) and are inert to steam, strong bases, fuels and acids. Glass fiber reinforced PPS (PPSG) has heat distortion temperature amongst the highest of the thermoplastics and high stiffness at room temperatures. PPSG body valves are recommended for service temperatures up to 320°F (160 C). Impact strength and abrasion resistance is high.

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 microporsity 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 fluoroplymers such as PFA and TFM were developed to overcome PTFE's weak properties.

PFA (Perfluoralkoxy)
Perfluoralkoxy (PFA) is a fully fluorinated polymer with unlimited chemical resistance and high temperature performance similat to PTFE. The big difference is that it is melt process able. PFA can be extruded to make pipe or tubing, injection molded for tube fittings and valve linings and seats. It has much lower porosity than PTFE and is translucent instead of opaque white. Mechanically it is stronger, meaning longer cycle life. 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 to150°C (300°F). Chemline recommends PFA as the best choice of fluoropolymer tubing. Compared to its fluoropolymer cousin FEP (fluorinated ethylene propylene), it has higher heat resistance and can withstand repeated bending without failure. 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. Convoluted 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. HD Series HYBRID diaphragm valves have TFM diaphragms designed for long cycle life in severe chemical service.

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.

Materials of Construction

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 (HPF). 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-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 renown 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. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Acetaldehyde CH_3CHO	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			
		120	248					A			
Acetaldehyde (Aqueous) CH_3CHO	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			
		120	248					A			
Acetamide CH_3CONH_2	Satu	20	68			A		A	A	A	A
		40	104					A	A	A	A
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Acetic Acid CH_3COOH	10	20	68	A	A	A	A	A	B	A	B
		40	104	A	A	A	A	A	B	A	
		60	140	A	A	A	A	A	C	B	
		80	176		A	A	A	A	X		
		100	212				A	A			
		120	248				B	A			
Acetic Acid CH_3COOH	20	20	68	A	A	A	A	A	B	A	X
		40	104	A	A	A	A	A	C	A	
		60	140	A	B	A	A	A	C	B	
		80	176		C	B	B	A	X		
		100	212				B	A			
		120	248				B	A			
Acetic Acid CH_3COOH	50	20	68	A	A	A	A	A	C	B	X
		40	104	A	B	A	A	A	X		
		60	140	B	C	A	A	A			
		80	176		X		B	A			
		100	212				B	A			
		120	248					A			
Acetic Acid (Glacial) CH_3COOH	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			
		120	248					A			
Acetic Acid (Glacial) CH_3COOH	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			
		120	248					A			
Acetic Anhydride $(CH_3CO)_2O$	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			
		120	248					A			
Acetone CH_3COCH_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			
		120	248					A			
Acetone (Aqueous) CH_3COCH_3	10 ppm	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	B	A	C
		60	140	B	B	A	A	A		A	
		80	176			A	B	A		B	
		100	212				B	A			
		120	248				B	A			
Acetonitrile CH_3CN		20	68			B	A	A		A	C
		40	104				A	A			
		60	140				C	A			
		80	176				X				
		100	212								
		120	248								
Acetophenone $C_6H_5COCH_3$		20	68			A	C	A	C	A	X
		40	104			B	C	A	X	A	
		60	140			C	X	A		A	
		80	176			X		A		B	
		100	212					A			
		120	248					A			
Acetyl Acetone $CH_3COCH_2COCH_3$		20	68	X	X		X	A			
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Acetyl Bromide CH_3COBr		20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				B	A			
		100	212					A			
		120	248					A			
Acetyl Chloride CH_3COCl		20	68			A	A	A	X	X	X
		40	104			A	B	A			
		60	140			C	C	A			
		80	176			X	X	A			
		100	212					A			
		120	248								
Acetylene C_2H_2		20	68	A	X	A	A	A	A	C	A
		40	104			A	A	A	A	C	A
		60	140			A	A	A	A	X	B
		80	176			B	A	A	A		
		100	212					A	B		
		120	248					B			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Acrylonitrile $CH_2=CHCN$		20	68	X	X	B	A	A	X	A	X
		40	104			C	B	A		A	
		60	140				C	A		B	
		80	176				X	A			
		100	212					A			
		120	248					A			
Adipic Acid $H00C(CH_2)_4$ $–COOH$	Satu	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	B	
		100	212				A	A	B		
		120	248				A	A			
Allyl Alcohol $CH_2=CHCH_2OH$		20	68	A		A	A	A	A		A
		40	104			A	A	A	A		B
		60	140			B	A	A	A		B
		80	176				A	A	B		
		100	212					A			
		120	248					B			
Allyl Chloride $CH_2=CHCH_2Cl$		20	68	X			A	A	B	X	B
		40	104				C	A	B		C
		60	140				X	A	C		X
		80	176					A			
		100	212					A			
		120	248					A			
Alum (Potassium alum) $K_2SO_4Al_2(SO_4)_3$	Satu	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	A	A	A	B	B
		100	212				A	A	A		
		120	248				A	A			
Aluminum Acetate $Al(CH_3CO_2)_3$	Satu	20	68	A	A	A	A	A	A	A	
		40	104	B	B	A	A	A	B	A	
		60	140				A	A		A	
		80	176				A	A		A	
		100	212				A	A			
		120	248					A			
Aluminum Ammonium Sulfate (Ammonium Alum) $(NH_4)Al(SO_4)_2$	Satu	20	68			A	A	A	A	A	A
		40	104			A	A	A	A	A	A
		60	140			A	A	A	A	A	A
		80	176			A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Aluminum Bromide $Al\ Br_3$	Satu	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	A	A	A		
		100	212				A	A			
		120	248				A	A			
Aluminum Chloride $Al\ Cl_3$	Satu	20	68	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	
		80	176		B	A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Aluminum Fluoride $Al\ F_3$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Aluminum Hydroxide $Al(OH)_3$	Satu	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	A	A	A	B	B
		100	212				A	A	B		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Aluminum Nitrate $Al\ (NO_3)_3$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Aluminum Sulfate $Al_2\ (SO_4)_3$	Satu	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	A	A	A		
		100	212				A	A			
		120	248				A	A			
Aminoacetic Acid NH_2CH_2COOH	10	20	68	A		A	A	A	B	A	A
		40	104	A		A	A	A		A	
		60	140					A			
		80	176					A			
		100	212					A			
		120	248					A			
Ammonia Gas NH_3	100	20	68	A	C	A	A	A	X	A	A
		40	104	A	C	A	A	A		A	A
		60	140	A	X	B	A	A		A	B
		80	176		X	B	A	A		B	
		100	212				B	A			
		120	248				B	A			
Ammonium Acetate $NH_4CH_3CO_2$	Satu	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	B	B	B
		100	212				A	A	B		
		120	248				B	A			
Ammonium Bicarbonate NH_4HCO_3		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	A			
		100	212				A	A			
		120	248					A			
Ammonium Carbonate $(NH_4)_2CO_3$	Satu	**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	A	A	A	A	
		100	**212**				A	A	A		
		120	**248**				A	A			
Ammonium Chloride NH_4Cl	Satu	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	A	B
		100	212				A	A	A		
		120	248				A	A			
Ammonium Fluoride NH_4F	20	20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A	A	A
		60	140			A	A	A	A	A	
		80	176			B	A	A			
		100	212				A	A			
		120	248				A	A			
Ammonium Hydrogen-fluoride $(NH_4)HF_2$	Satu	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	A	A	B	B	B
		100	212				A	A	B		
		120	248				A	A			
Ammonium Hydroxide (Ammonium Solution) NH_4OH	10	20	68	A	C	A	A	A	B	A	A
		40	104	A	C	A	A	A	C	A	B
		60	140	A	X	A	A	A	X	A	B
		80	176		X	B	A	A		A	
		100	212				A	A			
		120	248				B	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Ammonium Hydroxide (Ammonium Solution) NH_4OH	40	20	68	A	X	A	A	A	B	A	B
		40	104	A	X	A	A	A	C	A	X
		60	140	B	X	A	A	A	X	A	
		80	176		X	B	B	A			
		100	212				B	A			
		120	248				B	A			
Ammonium Metaphosphate NH_4PO_3		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	B
		80	176		A	A	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Ammonium Nitrate NH_4NO_3		20	68	A	B	A	A	A	A	A	A
		40	104	A	B	A	A	A	A	A	A
		60	140	B	B	A	A	A	A	A	A
		80	176			A	A	A	A	A	A
		100	212				A	A			
		120	248				A	A			
Ammonium Perchlorate NH_4ClO_4	* 10	20	68								
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Ammonium Persulfate $(NH_4)_2S_2O_8$		20	68	A		A	A	A	A	A	
		40	104	A		A	A	A	A	A	
		60	140			B	A	A	A		
		80	176					A			
		100	212					A			
		120	248					A			
Ammonium Phosphate $(NH_4)_3PO_4$		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	B
		80	176		A	A	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Ammonium Sulfate $(NH_4)_2SO_4$	Satu	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	A	A	A	A	A
		100	212				A	A			
		120	248				A	A			
Ammonium Sulfide $(NH_4)_2S$	Satu	20	68	A	A	A	A	A	X	A	X
		40	104	A		A	A	A		A	
		60	140	B		A	A	A		A	
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Ammonium Sulfite $(NH_4)_2SO_3$		20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A	A	B
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248								
Amyl Acetate $CH_3COOC_5H_{11}$	Pure	20	68	X	X	X	A	A	X	B	X
		40	104				A	A		C	
		60	140				B	A			
		80	176				B	A			
		100	212				C	A			
		120	248								
Amyl Alcohol $CH_3(CH_2)_3CH_2OH$	Pure	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	B	A	A
		80	176		B	B	A	A	B	A	
		100	212				A	A			
		120	248				A	A			

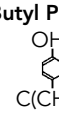
Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Amyl Borate $(C_5H_{11})_3BO_3$	Pure	20	68	X	X	X	A	A	A	B	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Amyl Chloride $CH_3(CH_2)_3CH_2Cl$	Pure	20	68	X	X	X	A	A	B	X	B
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Aniline $C_6H_5NH_2$	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			
Aniline Hydrochloride $C_6H_5NH_2$-HCl	Pure	20	68	B			A	A	A		
		40	104	B			A	A	A		
		60	140	C			B	A	A		
		80	176				X	A			
		100	212								
		120	248								
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	A	A			
		100	212				A	A			
		120	248				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			
Antimony Trioxide Sb_2O_3		20	68			A	A	A	A	A	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248								
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			
Arsenic Acid H_3AsO_4	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	B	B	A	A	A	A	A	A
		60	140	C	B	B	A	A	A	B	B
		80	176		C	C	A	A	B	B	B
		100	212				A	A	B		
		120	248				A	A			
Asphalt		20	68	X	X	A	A	A	A	X	B
		40	104			A	A	A	A		B
		60	140			A	A	A	A		
		80	176				A	A	A		
		100	212				A	A			
		120	248				A	A			
Barium Carbonate $BaCO_3$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A	A		

*30% **Ammonia** solution at 50°C, PVC & EPDM recommended.

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Barium Chloride $BaCl_2$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A	A		
Barium Hydroxide $Ba(OH)_2$	Satu	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	A	B	A	A	A	B
		100	212					A	A		
		120	248					A	A		
Barium Nitrate $Ba(NO_3)_2$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A		A		
Barium Sulfate $BaSO_4$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A	A		
Barium Sulfide BaS	Satu	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A		
		100	212				A	A	A		
		120	248				A	A	A		
Beer		20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	B
		80	176		A	A	A	A	A	A	B
		100	212				A	A			
		120	248				A	A			
Benzaldehyde C_6H_5CHO	Satu	20	68	X		A	A	A	C	C	X
		40	104				A	A			
		60	140				B	A			
		80	176					A			
		100	212					A			
		120	248								
Benzene C_6H_6	Pure	20	68	C	C	B	A	A	A	X	X
		40	104	X	X	C	B	A	B		
		60	140				B	A	B		
		80	176				C	A	B		
		100	212				X	A			
		120	248					A			
Benzene Sulfonic Acid $C_6H_5SO_3H$	10	20	68	A			A	A	A	A	X
		40	104				B	A	A		
		60	140				C	A	A		
		80	176				X	A			
		100	212					A			
		120	248					B			
Benzine	Pure	20	68			A	A	A	A	X	A
		40	104			B	A	A	A		A
		60	140			C	B	A	A		B
		80	176					A	B		
		100	212					A			
		120	248								
Benzoic Acid C_6H_5COOH	Pure	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	B	B
		60	140	B	B		A	A	A	B	B
		80	176		C		A	A	A		
		100	212				A	A	B		
		120	248				B				

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Benzoyl Chloride C_6H_5COCl		20	68	X	X	A	A	A	X	X	X
		40	104				A	A			
		60	140				B	A			
		80	176					A			
		100	212								
		120	248								
Benzyl Alcohol $C_6H_5CH_2OH$	Pure	20	68			A	A	A	A	A	X
		40	104			A	A	A	A	B	
		60	140			A	A	A	A	C	
		80	176				A	A	B		
		100	212				A	A	B		
		120	248				A	A			
Benzyl Benzoate $C_6H_5COOCH_2$ $-C_6H_5$	Satu	20	68				A	A		B	X
		40	104				B	A			
		60	140				B	A			
		80	176								
		100	212								
		120	248								
Benzyl Chloride $C_6H_5CH_2Cl$	Pure	20	68			A	A	A	C	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212								
		120	248								
Black Liquor	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	A	A	A	A	A	A	A
		80	176		B	B	A	A	A	A	B
		100	212				A	A	A		
		120	248				B				
Bleaching Agent $Ca(ClO)_2CaCl_2$ $-2H_2O$	5	20	68	A	A		A	A	A	A	C
		40	104	A	A		A	A	A	A	
		60	140	A	A		A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Bleaching Agent $Ca(ClO)_2CaCl_2$ $-2H_2O$	12	20	68	A	A		A	A	A	B	C
		40	104	A	A		A	A			
		60	140	A	A		A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Borax (Sodium Borate) $Na_2B_4O_7{\cdot}10H_2O$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	C
		80	176		A	A	A	A	A		X
		100	212				A	A			
		120	248				A	A			
Boric Acid H_3BO_3	Satu	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	A	A	A	A	B	B
		100	212				A	A	B		
		120	248				A	A			
Boron Trichloride BCl_3		20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A	A	A
		60	140	A		A	A	A	A	A	
		80	176			A	A	A	A		
		100	212				A	A			
		120	248					A			
Bromic Acid $HBrO_3$	Pure	20	68	A	A	X	A	A			
		40	104	A	A		A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				B	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Bromine Vapor	25	20	68	B		X	A	A	A	X	X
		40	104	C			A	A	A		
		60	140				A	A	A		
		80	176				A	A			
		100	212				B	A			
		120	248				B	A			
Bromine Solution (Aqueous)	Satu	20	68	A	C	C	A	A	A	X	X
		40	104	B		X	A	A	A		
		60	140				A	A			
		80	176				A	A			
		100	212				B	A			
		120	248				B	A			
Butadiene $CH_2=CHCH=CH_2$	Gas	20	68	A	A		A	A	A	X	B
		40	104	A	A		A	A	A		C
		60	140	A			A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Butane $CH_3(CH_2)_2CH_3$	Gas	20	68	A	A	A	A	A	A	X	A
		40	104	A	A	A	A	A	A		B
		60	140		A	A	A	A	A		
		80	176		A	A	A	A	A		
		100	212					A			
		120	248					A			
Butyl Acetate $CH_3COOC_4H_9$	Pure	20	68	C	C	C	A	A	X	B	X
		40	104	X	X	X	B	A		C	
		60	140				X	A		X	
		80	176								
		100	212								
		120	248								
Butyl Acrylate $CH_2=CHCOOC_4H_9$	Pure	20	68	X	X	X	A	A	X	A	X
		40	104				B	A		A	
		60	140				C	A			
		80	176				X				
		100	212								
		120	248								
Butyl Alcohol C_4H_9OH	Pure	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	B	A	B
		60	140	B	A	A	A	A	C	A	B
		80	176		B	A	A	A		A	B
		100	212				A	A			
		120	248				A	A			
Butyl Amine $C_4H_9NH_2$	Satu	20	68	X	X	X	B	A	A	X	A
		40	104				X	A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Butyl Bromide C_4H_9Br	Pure	20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Butyl Carbitol $O\langle CH_2CH_2OC_4H_9 / CH_2CH_2OH$		20	68				A	A		A	A
		40	104				B	A			
		60	140				C	A			
		80	176								
		100	212								
		120	248								
Butyl Cellosolve $C_4H_9O(CH_2)_2OH$	Pure	20	68				A	A	X		X
		40	104				A	A			
		60	140				B	A			
		80	176				C	A			
		100	212				X				
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Butyl Chloride $CH_3(CH_2)_3Cl$		20	68	X	X	X	A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Butyn Diol $C_4H_6O_2$		20	68	A		A	A	A	A	A	A
		40	104	B		A	A	A	A	A	A
		60	140			A	A	A	A	A	A
		80	176				A	A			
		100	212					A			
		120	248					A			
Butyl Ether $C_4H_9OC_4H_9$		20	68	X	X	C	A	A	X	X	B
		40	104				A	A			
		60	140				C	A			
		80	176				X				
		100	212								
		120	248								
Butyl Mercaptan $CH_3(CH_2)_3SH$	Pure	20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212								
		120	248								
Butyl Phenol 		20	68	C	C	A	A	A	C	X	X
		40	104			B	A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Butyl Phthalate $C_6H_4(COOC_4H_9)COOH$		20	68			A	A	A	B	B	X
		40	104			A	B	A	B		
		60	140			A	C		X		
		80	176				X				
		100	212								
		120	248								
Butyl Stearate $C_{17}H_{35}COOC_4H_9$	Pure	20	68				A	A	A	C	A
		40	104				A	A	A		B
		60	140				A	A	A		C
		80	176				A	A			
		100	212					A			
		120	248					A			
Butylene $CH_3CH_2CH=CH_2$		20	68				A	A	A		
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A	B		
		100	212				A	A			
		120	248				A	A			
Butyric Acid $CH_3CH_2CH_2COOH$	Pure	20	68	B	B	A	A	A	B	B	X
		40	104			A	A	A	C		
		60	140			A	A	A	X		
		80	176			A	A	A			
		100	212				A	A			
		120	248				B	A			
Caffeine Citrate		20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Calcium Acetate $Ca(CH_3COO)_2$	Satu	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	A	
		100	212				A	A			
		120	248				B	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Calcium Bisulfite (Calcium hydrogen sulfite) $Ca_2(HCO_3)_2$		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		
		80	176			A	A	A	A		
		100	212				A	A			
		120	248								
Calcium Bromide $CaBr_2$		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	A			
		120	248								
Calcium Carbonate $CaCO_3$	Satu	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	B
		80	176		A	A	A	A	A		
		100	212				A	A	A		
		120	248				A	A	A		
Calcium Chlorate $Ca(ClO_3)_2$	Satu	20	68	A	A	A	A	A	A	A	C
		40	104	AA	A	A	A	A	A		
		60	140	A	A	A	A	A	A	A	
		80	176		A	A	A	A			
		100	212				A	A			
		120	248				A	A			
Calcium Chloride $CaCl_2$	Satu	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	B
		80	176		A	A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Calcium Hydroxide $Ca(OH)_2$	Satu	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	A	A	A	A	A	C
		100	212			B	A	A	A		
		120	248				A	A			
Calcium Hypochlorite $Ca(ClO)_2$	Satu	20	68	A	A	A	A	A	A	B	C
		40	104	A	A	A	A	A	A	B	
		60	140	B	B	B	A	A	A	C	
		80	176		C	C	A	A	B	C	
		100	212				B	A	C		
		120	248								
Calcium Nitrate $Ca(NO_3)_2$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Calcium Sulfate $CaSO_4$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Calcium Sulfide CaS	Satu	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	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Caprylic Acid $CH_3(CH_2)_6COOH$	Pure	20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Carbitol $C_2H_5(OCH_2{\cdot}CH_2)_2OH$		20	68	A			A	A	A	A	A
		40	104	B			B	A	B		C
		60	140				C	A	C		
		80	176					A			
		100	212					A			
		120	248								
Carbon Dioxide Gas CO_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		A	A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A	A		
Carbon Dioxide Gas CO_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		A	A	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A	A		
Carbon Disulfide CS_2	Pure	20	68	C	C	X	A	A	A	X	C
		40	104	C	C			A	B		C
		60	140	X	X			A	C		X
		80	176					A	X		
		100	212					A			
		120	248								
Carbon Monoxide CO	Gas	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Carbon Tetrachloride CCl_4	Pure	20	68	C	C	X	A	A	B	X	X
		40	104	X	X		A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Carbonic Acid H_2CO_3	Satu	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	A	B
		100	212				A	A	B		
		120	248				A	A			
Casein		20	68			A	A	A	A	A	
		40	104			A	A	A	A	A	
		60	140			A	A	A	A	A	
		80	176				A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Castor Oil	Pure	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	A	A			
		100	212				A	A			
		120	248				A	A			
Chloric Acid $HClO_3$	20	20	68	A		X	A	A	A	A	
		40	104	A			A	A		A	
		60	140	B			A	A			
		80	176				A	A			
		100	212								
		120	248								
Chlorine Dioxide ClO_2	8 gm/li	20	68	A	A	C	A	A	A		
		40	104	A	B	X	A	A			
		60	140	B	B		A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Chlorine Dioxide ClO_2	14 gm/li	20	68	A	A	C	A	A	A		
		40	104	A	B	X	A	A			
		60	140	B	B		A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Chlorine Gas Cl_2	** Wet	20	68	A	A	X	A	A	X	X	
		40	104	A	B		A	A			
		60	140	B	C		A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Chlorine Gas (up to 150 ppm moisture) Cl_2	Dry	20	68	A	A	X	A	A	B	B	
		40	104	A	A		A	A	C	X	
		60	140	A	A		A	A	X		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Chlorine Solution (Chlorinated Water)	400 ppm	20	68	A	A	C	A	A	C	B	
		40	104	A	B	X	A	A	X	C	
		60	140	B	B		A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Chlorine Solution (Chlorinated Water)	3000 ppm	20	68	A	A	X	A	A			
		40	104	A	A		A	A			
		60	140								
		80	176								
		100	212								
		120	248								
Chlorobenzene (Monochloro-benzene) C_6H_5Cl	Pure	20	68	X	X	B	A	A	B	X	X
		40	104			C	A	A			
		60	140				A	A			
		80	176				B	A			
		100	212				B	A			
		120	248								
Chloroform (Trichloro-methane) $CHCl_3$	Pure	20	68	X	X	C	A	A	B	X	X
		40	104			X	A	A			
		60	140				B	A			
		80	176				C	A			
		100	212				X	A			
		120	248								
Chloro-sulfonic Acid HSO_3Cl	Pure	20	68	X	X	X	C	A	X	X	X
		40	104				X	A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								
Chromic Acid Anhydride CrO_3	10	20	68	A	A	X	A	A	A	B	X
		40	104	A	A		A	A	A	C	
		60	140	A	B		A	A	A	X	
		80	176		C		A	A	B		
		100	212				A	A	X		
		120	248								
Chromic Acid Anhydride CrO_3	20	20	68	A	A	X	A	A	A	B	X
		40	104	A	B		A	A	A	X	
		60	140	B	C		A	A	A		
		80	176				A	A	B		
		100	212				A	A	C		
		120	248								
Chromic Acid Anhydride CrO_3	30	20	68	C	C	X	A	A	A	X	X
		40	104	X	X		A	A	A		
		60	140				A	A	A		
		80	176				B	A	B		
		100	212				C	A	C		
		120	248								

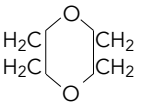
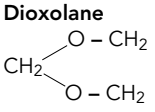
Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Chromic Acid Anhydride CrO_3	50	20	68	C	C	X	A	A	A	X	X
		40	104	X	X		A	A	A		
		60	140				A	A	B		
		80	176				B	A	C		
		100	212					A			
		120	248								
Chromic Potassium Alum $KCr(SO_4)_2$	Satu	20	68	A	A	A	A	A	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	A	A	B	B
		100	212				A	A	A		
		120	248				B				
Citric Acid CH_2COOH CH_2COOH CH_2COOH	10	20	68	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
		80	176		B	A	A	A	A	A	A
		100	212				A	A	A		
		120	248								
Coconut Oil		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A	A	B	A
		60	140	A	A	A	A	A	A		
		80	176		A	A	A	A			
		100	212				A	A			
		120	248				A	A			
Copper Acetate $Cu(CH_3COO)_2$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104				A	A	A	A	
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Copper Borofluoride $Cu(BF_4)_2$		20	68	A	A	A	A	A	A	A	A
		40	104				A	A		A	
		60	140				A	A		A	
		80	176				A	A		A	
		100	212				A	A			
		120	248				A	A			
Copper Carbonate Cu_2CO_3	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A			A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Copper Chloride $CuCl_2$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Copper Cyanide CuCN	Satu	20	68	A	A	A	A	A	A	A	A
		40	104			A	A	A			
		60	140			A	A	A			
		80	176			B	A	A			
		100	212				B	A			
		120	248				C				
Copper Fluoride CuF	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	B	B	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				B				
Copper Nitrate $Cu(NO_3)_2$		20	68	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
		80	176			B	A	A	A	A	B
		100	212				A	A	A		
		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. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Copper Sulfate $CuSO_4$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Corn Oil		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A	A	B	A
		60	140	A	A	A	A	A	A		A
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Corn Syrup		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Cottonseed Oil		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	B	A
		60	140	A	A	A	A	A	A	B	A
		80	176			B	A	A	B	C	A
		100	212				A	A	B		
		120	248				A	A			
Creosote		20	68	X	X	A	A	A	A	X	A
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Cresol $C_6H_4(CH_3)OH$	Pure	20	68	C	X	A	A	A	A	X	X
		40	104			B	A	A	A		
		60	140				B	A	B		
		80	176				B	A			
		100	212				C	A			
		120	248								
Croton Aldehyde $CH_3CH=CH\cdot CHO$	Pure	20	68	X		A	A	A	A	B	C
		40	104				A	A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Cryolite Na_3AlF_6		20	68	B	B	A	A	A			
		40	104	B	B	A	A	A			
		60	140	B	C	A	A	A			
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Cupric Fluoride CuF_2	Satu	20	68	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	
		80	176			B	A	A			
		100	212				A	A			
		120	248				A	A			
Cuprous Chloride CuCl	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Cyclohexane C_6H_{12}	Pure	20	68	X	X	C	A	A	A	X	B
		40	104			X	A	A	A		
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Cyclohexanol $C_6H_{11}OH$	Pure	20	68	X	X	A	A	A	A	X	C
		40	104			B	A	A	A		
		60	140			C	A	A			
		80	176			X	B	A			
		100	212				C	A			
		120	248								
Cyclohexanone $C_6H_{10}O$	Pure	20	68	X	X	B	A	A		X	X
		40	104			C	A	A			
		60	140			X	B	A			
		80	176					A			
		100	212					A			
		120	248								
Decalin $C_{10}H_{18}$	Pure	20	68			X	A	A	A	X	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Decane $CH_3(CH_2)_8CH_3$	Pure	20	68				A	A		X	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Dextrine $(C_6H_{12}O_5)n$	Satu	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	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Dextrose (Glucose) $C_6H_{12}O_6$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Diacetone Alcohol $(CH_3)_2C(OH)CH_2$ $-COCH_3$	Pure	20	68			A	A	A	X	A	X
		40	104			B	B	A			
		60	140				B	A			
		80	176				C	A			
		100	212				X	A			
		120	248								
Dibenzyl Ether $C_6H_5CH_2O$ $-CH_2C_6H_5$	Pure	20	68				A	A		C	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248					A			
Dibutyl Amine $(C_4H_9)_2NH$	Pure	20	68				A	A			
		40	104				C	A			
		60	140				X	A			
		80	176					A			
		100	212								
		120	248								
Dibutyl Ether $(C_4H_9)_2O$	Pure	20	68	X	X	C	A	A	X	X	B
		40	104				A	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Dibutyl Phthalate $C_6H_4(COOC_4H_9)_2$	Pure	20	68	X		B	A	A	B	A	X
		40	104				B	A			
		60	140				C	A			
		80	176					A			
		100	212					A			
		120	248					A			

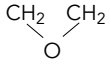
Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Dibutyl Sebacate $H_9C_4OOC(CH_2)_8$ -$COOC_4H_9$		20	68				A	A	C	C	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248					A			
Dichloro-acetic Acid $Cl_2CHCOOH$		20	68	A		B	A	A	X	C	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248								
Dichloro-benzene $C_6H_4Cl_2$	Pure	20	68	X			A	A	B	X	X
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Dichloro-ethylene $CH_2=CCl_2$		20	68	X			A	A	B	X	X
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Dichloro-isopropyl Ether $Cl{\cdot}CH_2{\cdot}CH(CH_3){\cdot}O{\cdot}CH(CH_3){\cdot}CH_2{\cdot}Cl$	Pure	20	68				A	A			
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Diethylamine $(C_2H_5)_2NH$	Pure	20	68	X	X	A	B	A		A	X
		40	104			B	C	A			
		60	140				X	A			
		80	176					A			
		100	212					A			
		120	248								
Diethylene-triamine $H_2N(CH_2CH_2NH)_2H$		20	68	X	X		A	A			
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Diethylether $C_2H_5OC_2H_5$	Pure	20	68	X	X	C	A	A	C	C	C
		40	104			X	B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248								
Diglycolic Acid $(HO_2CCH_2)_2O$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A		A	A	A			
		60	140			A	A	A			
		80	176				A	A			
		100	212					A			
		120	248								
Diisobutyl Ketone $[(CH_3)_2CHCH_2]_2CO$	Pure	20	68	X	X	A	A	A	X	X	B
		40	104				A	A			
		60	140				B	A			
		80	176				X	A			
		100	212								
		120	248								
Diisobutylene C_8H_{16}	Pure	20	68	X	X		A	A	A	X	A
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Diisopropyl Ketone $[(CH_3)CH]_2CO$	Pure	20	68	X	X		X	A	X	B	X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Dimethyl Acetamide $CH_3CON(CH_3)_2$		20	68	X	X	X	X	A			
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Dimethyl Amine $(CH_3)_2NH$	Pure	20	68	X	X	A	B	A	X	C	X
		40	104			B	C	A			
		60	140				X	A			
		80	176								
		100	212								
		120	248								
Dimethyl-aniline $C_6H_3(CH_3)_2$ -(NH_2)	Pure	20	68	X	X		A	A		X	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Dimethyl Ether $(CH_3)_2O$		20	68				A	A	X	X	B
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Dimethyl-formamide $HCON(CH_3)_2$	Pure	20	68	X	X	A	X	A	A	A	X
		40	104			A		A			
		60	140			B		A			
		80	176					A			
		100	212					A			
		120	248								
Dimethyl Phthalate $C_6H_4(COOCH_3)_2$		20	68	X	X	B	B	A	B	B	X
		40	104			B	C	A			
		60	140				X	A			
		80	176								
		100	212								
		120	248								
Dimethyl Sulfoxide (DMP) $(CH_3)_2SO$		20	68				X	A			
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Dioctyl Phthalate (DOP) $C_6H_4(COOC_8H_{17})_2$		20	68	X	X		A	A	A	A	B
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248								
Dioxane 	Pure	20	68	X	X	B	C	A	X	X	X
		40	104			C	C	A			
		60	140				X	A			
		80	176								
		100	212								
		120	248								
Dioxolane 		20	68	X	X		X	A	X	X	X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Diphenyl Oxide $C_6H_5OC_6H_5$	Satu	20	68	X	X			A	A		X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Disodium Hydrogen Ortho Phosphate $Na_2HPO_4{\cdot}12H_2O$		20	68	A	A		A	A			
		40	104	A	A		A	A			
		60	140	A	A		A	A			
		80	176		A		A	A			
		100	212				A	A			
		120	248				A	A			
Epichloro-hydrin $CH_2\text{-}CH\text{-}CH_2Cl$ (O)	Pure	20	68	X	X	X	C	A	X	X	X
		40	104				X	A			
		60	140								
		80	176								
		100	212								
		120	248								
Ethanolamine (Monoethanol-amine) $H_2NCH_2CH_2OH$	Pure	20	68	X	X		X	A		A	A
		40	104					A			
		60	140								
		80	176								
		100	212								
		120	248								
Ethyl Acetate $CH_3COOC_2H_5$	Pure	20	68	X	X	B	B	A	X	B	X
		40	104			B	C	A			
		60	140			C		A			
		80	176					A			
		100	212					A			
		120	248								
Ethyl Acetoacetate $CH_3COCH_2\text{-}COOC_2H_5$	Pure	20	68	X	X	X	A	A	X	A	X
		40	104				B	A		A	
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248								
Ethyl Acrylate $H_2CCH\text{-}COOC_2H_5$	Pure	20	68	X	X		A	A	X	B	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248					A			
Ethyl Alcohol C_2H_5OH	Pure	20	68	A	A	A	A	A	A	A	A
		40	104	A	B	A	A	A	A	A	A
		60	140	B	B	B	A	A	A	A	A
		80	176		C	B	A	A	A	A	B
		100	212				A	A			
		120	248				A	A			
Ethyl Benzene $C_2H_5C_2H_5$		20	68	X	X		A	A	A	X	C
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Ethyl Chloride C_2H_5Cl		20	68	X	X	C	A	A	A	A	B
		40	104			X	A	A	A	A	
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Ethyl Ether $(C_2H_5)_2O$	Pure	20	68	X	X	C	A	A	C	C	C
		40	104			X	B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Ethyl Formate $HCOOC_2H_5$	Pure	20	68				A	A	X	B	X
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
2-Ethyl Hexanol $CH_3(CH_2)_3CH(C_2H_5)CH_2OH$		20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				B	A			
		100	212					A			
		120	248					A			
Ethyl Mercaptan $C_2H_5\text{-}SH$	Pure	20	68				A	A	A	A	X
		40	104					A	A	A	
		60	140					A	A		
		80	176								
		100	212								
		120	248								
Ethyl Monochloro-acetate $ClCH_2COOC_2H_5$	Pure	20	68	C	X	A	A	A	C	A	X
		40	104			A	C	A			
		60	140			A		A			
		80	176					A			
		100	212					A			
		120	248								
Ethyl Oxalate $(COOC_2H_5)_2$		20	68				X	A	X	A	X
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Ethylene Bromide $CH_2Br\text{-}CH_2Br$	Pure	20	68	X	X		A	A	C	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Ethylene Chloride (Ethylene Dichloride) $ClCH_2CH_2Cl$		20	68	X	X	B	A	A	A	X	X
		40	104			X	A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Ethylene Chlorohydrin $ClCH_2\text{-}CH_2OH$	Pure	20	68	X	X	A	B	A	X	A	X
		40	104				C	A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								
Ethylene Diamine $NH_2CH_2CH_2NH_2$	Pure	20	68	X	X	B	X	A		A	A
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Ethylene Glycol $HOCH_2\text{-}CH_2OH$	Pure	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	A	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Ethylene Glycol Monoethyl Ether $HOCH_2\text{-}CH_2OH$	Pure	20	68			A	A	A	C		C
		40	104			A	A	A	X		X
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248								

Epsom Salts – See Magnesium Sulfate, page 21

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Ethylene Oxide 	Pure	20	68	X	X		B	A	X	X	X
		40	104				C	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Fatty Acids RCOOH		20	68	A	B	A	A	A	A	X	A
		40	104	A	B	B	A	A			
		60	140	A	B	B	A	A			
		80	176			C	A	A			
		100	212				A	A			
		120	248				A	A			
Ferrous Chloride $FeCl_2$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	A	A	A	A	A	A	A
		80	176		A	A	A	A	A	A	B
		100	212				A	A	B		
		120	248				A	A			
Ferric Hydroxide $Fe(OH)_3$	Satu	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	A	A	A	A	B
		100	212				A	A			
		120	248				A	A			
Ferric Nitrate $Fe(NO_3)_3$	Satu	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	B	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Ferric Sulfate $Fe_2(SO_4)_3$		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	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Ferric Sulfide Fe_2S_3		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	A	B
		100	212				A	A			
		120	248				A	A			
Ferric Chloride $FeCl_3$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	A	A	A	A	A	A	A
		80	176		A	A	A	A	A	A	B
		100	212				A	A	B		
		120	248				A	A			
Ferrous Hydroxide $Fe(OH)_2$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Ferrous Nitrate $Fe(NO_3)_2$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Ferrous Sulfate $FeSO_4$		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	A	A	A	A	B
		100	212				A	A	B		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Fluoboric Acid HBF_4	Pure	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	
		60	140	B	A	A	A	A	A	A	
		80	176		B	B	A	A	A	B	
		100	212				A	A			
		120	248				A	A			
Fluorine Gas F_2	Wet	20	68	A		X	A	A	A	A	
		40	104	B			A	A	A	A	
		60	140	X			A	A	B	B	
		80	176					A			
		100	212					A			
		120	248					A			
Fluorosilicic Acid (Hydrofluoro-silicic Acid) H_2SiF_6	50	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	B	B	A	A	A	A	A	B
		80	176		C	B	A	A	A	B	B
		100	212				A	A	A		
		120	248				A	A			
Formaldehyde HCHO	35	20	68	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	
		60	140	C	B	A	B	A	A	A	
		80	176			B	X	A	A	A	
		100	212					A			
		120	248					A			
Formaldehyde HCHO	37	20	68	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	
		60	140	C	B	A	B	A	A	A	
		80	176			B	X	A	A	A	
		100	212					A			
		120	248					A			
Formaldehyde HCHO	50	20	68	A	A	A	A	A	B	A	
		40	104	A	A	A	A	A			
		60	140	C	B	A	B	A			
		80	176			B	X	A			
		100	212					A			
		120	248					A			
Formic Acid HCOOH	90	20	68	A	A	A	A	A	X	A	X
		40	104	B	B	B	A	A		A	
		60	140	X	X	X	A	A		A	
		80	176				A	A		A	
		100	212				B	A			
		120	248				C	A			
Freon F-11 CCl_3F		20	68	A			A	A	B	C	X
		40	104	A			A	A			
		60	140	A			A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Freon F-12 CCl_2F_2		20	68	A			A	A	B	B	C
		40	104	A			A	A			
		60	140	A			A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Freon F-21 $CHCl_2F$		20	68	X			A	A	C	C	X
		40	104				A	A	X		
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Freon F-22 $CHClF_2$		20	68	X			A	A	X	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Freon F-113 $CClF_2$-CCl_2F		20	68	B			A	A	B	X	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Freon F-114 $CClF_2$-$CClF_2$		20	68	B			A	A	A	C	B
		40	104				A	A	A		
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Fructose CH_2OH-CO-$(CHOH)_3$-CH_2OH		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	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Fruit Juice	Pure	20	68	A		A	A	A	A	A	
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176			A	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Furan $CH=CH$-O-$CH=CH$		20	68				C	A	X	X	X
		40	104				X	A			
		60	140								
		80	176								
		100	212								
		120	248								
Furfural C_4H_3OCHO	Pure	20	68	X	X	C	B	A	B	A	X
		40	104			X	B	A	B	A	
		60	140				C	A	C	A	
		80	176				X	A			
		100	212					A			
		120	248					A			
Furfuryl Alcohol $C_4H_3OCH_2OH$	Pure	20	68	X	X		A	A	X	C	X
		40	104				A	A			
		60	140				B	A			
		80	176				X	A			
		100	212								
		120	248								
Gallic Acid $C_6H_2(OH)_3COOH$		20	68				A	A	A	A	A
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248					A			
Gasoline - Regular*		20	68	B		C	A	A	B	X	B
		40	104	B		X	A	A	B		B
		60	140				A	A	B		B
		80	176				A	A			
		100	212					A			
		120	248					A			
Gasoline - Sour		20	68	B		C	A	A	B	X	B
		40	104	B		X	A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Gelatin & Glue		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Glycerol (Glycerine) $C_3H_5(OH)_3$	Pure	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	
		80	176			A	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Glycolic Acid $HOCH_2COOH$	Satu	20	68			A	B	A	A	A	A
		40	104			A	X	A			
		60	140			A	X	A			
		80	176				X	A			
		100	212					A			
		120	248								
Heptane $CH_3(CH_2)_5CH_3$		20	68	A		A	A	A	A	X	A
		40	104	A		B	A	A	A		
		60	140	B		C	A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Hexane $CH_3(CH_2)_4CH_3$		20	68	A	A	A	A	A	A	X	A
		40	104	B		B	A	A			
		60	140			C	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Hexyl Alcohol $CH_3(CH_2)_5OH$	Pure	20	68	A	A	A	A	A	A	B	A
		40	104	A			A	A	A	B	A
		60	140	B			A	A	A	C	B
		80	176				B	A	A	X	
		100	212					A	A		
		120	248					A	B		
Hydrazine H_2N-NH_2	Pure	20	68	X	X	C	C	A	X	A	A
		40	104			X	C	A			
		60	140				X	A			
		80	176					A			
		100	212					A			
		120	248								
Hydrobromic HBr	20	20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	C
		60	140	B	B	A	A	A	A	A	X
		80	176		B	A	A	A	B	B	
		100	212				A	A			
		120	248				B	A			
Hydrobromic Acid HBr	47	20	68	A	A	A	A	A	A	A	FKM-F
		40	104	A	A	A	A	A	A	A	
		60	140	B	B	A	A	A			
		80	176		B	A	A	A			
		100	212				A	A			
		120	248				B	A			
Hydrochloric Acid HCl	25	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	A	A	B	X	A
		100	212				A	A	C		B
		120	248				B	A			
Hydrochloric Acid HCl	* 35	20	68	A	A	A	A	A	B	B	A
		40	104	A	A	A	A	A	X	B	A
		60	140	B	A	A	A	A	X	X	A
		80	176		B	B	A	A			B
		100	212				A	A			
		120	248				C	A			
Hydrochloric Acid HCl	* 38	20	68	A	A	A	A	A	B	C	A
		40	104	A	A	A	A	A	X	C	A
		60	140	B	B	A	A	A	X	X	
		80	176		B	B	A	A			
		100	212				B	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. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F
Hydrocyanic Acid HCN		20	68	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Hydrofluoric Acid HF	10	20	68	A	A	A	A	A	A	A	A
		40	104	A	B	A	A	A	A	A	A
		60	140	C	B	A	A	A	A	A	A
		80	176		C	A	A	A	A	A	A
		100	212			B	A	A	A		A
		120	248								
Hydrofluoric Acid HF	30	20	68	A	A	A	A	A	A	A	A
		40	104	B	B	A	A	A	A	A	A
		60	140	C	C	A	A	A	A	A	A
		80	176	X	X	B	A	A	B	B	A
		100	212				A	A			B
		120	248								
Hydrofluoric Acid HF	40	20	68	B	B	A	A	A	A	A	A
		40	104	C	C	A	A	A	A	A	A
		60	140	X	X	A	A	A	A	B	A
		80	176			B	A	A	B	C	A
		100	212				A	A			B
		120	248								
Hydrofluoric Acid HF	55	20	68	B	B	A	A	A	A	A	A
		40	104	C	X	A	A	A	A	B	A
		60	140	X		A	A	A	A	C	A
		80	176			B	A	A	B	X	A
		100	212				A	A			B
		120	248								
Hydrogen H_2		20	68	A	A	A	A	A	A	A	NITRILE
		40	104	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	
		80	176		A	A	A	A	A	A	
		100	212					A			
		120	248					A			
Hydrogen Fluoride (Anhydrous) HF		20	68			A	A	A	X	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Hydrogen Peroxide H_2O_2	20	20	68	A	A	A	A	A	A	A	X
		40	104	A	A	A	A	A	A	B	
		60	140	B	B	A	A	A	A	B	
		80	176		B	B	A	A	A	C	
		100	212				A	A			
		120	248					A			
Hydrogen Peroxide H_2O_2	35	20	68	A	B	A	A	A	A	B	X
		40	104	B	C	B	A	A	A	C	
		60	140	C	X	B	A	A	C	X	
		80	176			C	A	A			
		100	212				A	A			
		120	248					A			
Hydrogen Peroxide H_2O_2	** 50	20	68	B	C	C	A	A	C	X	X
		40	104	C	X	X	A	A	X		
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Hydrogen Sulfide Gas H_2S	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	A	A	A	A	B	B
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Hydrogen Sulfide (Aqueous) H_2S		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	B	A	A
		80	176		A	A	A	A		A	A
		100	212				A	A			
		120	248				A	A			
Hydroiodic Acid HI		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Hydroquinone $C_6H_4(OH)_2$	Satu	20	68	A		A	A	A	A	A	B
		40	104	A		A	A	A	A		
		60	140	A		A	A	A			
		80	176			A	A	A			
		100	212				A	A			
		120	248					A			
Hypochlorous Acid HClO	10	20	68	A	A	A	A	A	A	A	C
		40	104	A	A	B	A	A	A	B	
		60	140	A	A		A	A	A		
		80	176		B		A	A	B		
		100	212				A	A			
		120	248				B	A			
Iodine I_2		20	68	C		A	A	A	B	X	
		40	104	X			A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Isobutyl Alcohol $(CH_3)_3CHCH_2OH$	Pure	20	68	A		A	A	A	A	A	B
		40	104	A		A	A	A			
		60	140			A	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Iso-octane $(CH_3)CCH_2CH(CH_3)_2$		20	68	A		A	A	A	A	X	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Isophorone $C_9H_{14}O$	Pure	20	68					A	X	X	X
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Isopropyl Acetate $(CH_3)COOCH(CH_3)_2$	Pure	20	68					A	X	B	X
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Isopropyl Alcohol $(CH_3)_2CHOH$	Pure	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	
		80	176				A	A	A		
		100	212					A	B		
		120	248					A			
Isopropyl Chloride $(CH_3)_2CHCl$		20	68				A	A	A	X	B
		40	104				A	A			
		60	140				B	A			
		80	176				C	A			
		100	212					A			
		120	248								

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

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Isopropyl Ether $(CH_3)_2CHO-CH(CH_3)_2$	Pure	20	68				A	A	C	C	B
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Jet Fuel JP-4		20	68	A		B	A	A	A	X	B
		40	104	A		X	A	A			
		60	140	B			A	A			
		80	176				A	A			
		100	212				B	A			
		120	248					A			
Jet Fuel JP-5		20	68	A		B	A	A	A	X	A
		40	104	A		X	A	A			
		60	140	B			A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Kerosene		20	68	B		A	A	A	A	X	A
		40	104	B		C	A	A			
		60	140	C		X	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				B	A			
Lacquer (Nitroselrouse lacquer)		20	68	X		A	A	A	C	X	X
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Lactic Acid $CH_3CH(OH)COOH$	25	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	C
		80	176		B	A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Lactic Acid $CH_3CH(OH)COOH$	80	20	68	A	A	A	A	A	A	A	A
		40	104	B	A	A	A	A	A	A	B
		60	140		B	A	A	A	A	A	C
		80	176			B	A	A	A	A	
		100	212				B	A	B		
		120	248					A			
Lard (Animal Oil)		20	68	A	A	A	A	A	A	A	A
		40	104				A	A	A	A	A
		60	140				A	A	A	A	A
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Lauric Acid $CH_3(CH_2)_{10}COOH$		20	68	A		A	A	A	A		
		40	104	A		A	A	A			
		60	140			A	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Lauroyl Chloride $CH_3(CH_2)_{10}COCl$	Pure	20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Lead Acetate $Pb(CH_3COO)_2$	Satu	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	B	A	A
		80	176		A	A	A	A	B	A	B
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Lead Chloride $PbCl_2$		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	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Lead Nitrate $Pb(NO_3)_2$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248								
Lead Sulfate $PbSO_4$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Lemon Oil		20	68			C	A	A	A	C	A
		40	104			X	A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Linoleic Acid $CH_3(CH=CH-CH_3)_3-(CH_2)_7COOH$		20	68	A		B	A	A	A	X	A
		40	104	A			A	A			
		60	140	B			A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Linoleic Oil		20	68	A			A	A	A		
		40	104	A			A	A	B		
		60	140	B			A	A	X		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Linseed Oil		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A	A		
		60	140	A	A	A	A	A			
		80	176			B	A	A			
		100	212				A	A			
		120	248				A	A			
Lithium Bromide LiBr	60	20	68	A		A	A	A	A		A
		40	104	A		A	A	A	A		A
		60	140	A		A	A	A	A		A
		80	176			B	A	A	A		A
		100	212				A	A	A		
		120	248				A	A			
Lithium Chloride LiCl	Satu	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
		80	176			A	A	A	A		A
		100	212				A	A			
		120	248				B	A			
Lithium Hydroxide LiOH		20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176			A	A	A			
		100	212				A	A			
		120	248					A			
Liquor (Gin, Whiskey, etc.)		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
		80	176				A	A	A	A	A
		100	212					A	A		
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Magnesium Carbonate $MgCO_3$		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	A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Magnesium Chloride $MgCl_2$	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	A	A	A	A	A	A	A
		80	176		B	A	A	A	A	A	A
		100	212				A	A	B		
		120	248				A	A			
Magnesium Citrate $Mg_3(C_6H_5O_7)_2$		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Magnesium Fluoride MgF_2	Satu	20	68	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	
		80	176			A	A	A	A	A	
		100	212				A	A	A		
		120	248					A			
Magnesium Hydroxide $Mg(OH)_2$	Satu	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
		80	176			A	A	A	A	A	A
		100	212				B	A	A		
		120	248				B	A			
Magnesium Nitrate $Mg(NO_3)_2$		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	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Magnesium Sulfate (Epsom Salts) $MgSO_4$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Maleic Acid $HOOCC_2H_2COOH$		20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	B	B
		60	140	B	A	A	A	A	B	B	
		80	176		A	A	A	A	B		
		100	212				A	A			
		120	248				A	A			
Malic Acid $HOOCCH_2CH$ $-(OH)COOH$	Satu	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	B	A	A
		80	176		A	A	A	A		A	B
		100	212				A	A			
		120	248				A	A			
Manganese Chloride $MnCl_2$		20	68	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
		80	176			B	A	A	A		
		100	212				A	A			
		120	248				A	A			
Maganese Sulfate $MnSO_4$		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	A	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Mercuric Chloride $HgCl_2$		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	A			
		100	212				A	A			
		120	248				A	A			
Mercuric Cyanide $Hg(CN)_2$	Satu	20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A		
		60	140	A		A	A	A	A		
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Mercuric Nitrate $Hg(NO_3)_2$		20	68	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	
		80	176				A	A	A		
		100	212					A			
		120	248								
Mercuric Sulfate $HgSO_4$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Mercurous Nitrate $Hg_2(NO_3)_2$	Satu	20	68	A		A	A	A	A	A	A
		40	104	A			A	A			
		60	140	A			A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Mercury Hg		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	A	A	A	A	A
		100	212				A	A			
		120	248				A	A			
Methane CH_4		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	B	B	A	A	A	A	A
		80	176				A	A	A	B	
		100	212				A	A	B		
		120	248				A	A			
Methane Sulfonic Acid CH_3SO_3H	50	20	68				A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Methyl Acetate CH_3COOCH_3	Pure	20	68	X	X	B	A	A	X	B	X
		40	104				B	A		C	
		60	140								
		80	176				C	A			
		100	212				X	A			
		120	248					A			
Methyl Acrylate $CH_2CHCOOCH_3$	Pure	20	68				A	A	X	B	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212					A			
		120	248					A			
Methyl Alcohol CH_3OH	Pure	20	68	A	A	A	A	A	B	A	A
		40	104	B	B	A	A	A	B	A	B
		60	140	B	B	A	A	A	C	A	C
		80	176			B	A	A	C	B	
		100	212				A	A	C		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Methyl Amine CH_3NH_2		20	68	X	X	B	C	A	A	A	C
		40	104				X	A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Methyl Bromide CH_3Br		20	68	C		X	A	A	A	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Methyl Cellosolve $HOCH_2CH_2OCH_3$		20	68	A		A	A	A		B	
		40	104				A	A			
		60	140				A	A			
		80	176								
		100	212								
		120	248								
Methyl Chloride CH_3Cl		20	68	X		C	A	A	C	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Methyl Chloroform CH_3CCl_3		20	68	X		C	A	A	B	X	X
		40	104				B	A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Methyl Ethyl Ketone (MEK) $CH_3\text{-}CO\text{-}C_2H_5$		20	68	X	X	A	X	A	X	B	X
		40	104			C		A		C	
		60	140			X		A			
		80	176					A			
		100	212					B			
		120	248								
Methyl Formate $HCOOCH_3$		20	68				A	A	X	B	X
		40	104				B	A			
		60	140				C	A			
		80	176				C	A			
		100	212								
		120	248								
Methyl Isobutyl Carbinol $(CH_3)_2CHCH_2CH\text{-}(OH)CH_3$		20	68			A	A	A			
		40	104			A	A	A			
		60	140				B	A			
		80	176				B	A			
		100	212					A			
		120	248								
Methyl Isobutyl Ketone $(CH_3)_2CHCH_2\text{-}COCH_3$		20	68	X	X	A	X	A	X	B	X
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Methyl Isopropyl Ketone $(CH_3)_2CHCOCH_3$		20	68				X	A		X	
		40	104	X							
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Methyl Methacrylate $CH_2C(CH_3)\text{-}COOCH_3$		20	68				A	A	X	X	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Methyl Monochloro-acetate $ClCH_2COOCH_3$	Pure	20	68	C	X	A	A	A	C	A	X
		40	104			A	C	A			
		60	140			A		A			
		80	176					A			
		100	212								
		120	248								
Methyl Salicylate $C_6H_4(OH)COOCH_3$		20	68			A	A	A	A	X	X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Methylene Bromide CH_2Br_2		20	68				A	A	A	X	X
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Methylene Chloride CH_2Cl_2	**	20	68	X	X	X	B	A	C	X	X
		40	104				B	A			
		60	140				X	A			
		80	176								
		100	212								
		120	248								
Methylene Iodine CH_2I_2		20	68				A	A	A		
		40	104				A	A			
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Monochlor-acetic acid $ClCH_2COOH$	50	20	68	A	A	B	A	A	B	C	X
		40	104	B	B	B	A	A	X		
		60	140	B	B	X	A	A			
		80	176				A	A			
		100	212					A			
		120	248								
Monochloro-benzene C_6H_5Cl		20	68	X	X	B	A	A	B	X	X
		40	104			C	A	A			
		60	140				A	A			
		80	176				B	A			
		100	212				B	A			
		120	248								
Monoethanol-amine (Ethanolamine) $H_2NCH_2CH_2OH$	Pure	20	68	X	X		X	A		A	A
		40	104					A			
		60	140								
		80	176								
		100	212								
		120	248								
Monomethy-laniline $C_6H_5NHCH_3$		20	68				A	A	A	X	X
		40	104				B	A			
		60	140				X	A			
		80	176					A			
		100	212								
		120	248								
Morpholine $O(CH_2CH_2)_2NH$	Pure	20	68	X	X	A	A	A	A	C	X
		40	104			A	A	A			
		60	140			A	C	A			
		80	176					A			
		100	212								
		120	248								
Naphtha		20	68	A		A	A	A	A	X	B
		40	104			B	A	A			
		60	140			C	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

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

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Naphthalene $C_{10}H_8$		20	68	X		B	A	A	A	X	X
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A	A		
		100	212				A	A			
		120	248				A	A			
Natural Gas		20	68	A			A	A	A	A	A
		40	104	A			A	A			
		60	140	B			A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Nickel Acetate $(CH_3CO_2)_2Ni$	Satu	20	68	A	A	A	A	A	C	A	A
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176		A	A	A	A			
		100	212				A	A			
		120	248				A	A			
Nickel Dichloride $NiCl_2$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Nickel Nitrate $Ni(NO_3)_2$	Satu	20	68	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
		80	176			A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A	A		
Nickel Sulfate $NiSO_4$	Satu	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	A	A
		100	212				A	A	B		
		120	248				A	A			
Nicotine $C_{10}H_{14}N_2$		20	68	A		A	A	A			
		40	104	A		A	B	A			
		60	140	A				A			
		80	176					A			
		100	212					A			
		120	248					A			
Nicotinic Acid C_3H_4NCOOH		20	68	A		A	A	A		A	
		40	104	A		A	A	A			
		60	140	A		A	A	A			
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Nitric Acid HNO_3	10	20	68	A	A	A	A	A	A	A	FKM-F
		40	104	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	B	
		80	176		B	B	A	A	A	X	
		100	212				A	A	A		
		120	248				A	A			
Nitric Acid HNO_3	* 30	20	68	A	A	A	A	A	A	B	A
		40	104	A	B	A	A	A	A	B	A
		60	140	B	C	B	A	A	B	X	A
		80	176		X	B	A	A	C		A
		100	212				A	A	C		B
		120	248				B	A			
Nitric Acid HNO_3	* 50	20	68	A	A	A	A	A	A	X	A
		40	104	B	B	B	A	A	B		A
		60	140	B	C	C	A	A	C		B
		80	176		X	X	A	A	X		C
		100	212				C	A			X
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F
Nitric Acid HNO_3	* 70	20	68	A	B	C	A	A	C	X	A
		40	104	B	C	X	A	A	X		A
		60	140	C	X		B	A			B
		80	176				C	A			
		100	212				X	A			
		120	248								
Nitric Acid HNO_3	* 98	20	68	X	X	X	A	A	X	X	X
		40	104				B	B			
		60	140				X	B			
		80	176					C			
		100	212					C			
		120	248								
Nitrobenzene $C_6H_5NO_2$		20	68	X	X	A	B	A	B	B	
		40	104			B	C	A			
		60	140			C	X	A			
		80	176					A			
		100	212					A			
		120	248					A			
Nitroethane $CH_3CH_2NO_2$	Pure	20	68				A	A	X	A	NITRILE
		40	104					A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								
Nitrogen Dioxide NO_2		20	68	A		A	A	A	A	A	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Nitromethane CH_3NO_2	Pure	20	68				A	A		B	X
		40	104				A	A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								
Nitrotoluene $C_6H_4CH_3NO_2$	Pure	20	68	X	X	A	A	A	C	X	C
		40	104			A	A	A			X
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248								
Nitrous Acid HNO_2	10	20	68			C	A	A	A	B	X
		40	104			X	A	A			
		60	140				A	A			
		80	176				A	A			
		100	212								
		120	248								
Nitrous Oxide N_2O		20	68	A		A	A	A	A	A	
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176			A	A	A	A	B	
		100	212				A	A	B		
		120	248				B	A	B		
Octane C_8H_{18}		20	68				A	A	A	X	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Octene $CH_3(CH_2)_5CH=CH_3$	Pure	20	68				A	A	A	X	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	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. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Oil - Heavy		20	68	B	B	X	A	A	B	X	B
		40	104				A	A	B		B
		60	140				A	A			
		80	176					A			
		100	212					A			
		120	248					A			
Oil - Light (Incl. Diesel Fuels)		20	68	A		A	A	A	A	X	A
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Oil - Lubricating (ASTM 1)		20	68	A		B	A	A	A	X	A
		40	104	A		C	A	A	A		B
		60	140	A		X	A	A	A		
		80	176				A	A	A		
		100	212				A	A	A		
		120	248				A	A			
Oil - Lubricating (ASTM 2 and 3)		20	68	A		B	A	A	A	X	A
		40	104	A		C	A	A	A		B
		60	140	A		X	A	A	A		
		80	176				A	A	A		
		100	212				A	A	B		
		120	248				A	A			
Oil - Sulfonated		20	68	A		A	A	A	A	A	A
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Oil - Machine, Mineral, Motor		20	68	A		A	A	A	A	X	A
		40	104	A		B	A	A	A		A
		60	140	A		C	A	A	A		B
		80	176				A	A			
		100	212				A	A			
		120	248								
Oil - Petroleum (Crude Oil)		20	68	B		B	A	A	A	X	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Oleic Acid $CH(CH_2)_7CH_3$ ‖ $CH(CH_2)_7COOH$		20	68	A	B	A	A	A	A	X	X
		40	104	A	B	A	A	A	A		
		60	140	A	B	A	A	A	A		
		80	176			A	A	A	A		
		100	212				A	A	A		
		120	248				B	A	B		
Oleum (fuming sulphuric acid) $H_2SO_4+SO_3$		20	68	X	X	X	X	A	X	X	X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Olive Oil		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A	A		A
		60	140	A	A	A	A	A	A		A
		80	176		A	A	A	A	A		A
		100	212				A	A			
		120	248				A	A			
Organic Phosphorus Series Insecticide (Sumition®)		20	68	X	X	A	A	A	A	A	C
		40	104			A	A	A	A	A	
		60	140			B	A	A	A	A	
		80	176				A	A			
		100	212				B	A			
		120	248				B	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Oxalic Acid HOOCCOOH	20	20	68	A	A	A	A	A	B	A	B
		40	104	A	A	A	A	A		A	
		60	140	A	A	A	A	A			
		80	176		A	A	B	A			
		100	212				C	A			
		120	248					A			
Oxalic Acid HOOCCOOH	50	20	68	A	A	A	A	A	B	A	B
		40	104	A	A	A	A	A		A	
		60	140	A	A	A	B	A			
		80	176		A	A	C	A			
		100	212					A			
		120	248					A			
Oxygen Gas O_2		20	68	A	A	A	A	A	A	A	B
		40	104	A			A	A	A	A	
		60	140	A			A	A	A	A	
		80	176				A	A	A	A	
		100	212					A			
		120	248					A			
Ozone Gas O_3	7000 ppm	20	68	X	X	X	B	A		B	
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Ozone Solution (Aqueous) O_3	10 ppm	20	68	A	A	B	A	A	A	A	
		40	104	A	B	B	A	A	A	A	
		60	140	B	B		A	A	B	B	
		80	176				A	A			
		100	212								
		120	248								
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	
		60	140	B			A	A	B	B	
		80	176				A	A			
		100	212								
		120	248								
Palmitic Acid $C_{15}H_{31}COOH$	Pure	20	68	A		A	A	A	A	B	A
		40	104			A	A	A			
		60	140			A	A	A			
		80	176			B	A	A			
		100	212				A	A			
		120	248				A	A			
Paraffin Oil		20	68	A	A	A	A	A	A	X	A
		40	104	A	A	A	A	A	A		A
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Perchloro-ethylene $Cl_2C=CCl_2$	Pure	20	68	X	X	B	A	A	A	X	X
		40	104			C	A	A	A		
		60	140			X	A	A	B		
		80	176				A	A			
		100	212				A	A			
		120	248								
Perchloric Acid $HClO_4$	10	20	68	A		A	A	A	A	A	X
		40	104	A		A	A	A	A	A	
		60	140	B		B	A	A	A	A	
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Perchloric Acid $HClO_4$	70	20	68	B		C	A	A	A	A	
		40	104				A	A	A	A	
		60	140				A	A	A	A	
		80	176				A	A			
		100	212					A			
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Phenol C_6H_5OH	Pure	20	68	A		A	A	A	A	A	X
		40	104	B		A	A	A			
		60	140			B	B	A			
		80	176			X	B	A			
		100	212					A			
		120	248					A			
Phenylhydrazine $C_6H_5NHNH_2$		20	68	X		C	A	A	X	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				B	A			
		100	212				C	A			
		120	248				X	A			
Phenylhydrazine Hydrochloride $C_6H_8N_2$—HCl		20	68	X	X	A	A	A	A	A	X
		40	104				A	A	A	A	
		60	140				A	A			
		80	176					A			
		100	212								
		120	248								
Phosgene Gas $COCl_2$		20	68	X	X	X			X		X
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Phosphoric Acid H_3PO_4	10	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	B
		80	176		B	A	A	A	A	A	C
		100	212				A	A	A		
		120	248				A	A			
Phosphoric Acid H_3PO_4	50	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	B	A	A	A	A	A	C
		80	176		C	C	A	A	A	A	X
		100	212				A	A	A		
		120	248				A	A			
Phosphoric Acid H_3PO_4	85	20	68	A	A	A	A	A	A	A	A
		40	104	A	B	A	A	A	A	A	B
		60	140	B	B	A	A	A	A	A	X
		80	176		C	B	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Phosphorus Oxychloride (Phosphoryl chloride) $POCl_3$		20	68	X	X	X	X	B	X	X	X
		40	104					C			
		60	140								
		80	176								
		100	212								
		120	248								
Phosphorus Pentoxide P_2O_5	Pure	20	68	A	A	A	A	A	A	A	
		40	104				A	A	A	A	
		60	140				A	A	A	A	
		80	176				A	A			
		100	212				A	A			
		120	248					A			
Phosphorus Red P_4		20	68	A	A	A	A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Phosphorus Trichloride PCl_3	Pure	20	68	X	X	X	A	A	B	X	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Phosphorus Yellow P_4		20	68	A	A	A	A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Photographic Solutions (Sodium Thiosulfate) $Na_2S_2O_3$		20	68	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	
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Phthalic Acid $C_6H_4(COOH)_2$		20	68	A		A	A	A	A	A	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				B	A			
		120	248					A			
Picric Acid $C_6H_2(OH)(NO_2)_3$	10	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	C
		80	176		B	A	A	A	B	B	X
		100	212				A	A	C		
		120	248					A			
Polyethylene Glycol $H(OCH_2CH_2)nOH$		20	68	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	
		80	176		B	B	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Poly Aluminium Chloride $[Al_2(OH)nCl_{6-n}]m$		20	68	A	A	A	A	A	A	A	A
		40	104		A	A	A	A	A	A	
		60	140		A	A	A	A	A	A	
		80	176					A			
		100	212								
		120	248								
Polyvinyl Acetate $[CH_3COOCH_2=CH_2]n$		20	68			A	A	A	A	A	A
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248					A			
Polyvinyl Alcohol $[-CH_2-CH(OH)-]n$		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	
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Potash (Potassium Carbonate) K_2CO_3		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Potassium Acetate CH_3COOK	Satu	20	68	A	A	A	A	A	A	A	A
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Alum $K_2SO_4Al_2(SO_4)_3$	Satu	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	A	A	A	B	B
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Potassium Aluminum Silicate $Al_2O_3 \cdot K_2O \cdot 6SiO_2$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Potassium Bicarbonate $KHCO_3$	Satu	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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Potassium Bichromate $K_2Cr_2O_7$	Satu	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	A	B
		100	212				A	A	A		
		120	248				A	A			
Potassium Bisulfate $KHSO_4$		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	A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Potassium Borate		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Potassium Bromate $KBrO_3$		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			
		100	212				A	A			
		120	248				A	A			
Potassium Bromide KBr		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				B	A			
Potassium Chlorate (Aqueous) $KClO_3$		20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	
		60	140	B	A	A	A	A	A		
		80	176		B	B	A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Chloride KCl		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Potassium Chromate K_2CrO_4		20	68	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
		80	176		B	B	A	A	A	A	B
		100	212				A	A	A		
		120	248				B	A			
Potassium Cyanide KCN		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	A	B
		100	212				A	A	B		
		120	248				A	A			
Potassium Ferricyanide $K_3[Fe(CN)_6]$		20	68	A	A	A	A	A	A	A	A
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Ferrocyanide $K_4[Fe(CN)_6]$		20	68	A	A	A	A	A	A	A	A
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Fluoride KF		20	68	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
		80	176			A	A	A	A	A	B
		100	212				A	A	A		
		120	248				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 Hypochlorite KClO		20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176					A			
		100	212					A			
		120	248					A			
Potassium Iodide KI		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				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	A
		60	140	A	A	A	A	A	A	A	A
		80	176			A	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Potassium Perborate KBO_3		20	68	A	A	A	A	A			
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176		A	A	A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Perchlorate $KClO_4$		20	68	A	A	A	A	A			
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176		B	B	A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Permanganate $KMnO_4$	10	20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	
		60	140	B	A	A	A	A	A	A	
		80	176		A	B	A	A			
		100	212				A	A			
		120	248				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	
		60	140	B	A	A	A	A	A	A	
		80	176		B	B	A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Potassium Persulfate $K_2S_2O_8$		20	68	A	A	A	A	A	A	A	X
		40	104	A		A	A	A	A	A	
		60	140	A		A	A	A	A	A	
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Potassium Phosphate K_3PO_4		20	68	A	A	A	A	A	A	A	A
		40	104	A		A	A	A	A	A	C
		60	140	C		A	A	A	A	A	X
		80	176			A	A	A	A	A	
		100	212				A	A	A		
		120	248					A			
Potassium Sulfate K_2SO_4	Pure	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	A	A	A	B	
		100	212				A	A	A		
		120	248				A	A	B		
Potassium Sulfide K_2S		20	68	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	
		80	176			A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Potassium Sulfite K_2SO_3		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	A			
		120	248								
Potassium Thiocyanate KSCN		20	68	A	A	A	A	A	A	C	A
		40	104	A	A	A	A	A	A		
		60	140	A	A	A	A	A	A		
		80	176				A	A	A		
		100	212				A	A			
		120	248				A	A			
Propane $CH_3CH_2CH_3$		20	68	A	A	A	A	A	A	X	A
		40	104			A	A	A			
		60	140			B	A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Propionic Acid CH_3CH_2COOH	50	20	68	A		A	A	A	X	B	B
		40	104	A		A	A	A			
		60	140			A	A	A			
		80	176					A			
		100	212					A			
		120	248								
Propyl Acetate $CH_3CO_2C_3H_7$	Pure	20	68				A	A	X	B	X
		40	104				B	A			
		60	140				C	A			
		80	176				X	A			
		100	212								
		120	248								
Propyl Alcohol C_3H_7OH	Pure	20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	B
		60	140	B	A	A	A	A	A	A	C
		80	176		B	B	B	A	A	A	X
		100	212				C	A	A		
		120	248					A			
Propyl Nitrate $C_3H_7NO_3$		20	68				A	A	X	B	
		40	104					A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Propylene Dichloride $CH_3CHClCH_2Cl$	Pure	20	68	X	X	X	A	A	B	X	X
		40	104				A	A			
		60	140				B	A			
		80	176				B	A			
		100	212								
		120	248								
Propylene Oxide CH_3CHCH_2 (O)		20	68	X	X		C	A	X	X	X
		40	104				X	A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Pyridine C_5H_5N		20	68	X	X	A	C	A	X	B	X
		40	104			A	C	A		C	
		60	140			B	X	A		X	
		80	176					A			
		100	212								
		120	248								
Radium Chloride $RaCl_2$		20	68	A		A	A	A	A	A	X
		40	104			A	A	A	A	A	
		60	140			A	A	A	A	A	
		80	176				A	A			
		100	212				A	A			
		120	248								
Rhodium Chloride $RhCl_3$		20	68	A		A	A	A	A	A	A
		40	104			A	A	A	A	A	
		60	140				A	A	A	A	
		80	176				A	A			
		100	212					A			
		120	248								
Salicylalde-hyde C_6H_4OHCHO		20	68				A	A	A	A	A
		40	104				A	A	A		
		60	140				B	A			
		80	176				C	A			
		100	212				X	A			
		120	248								
Salicylic Acid $C_6H_4OHCO_2H$		20	68	A			A	A	A	A	A
		40	104	A			A	A	A	A	
		60	140	A			A	A	A	A	
		80	176				A	A	A		
		100	212				B	A			
		120	248					A			
Silicic Acid $SiO_3 \cdot nH_2O$		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Silicone Oil		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	
		80	176			A	A	A	A		
		100	212				A	A			
		120	248				A	A			
Silver Acetate CH_3COOAg		20	68	A		A	A	A	A	A	
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Silver Chloride AgCl		20	68	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	
		80	176			A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Silver Cyanide AgCN		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	A	A			
		100	212				A	A			
		120	248				A	A			
Silver Nitrate $AgNO_3$		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	A	A	A	B
		100	212				A	A			
		120	248				A	A			
Silver Sulfate Ag_2SO_4		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Sodium Acetate CH_3COONa	Satu	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A		A	
		60	140	A	A	A	A	A		A	
		80	176		A	A	A	A		A	
		100	212				A	A			
		120	248				A	A			
Sodium Alum $NaAl(SO_4)_2 \cdot 12H_2O$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Sodium Benzoate C_6H_5COONa		20	68	A	A	A	A	A			
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Sodium Bicarbonate $NaHCO_3$		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	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Sodium Bichromate $Na_2Cr_2O_7$	Satu	20	68	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
		80	176		B	B	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Sodium Bisulfate $NaHSO_4$		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	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Bisulfite $NaHSO_3$		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	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Bromate $NaBrO_3$		20	68	A		A	A	A	A	A	X
		40	104				A	A	A	A	
		60	140				A	A	A	A	
		80	176				A	A			
		100	212				A	A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Sodium Bromide NaBr	Satu	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	A	A			
		100	212				A	A			
		120	248				A	A			
Sodium Carbonate Na_2CO_3		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	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Sodium Chlorate $NaClO_3$	Satu	20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	
		60	140	A	B	B	A	A	A	A	
		80	176		B	B	A	A	B	A	
		100	212				A	A	B		
		120	248				A	A			
Sodium Chloride (Brine) NaCl		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	A	A	A	A	A
		100	212				A	A	A		
		120	248								
Sodium Chlorite $NaClO_2$	25	20	68	X	X		A	A	B	B	X
		40	104				B	B			
		60	140								
		80	176								
		100	212								
		120	248								
Sodium Cyanide (Aqueous) NaCN		20	68	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	
		80	176		B	B	A	A	A	A	
		100	212				A	A	B		
		120	248				A	A			
Sodium Dithionite $Na_2S_2O_4$	10	20	68	A		A	A	A	A	A	X
		40	104	A		A	A	A	A	A	
		60	140			A	A	A	A	A	
		80	176					A			
		100	212					A			
		120	248								
Sodium Ferricyanide $Na_3[Fe(CN)_6] \cdot H_2O$	Satu	20	68	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	
		80	176		B	B	A	A			
		100	212				A	A			
		120	248				A	A			
Sodium Ferrocyanide $Na_4[Fe(NC)_6] \cdot 10H_2O$	Satu	20	68	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	
		80	176		B	B	A	A			
		100	212				A	A			
		120	248				A	A			
Sodium Fluoride NaF		20	68	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	
		80	176			A	A	A			
		100	212			A	A	A			
		120	248				A	A			
Sodium Hydroxide (Caustic Soda) NaOH	10	20	68	A	C	A	B	A	C	A	A
		40	104	A	X	A	B	A	C	A	A
		60	140	A	X	A	B	A	X	A	A
		80	176		X	B	C	A		A	A
		100	212				C	A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Sodium Hydroxide (Caustic Soda) NaOH	15	20	68	A	B	A	A	A	C	A	A
		40	104	A	C	A	A	A	C	A	A
		60	140	A	C	A	B	A	X	A	A
		80	176		X	B	C	A		A	A
		100	212				X	A			
		120	248					A			
Sodium Hydroxide (Caustic Soda) NaOH	30	20	68	A	B	A	A	A	C	A	A
		40	104	A	B	A	A	A	X	A	A
		60	140	A	C	A	B	A		A	A
		80	176		X	A	C	A		A	A
		100	212				X	A			
		120	248					A			
Sodium Hydroxide (Caustic Soda) NaOH	50	20	68	A	B	A	A	A	X	A	
		40	104	A	B	A	B	A		A	
		60	140	A	C	A	C	A		A	
		80	176		X	A	X	A		A	
		100	212					A			
		120	248					A			
Sodium Hypochlorite (Bleach) NaOCl	3	20	68	A	A	B	A*	A	A	B	
		40	104	A	A	B	A*	A	A	B	
		60	140	B	B	B	A*	A	B	C	
		80	176						C		
		100	212								
		120	248								
Sodium Hypochlorite (Bleach) NaOCl	5	20	68	A	A	B	A*	A	A	B	
		40	104	A	A	B	A*	A	A	B	
		60	140	B	B	C	B*	A	B	C	
		80	176						C		
		100	212								
		120	248								
Sodium Hypochlorite (Bleach) NaOCl	7	20	68	A	A	B	A*	A	A	B	
		40	104	A	A	C	A*	A	A	C	
		60	140	B	B	C	B*	A	B	C	
		80	176						C		
		100	212								
		120	248								
Sodium Hypochlorite (Bleach) NaOCl	10	20	68	A	A	B	A*	A	A	X	
		40	104	A	A	C	A*	A	A		
		60	140	B	B	C	B*	A	B		
		80	176						C		
		100	212								
		120	248								
Sodium Hypochlorite (Bleach) NaOCl	13	20	68	A	A	B	A*	A	A	X	
		40	104	A	A	C	A*	A	A		
		60	140	B	B		B*	A	B		
		80	176						C		
		100	212								
		120	248								
Sodium Iodide NaI		20	68	A		A	A	A	A	A	
		40	104	A		A	A	A	A	A	
		60	140				B	A	A	A	
		80	176					A			
		100	212								
		120	248								
Sodium Metasilicate Na_2SiO_3		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	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Nitrate $NaNO_3$	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Sodium Nitrite $NaNO_2$	Satu	20	68	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
		80	176		B	A	A	A	A	A	B
		100	212				A	A	A		
		120	248					A	A		
Sodium Palmitate $Na(C_{15}H_{31}COO)$	5	20	68			A	A	A			
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Sodium Perborate $NaBO_3{\cdot}4H_2O$		20	68			A	A	A	A	A	A
		40	104			A	A	A	A	A	
		60	140			A	A	A	A	A	
		80	176			A	A	A	A		
		100	212				A	A			
		120	248				A	A			
Sodium Perchlorate $NaClO_4$		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A		
		60	140	B	B	A	A	A	A		
		80	176		B	B	A	A	A		
		100	212				A	A			
		120	248				A	A			
Sodium Peroxide Na_2O_2		20	68	A	A	A	A	A	A	A	B
		40	104	A	A	A	A	A	A	A	
		60	140	B	B	A	A	A	A		
		80	176		B	A	A	A	A		
		100	212				A	A			
		120	248				A	A			
Sodium Persulfate $Na_2S_2O_8$	Satu	20	68	A	A	A	A	A	A	A	X
		40	104	A		A	A	A	A	A	
		60	140	B		A	A	A	A	A	
		80	176				A	A	A	A	
		100	212				A	A	A		
		120	248					A			
Sodium Phosphate (Acidic) Na_3PO_4		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		A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Phosphate (Alkaline) Na_3PO_4		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	A	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Phosphate (Neutral) Na_3PO_4		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	A	A	A	A	A	A
		100	212				A	A	A		
		120	248				A	A			
Sodium Silicofluoride Na_2SiF_6		20	68	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	
		80	176			A	A	A			
		100	212				A	A			
		120	248				B	A			
Sodium Sulfate Na_2SO_4	Satu	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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			

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

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Sodium Sulfide Na_2S		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	A	A	A	A	B
		100	212				A	A	B		
		120	248				A	A			
Sodium Sulfite Na_2SO_3		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	A	A	B	B	
		100	212				A	A			
		120	248				A	A			
Sodium Thiocyanate NaSCN		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	
		80	176				A	A	A		
		100	212				A	A			
		120	248				B	A			
Soybean Oil		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			
		120	248				A	A			
Stannic Chloride (Tin (IV) Chloride) $SnCl_4$		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			
		120	248				A	A			
Stannous Chloride (Tin (II) Chloride) $SnCl_2$		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			
		120	248				A	A			
Stearic Acid $CH_3(CH_2)_{16}COOH$		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	B	A	A	A		A
		60	140	A	A	B	A	A	B		B
		80	176		B		A	A	C		
		100	212				A	A			
		120	248				A	A			
Styrene $C_6H_5CH{=}CH_2$		20	68				A	A	A	X	C
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248					A			
Succinic Acid (Amber Acid) $CH_2{=}COOH$ | $CH_2{=}COOH$		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			
		120	248				B	A			
Sugar Liquors (Beet, Cane)		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	A	A	A		
		100	212				A	A			
		120	248				A	A			
Sulfamic Acid $HOSO_2NH_2$	20	20	68	A	A	A	A	A			
		40	104	A	A	A	A	A			
		60	140			A	A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Sulfur S	Pure	20	68	A	A		A	A	A	C	X
		40	104	A	A		A	A			
		60	140	B	B			A			
		80	176		B			A			
		100	212					A			
		120	248					A			
Sulfur Chloride S_2Cl_2		20	68			C	A	A	A	X	X
		40	104			X	A	A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248					A			
Sulfur Dichloride SCl_2		20	68			C	A	A	A	X	X
		40	104			X	A	A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Sulfur Dioxide Gas SO_2	Dry	20	68	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A		A	
		80	176		A	A	A	A		B	
		100	212				A	A			
		120	248				A	A			
Sulfur Dioxide Gas SO_2	Wet	20	68	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	
		80	176		B	B	A	A		A	
		100	212				A	A			
		120	248				A	A			
Sulfur Trioxide SO_3		20	68	X	X	X	X	B	X	X	FKM-F
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Sulfuric Acid H_2SO_4	10	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	A	A	A	A	B
		100	212				A	A	A		C
		120	248				A	A	A		X
Sulfuric Acid H_2SO_4	30	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	A	A	A	B	B
		100	212				A	A	A		C
		120	248				A	A	A		X
Sulfuric Acid H_2SO_4	50	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	A	A	A	B	B
		100	212				A	A	A		C
		120	248				A	A	B		X
Sulfuric Acid H_2SO_4	60	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	A	A	A	A	C	B
		100	212				A	A	B		C
		120	248				C	A	C		X
Sulfuric Acid H_2SO_4	70	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	B	A
		80	176		B	B	A	A	A	X	B
		100	212				A	A	B		C
		120	248				C	B	C		X

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

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	FKM-F
Sulfuric Acid H_2SO_4	80	20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	A
		60	140	B	B	B	A	A	A	B	A
		80	176		C	B	A	A	B	X	B
		100	212				B	A	C		C
		120	248				X	B			X
Sulfuric Acid H_2SO_4	90	20	68	A	A	A	A	A	A	B	A
		40	104	B	A	A	A	A	A	B	A
		60	140	B	B	B	A	A	A	C	A
		80	176		C	B	A	A	B	X	B
		100	212				B	A	C		C
		120	248				X	B	X		X
Sulfuric Acid H_2SO_4	93	20	68	A	A	A	A	A	A	B	A
		40	104	B	B	A	A	A	A	B	A
		60	140	B	B	B	A	A	B	C	A
		80	176		C	B	A	A	B	X	B
		100	212			C	B	A	X		C
		120	248				X	B			X
Sulfuric Acid H_2SO_4	94	20	68	A	A	B	A	A	A	C	A
		40	104	B	B	B	A	A	B	X	A
		60	140	B	C	B	A	A	C		B
		80	176			C	B	A	C		C
		100	212				C	A			
		120	248				X	B			
Sulfuric Acid H_2SO_4	95	20	68	A	A	C	A	A	A	X	A
		40	104	B	B		A	A	C		B
		60	140	C	C		A	A	C		C
		80	176				B	A			
		100	212				C	A			
		120	248				X	B			
Sulfuric Acid H_2SO_4	* 96	20	68	A	B	X	A	A	B	X	A
		40	104	C	C		A	A	C		B
		60	140	C	X		A	A	X		C
		80	176				B	A			
		100	212				C	A			
		120	248				X	B			
Sulfuric Acid H_2SO_4	98	20	68	B	B	X	A	A	X	X	B
		40	104	C	C		A	A			C
		60	140	X	X		B	A			
		80	176				C	A			
		100	212				X	B			
		120	248					B			
Sulfuric Acid H_2SO_4	100	20	68	X	X	X	X	A	X	X	NITRILE
		40	104					A			
		60	140								
		80	176								
		100	212								
		120	248								
Sulfurous Acid H_2SO_3		20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	B	
		80	176		B	A	A	A	B	C	
		100	212				A	A	C		
		120	248					A			
Sulfuryl Chloride SO_2Cl_2	Pure	20	68	X	X		B	A	A	X	X
		40	104				C	A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Tall Oil		20	68	A			A	A	A	B	A
		40	104	A			A	A	A		A
		60	140	B			A	A	A		A
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Tannic Acid (Tannin) $C_{76}H_{52}O_{46}$		20	68	A	A	A	A	A	A	B	A
		40	104	A	A	A	A	A			
		60	140	A	A	A	A	A			
		80	176			A	A	A			
		100	212				A	A			
		120	248				A	A			
Tartaric Acid (Dioxysuccinic Acid) CH(OH) COOH | CH(OH) COOH		20	68	A		A	A	A	A	A	A
		40	104	A		A	A	A	A	A	A
		60	140	A		A	A	A	A	B	A
		80	176			B	A	A	A		B
		100	212				A	A			
		120	248				A	A			
Tertiary Butyl Alcohol $(CH_3)_3C(OH)$		20	68	A	A	A	A	A	A	B	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Tetrachloro-ethane $Cl_2CHCHCl_2$	Pure	20	68	X		B	A	A	A	X	X
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248					A			
Tetraethyl Lead $Pb(C_2H_5)_4$	Pure	20	68	A		A	A	A	A	X	B
		40	104				A	A	A		
		60	140				A	A	A		
		80	176				A	A	B		
		100	212				A	A			
		120	248				A	A			
Tetrahydro-furan CH_2-CH_2 | CH_2-CH_2 (O)	Pure	20	68	X	X	B	C	A	B	X	X
		40	104			C	X	A			
		60	140			X		A			
		80	176					B			
		100	212								
		120	248								
Tetralin (Tetrahydro-naphthalene) $C_{10}H_{12}$	Pure	20	68	X		X	A	A	A	X	X
		40	104				A	A			
		60	140				B	A			
		80	176				B				
		100	212								
		120	248								
Tetramethyl Ammonium Hydroxide $(CH_3)_4NOH$	50	20	68				A	A			
		40	104				A	A			
		60	140				B	A			
		80	176				B	A			
		100	212				C	A			
		120	248					A			
Titanic Sulfate $Ti(SO_4)_2$		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			
		80	176		A	A	A	A			
		100	212				A	A			
		120	248				A	A			
Titanium Dioxide TiO_2		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	
		80	176			A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Titanous Sulfate $Ti_2(SO_4)_3$		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			
		80	176		A	A	A	A			
		100	212				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. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Titanium Tetrachloride $TiCl_4$		20	68	X		A		A	A	C	B
		40	104					A	A		
		60	140					A	A		
		80	176								
		100	212								
		120	248								
Toluene (Toluol) $C_6H_5CH_3$		20	68	X	X	A	A	A	A	X	X
		40	104			C	A	A			
		60	140			X	B	A			
		80	176				B	A			
		100	212				C	B			
		120	248					C			
Triacetin $C_3H_5O_3(COCH_3)_3$	Pure	20	68					A	B	A	B
		40	104					A			
		60	140					A			
		80	176					A			
		100	212					A			
		120	248								
Tributyl Phosphate $(C_4H_9O)_3PO$		20	68	X		A	A	A	X	B	X
		40	104			B	A	A			
		60	140			C	C	A			
		80	176				X	A			
		100	212								
		120	248								
Trichloro-acetic Acid $Cl_3C\text{-}COOH$		20	68	C		A	A	A	X	X	X
		40	104			A	B	A			
		60	140			B	C	A			
		80	176				X				
		100	212								
		120	248								
Trichloro-ethylene $ClHC=CCl_2$		20	68	X	X	B	A	A	A	X	X
		40	104			C	A	A	A		
		60	140			X	A	A	A		
		80	176				A	A	A		
		100	212				A	A			
		120	248					A			
Tricresyl Phosphate $(CH_3C_6H_4O)_3PO$	Pure	20	68	X	X	C	A	A	A	A	X
		40	104					A			
		60	140					A			
		80	176								
		100	212								
		120	248								
Triethanola-mine $(HOCH_2CH_2)_3N$		20	68			A	A	A	B	A	A
		40	104					A			
		60	140					A			
		80	176					A			
		100	212								
		120	248								
Triethylamine $(C_2H_5)_3N$		20	68				B	A	A		X
		40	104				B	A			
		60	140				X	A			
		80	176					A			
		100	212								
		120	248								
Trimethyl-propane C_6H_{14}		20	68	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
		80	176		A	A	A	A	A		A
		100	212				A	A			
		120	248					A			
Turpentine		20	68	A	A	B	A	A	A	B	B
		40	104	A		C	A	A	A		
		60	140	A		X	A	A	A		
		80	176				A	A	A		
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Uranium Oxide UO_2		20	68			A	A	A	A	A	A
		40	104				A	A	A	A	A
		60	140				A	A			
		80	176				A	A			
		100	212					A			
		120	248								
Urea $CO(NH_2)_2$ **(Urine)**	50	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	A	A			
		100	212				A	A			
		120	248				A	A			
Varsol		20	68			A	A	A	A	X	A
		40	104								
		60	140								
		80	176								
		100	212								
		120	248								
Vaseline (Petrolatum)		20	68	A		A	A	A	A	X	A
		40	104	A		A	A	A			
		60	140	A		A	A	A			
		80	176			C	A	A			
		100	212				A	A			
		120	248				A	A			
Vinegar		20	68	A	A	A	A	A	A	A	C
		40	104	A	A	A	A	A	A	A	
		60	140	A	A	A	A	A	A	A	
		80	176		B	A	A	A			
		100	212				B	A			
		120	248				B	A			
Vinyl Acetate $CH_3COOCH=CH_2$		20	68	X	X		A	A	X	B	X
		40	104				A	A		X	
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Water - Deionized, Distilled or Potable		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	A	A	A	A	A
		100	212				A	A			
		120	248				A	A			
Water - Sea		20	68	A	A	A	A	A	A	A	A
		40	104	A	A	A	A	A	A	A	B
		60	140	A	A	A	A	A	A	A	B
		80	176		A	A	A	A	A	A	
		100	212				A	A			
		120	248				A	A			
Water - Waste (Domestic Sewage)		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	A	A			
		100	212				A	A			
		120	248				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	A
		60	140	B	B	A	A	A		A	
		80	176				A	A		A	
		100	212				A	A			
		120	248				A	A			
Xylene $C_6H_4(CH_3)_2$		20	68	X	X	X	A	A	B	X	C
		40	104				A	A			
		60	140				A	A			
		80	176				A	A			
		100	212				A	A			
		120	248					A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Zinc Acetate $(CH_3COO)_2$ $Zn{\cdot}2H_2O$		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Zinc Bromide $ZnBr_2$	Satu	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								
		120	248								
Zinc Chloride $ZnCl_2$		20	68	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	
		80	176		A	A	A	A	A	A	
		100	212				A	A	A		
		120	248				A	A			
Zinc Cyanide $Zn(CN)_2$		20	68	A		A	A	A	A	A	A
		40	104				A	A			
		60	140				A	A			
		80	176								
		100	212								
		120	248								
Zinc Nitrate $Zn(NO_3)_2{\cdot}6H_2O$		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			
Zinc Sulfate $ZnSO_4$		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	A	A	A	A	B
		100	212				A	A	A		
		120	248				A	A			

Mixed Chemicals

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Hydrochloric Acid / **Allyl Chloride**	36% / 12 PPM	20	68	B	B	B	A	A	B	B	
		40	104	B	B	B	A	A	B	B	
		60	140			B	A	A	B	C	
		80	176				A	A	B		
		100	212				B	A	C		
		120	248				B	A			
Hydrochloric Acid / **Benzene**	36% / 54 PPM	20	68	B	B	B	A	A	B	B	
		40	104	B	B	B	A	A	B	B	
		60	140	B	B	B	A	A	B	C	
		80	176		B	B	A	A	B		
		100	212				B	A	C		
		120	248				B	A			
Hydrochloric Acid / **Chloro-benzene**	18% / 490 PPM	20	68	A	A	A	A	A	B	B	
		40	104	B	B	B	A	A	B	C	
		60	140	B	B	B	A	A	B		
		80	176		B	B	A	A	C		
		100	212				A	A			
		120	248				B	A			
Hydrochloric Acid / **Chloro-benzene**	36% / 890 PPM	20	68	B	C	B	A	A	B	C	
		40	104	B		B	A	A	C		
		60	140				A	A			
		80	176				A	A			
		100	212				B	A			
		120	248				C	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Hydrochloric Acid / **Ferric Chloride**	25 (1:1) 28	20	68	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	
		80	176		A	A	A	A	B	B	
		100	212		B	B	A	A	C		
		120	248				B	A			
Hydrochloric Acid / **Ferrous Chloride**	20 (1:1) 28	20	68				A	A	A	A	
		40	104				A	A	A	A	
		60	140				A	A	A	A	
		80	176				A	A	B	B	
		100	212				A	A	C		
		120	248				A	A			
Hydrochloric Acid / **Ferrous Chloride**	25 (1:1) 28	20	68				A	A		A	
		40	104				A	A		A	
		60	140				A	A		A	
		80	176				A	A		B	
		100	212				A	A			
		120	248				A	A			
Hydrochloric Acid / **Hydrofluoric Acid**	10 (1:1) 15	20	68	A	A		A	A			
		40	104	B	B		A	A			
		60	140	B	B		A	A			
		80	176	X	X		A	A			
		100	212				A	A			
		120	248				A	A			
Hydrochloric Acid / **Hydrofluoric Acid**	18 (1:1) 20	20	68	A	A		A	A			
		40	104	B	B		A	A			
		60	140	B	B		A	A			
		80	176		B		A	A			
		100	212				A	A			
		120	248				B	A			
Hydrochloric Acid / **Nitric Acid**	20 100g 50 5g	20	68	A	A	B	A	A	A	B	
		40	104	A	A	C	A	A	B		
		60	140	B	B	X	A	A			
		80	176		C		A	A			
		100	212				A	A			
		120	248				B	A			
Hydrochloric Acid / **Ortho-chloro-phenal**	36 % 170 PPM	20	68	B	B	B	A	A	B	B	
		40	104	B	B	B	A	A	B	B	
		60	140	B	B	B	A	A	B	C	
		80	176				A	A	B		
		100	212				B	A	C		
		120	248				B	A			
Hydrochloric Acid / **Sulfuric Acid**	36 (1:1) 98	20	68	B	B	X	A	A	X	X	X
		40	104	X	X		A	A			
		60	140				A	A			
		80	176				B	A			
		100	212				C	A			
		120	248				X	A			
Hydrochloric Acid / **Sulfuric Acid**	20 100g 5 5g	20	68	A	A	A	A	A	A	A	
		40	104	A	B	A	A	A	A	A	
		60	140	B	B	A	A	A	A	A	
		80	176		B	B	A	A	A	B	
		100	212				A	A			
		120	248				A	A			
Hydrochloric Acid / **Sulfuric Acid**	36 144g 98 13g	20	68	A	A	A	A	A	X	X	X
		40	104	A	A	A	A	A			
		60	140	B	B	B	A	A			
		80	176		B		A	A			
		100	212				A	A			
		120	248				B	A			
Chromic Acid / **Ammonium Fluoride**	250 8 g/l	20	68	A	A	X	A	A	X	X	
		40	104	A	A		A	A			
		60	140	B	B		A	A			
		80	176		C		A	A			
		100	212				A	A			
		120	248				A	A			

Chemical	Concentration (%)	Temp. °C	Temp. °F	PVC	CPVC	PP	PVDF	PTFE/PFA	VITON®	EPDM	NITRILE
Chromic Acid	220	20	68	A	A	X	A	A	X	X	
		40	104	B	B		A	A			
Chromium Sulfate	1	60	140	B	B		A	A			
		80	176		B		A	A			
Sodium Silicofluroide	12 g/l	100	212				A	A			
		120	248				A	A			
Chromic Acid	350	20	68	A	A	X	A	A	X	X	
		40	104	B	B		A	A			
Sodium Silicofluroide	17	60	140	C	C		A	A			
		80	176				A	A			
Oxalix Acid	1 g/l	100	212				A	B			
		120	248				A	B			
Nitric Acid	15 (1:1)	20	68	A	A	A	A	A			
		40	104	A	A	A	A	A			
Hydrofluoric Acid		60	140	B	B	B	A	A			
	3	80	176	X	X		A	A			
		100	212				A	A			
		120	248				A	A			
Nitric Acid	15 (1:1)	20	68	A	A	A	A	A	A	A	
		40	104	A	A	A	A	A	A	B	
Hydrofluoric Acid		60	140	B	C	X	A	A	B		
	5	80	176	X	X		A	A	B		
		100	212				A	A	C		
		120	248				B	A	X		
Nitric Acid	15 (1:1)	20	68	A	B	B	A	A			
		40	104	B	C	B	A	A			
	10	60	140	B	C		A	A			
Hydrofluoric Acid	15 (1:1)	80	176	X	X		A	A			
		100	212				B	A			
	15	120	248				B	A			
Nitric Acid	5 (1:1)	20	68	A	A	A	A	A			
		40	104	B	B	B	A	A			
		60	140	B	B	B	A	A			
Hydrofluoric Acid	20	80	176	X	B	C	A	A			
		100	212				B	A			
		120	248				B	A			
Nitric Acid	100	20	68				B	A			
		40	104				C	C			
Hydrofluoric Acid	55	60	140								
		80	176								
Phosphoric Acid	100	100	212								
		120	248								
Nitric Acid	50 100g	20	68	B	B	B	A	A			
		40	104	X	X	X	A	A			
		60	140				A	A			
Sulfuric Acid	50 100g	80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Sulfuric Acid	2 (1:1)	20	68	A	A	X	A	A	A	B	
		40	104	A	A		A	A	B		
		60	140	B	B		A	A	C		
Chromic Acid	1	80	176		B		A	A	X		
		100	212		C		A	A			
		120	248				A	A			
Sulfuric Acid	10 (1:1)	20	68	A	B	X	A	A	A	B	
		40	104	B	B		A	A	B		
		60	140	C	X		A	A	C		
Chromic Acid	10	80	176				A	A			
		100	212				A	A			
		120	248				A	A			
Sulfuric Acid	10 (1:1)	20	68	A	B	X	A	A	B	C	
		40	104	B	B		A	A	C		
		60	140	C	X		A	A	X		
Chromic Acid	25	80	176				A	A			
		100	212				A	A			
		120	248				B	A			

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

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