

CHEMICAL RESISTANCE OF PLASTIC PIPING MATERIALS

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Foreword

This technical report was developed and published with the technical help and financial support of the members of the Plastics Pipe Institute (PPI). These members have shown their commitment to developing and improving quality products by assisting standards development organizations in the development of standards, and also by developing design aids and reports to help engineers, code officials, specifying groups, contractors and users.

The purpose of this technical report is to provide information on the transport of various chemicals using plastic piping materials.

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CHEMICAL RESISTANCE OF PLASTIC PIPING MATERIALS

1.0 INTRODUCTION

This technical report has been developed as an informative guide on the resistance of plastic piping and fitting materials to chemical attack.

It is divided into several sections:

- Section 2: How to Interpret the chemical resistance rating provided in Table 3
- Section 3: Chemical resistance in general, and considerations for end use applications
- Section 4: Types of chemical attack on plastics
- Section 5: Other considerations
- Section 6: Chemical Resistance Data for Plastic Piping in Non-Pressure Applications and Data Table
- Section 7: Additional resources

Listings of chemical resistance data are presented in Table 3 for common plastic piping materials applicable to **non-pressure applications**.

Determination of suitability for specific applications under stress (e.g., pressurized service) is beyond the scope of this report. Users should contact the specific pipe or fitting manufacturer for recommendations on pressurized applications.

Note 1: Safety Consideration: Additional engineering and safety considerations exist when transporting liquids above their atmospheric boiling temperature and gases. Both situations constitute piping under pressure and, due to the stored energy of compressed gases, pose a significant danger potentially leading to injury or death.

Note 2: Drinking water, also known as potable water, is water that is safe to drink or to use for food preparation. Across North America, the majority of the drinking water that is provided in public water systems is treated with a disinfectant to control the growth of harmful microorganisms. Potable water disinfectants include chlorine, chloramines, and rarely, chlorine dioxide. Piping materials intended for treated water must be resistant to such disinfectants at various levels, as described in product standards.

For specific information about the resistance of crosslinked polyethylene (PEX) to disinfectants, please see:

- PPI TN-53 *Guide to Chlorine Resistance Ratings of PEX Pipes and Tubing for Potable Water Applications*,
- PPI TN-67 *Chlorine Dioxide and Plastic Hot- And Cold- Water Plumbing Distribution Pipes*, and

- PPI Statement A - *Relative Oxidative Aggressiveness of Chloramines and Free Chlorine Disinfectants on Crosslinked Polyethylene (PEX) Pipes used in Treated Potable Water*

For specific information about the resistance of high-density polyethylene (HDPE) to disinfectants, please see:

- PPI TN-44 *Long Term Resistance of AWWA C906 Polyethylene (PE) Pipe to Potable Water Disinfectants* and
- PPI TN-49 *Recommendations for AWWA C901 Service Tubes in Potable Water Applications*

For specific information about the resistance of chlorinated polyvinyl chloride (CPVC) to disinfectants, please see *Section 4: Effects of Potable Water Disinfectants on CPVC* of PPI TN-62 *Suitability and Fitness of CPVC Piping Systems for Commercial Building Applications*.

2.0 HOW TO INTERPRET THE RATINGS SHOWN IN TABLE 3

The chemical resistance ratings for the pipe and fitting materials and chemicals provided in Table 3 are neither authoritative nor exhaustive. They are only intended as starting point for a proper engineering evaluation. The suitability of a pipe or fitting material in a given application must include the appropriate engineering evaluation of the application including the factors (e.g., temperatures, pressure, chemical concentrations, material stress and expected service life) as discussed in other sections of this document.

As the ratings which are presented are a consolidation of laboratory and field experience from over 50 years of plastic industry experience and not the result of a systematic study, inconsistencies in results may appear in Table 3. It is important to note that a rating (e.g., “R- Resistance”) to a certain temperature or concentration does not imply a lack of resistance above that temperature or concentration. The literature and manufacturers may have other data or experience that supports the use of the material at higher temperatures and this evidence should be considered as part of the engineering analysis.

It is strongly recommended that each user satisfy themselves by means of appropriate tests or from previous experience before a particular plastic piping system is used to transport a specific chemical under the particular conditions of interest. The information in this report is intended to give general guidance only in making tests, and then assessing the results of such tests and experiences.

3.0 CHEMICAL RESISTANCE IN GENERAL

Plastic pipe and fitting materials are generally resistant to attack from many chemicals. This inherent property makes them suitable for use in numerous fluid and gas transport applications.

However, there are certain chemicals that may damage plastic pipes, either through exposure on the outside of the pipe to chemicals, on the internal surface of the pipe during the transport of such chemicals, or with exposure to inert fluids containing chemicals in various concentrations.

Each material has unique resistance to chemicals in various situations. The suitability of a pipe or fitting system for use in a particular fluid or gas application is a function of several factors, described below:

3.1. Pipe and Fitting Materials

The specific plastic material used in pipe and fittings impacts its chemical resistance. This report includes the materials listed in Table 1.

Table 1: Plastic Materials Identification

ABS	acrylonitrile-butadiene-styrene
CPVC	chlorinated polyvinyl chloride
PP	polypropylene
PP-R ¹	polypropylene random copolymer
PP-RCT ¹	polypropylene random copolymer with modified crystallinity and temperature resistance
PVC	polyvinyl chloride
PE	polyethylene (representative of medium density polyethylene [MDPE] and high density polyethylene [HDPE]; not representative of low density polyethylene [LDPE])
PE-RT ²	polyethylene of raised temperature resistance
PB	polybutylene
PVDF	polyvinylidene fluoride
PEX	crosslinked polyethylene
PA11/ PA12	polyamide 11 / polyamide 12
PA66	polyamide 66
PSU	polysulfone
PPSU	polyphenylsulfone

¹ PP-R and PP-RCT are chemically similar to PP and are grouped together in Table 3; they may be assumed to have similar chemical resistance

² PE-RT is chemically similar to MDPE and HDPE and are grouped together in Table 3; they may be assumed to have similar chemical resistance

3.2. Product Design and Joining Systems

Piping dimensions, including wall thickness, construction, and composition (layers, fillers, etc.), can affect chemical resistance.

The type of joining system can also affect the performance of the system in chemical handling applications. Heat fusion and solvent cementing do not introduce different materials into the system. The resistance of solvent cement to certain chemicals can vary from grade to grade.

Other components and appurtenances in the piping system can have different chemical resistances. Certain types of mechanical joints include gaskets using elastomers with their own unique resistances. Some piping systems include other plastic or non-plastic materials used as mechanical fitting components which can have different chemical resistance.

3.3. Operating Conditions - Internal and External

- Chemicals or mixtures of chemicals, and their concentrations.
- Operating temperature — maximum, minimum, and cyclical variations.
- Operating pressure or applied stress — maximum, minimum and cyclical variations.

4.0 TYPES OF CHEMICAL ATTACK ON PLASTICS

In general, chemicals that affect plastics do so in several ways, including solvation, chemical attack, and environmental stress cracking.

4.1. Permeation, Swelling, Plasticization, Solvation, and Extraction

Permeation is the transport of chemicals through the pipe wall via diffusion through the free volume of the polymer matrix without significant change in the material properties. Permeability may be of interest in situations where the pipe is to function as a liner pipe for a less resistant material (e.g., fiberglass or steel), where the pipe is transporting particularly hazardous substances, or where the pipe is installed in contaminated soil.

Permeability of specific plastic piping materials is not addressed in this document. PPI Statement N - *Barrier Properties of Plastic Pipe Used for Potable Water Service*, states “In areas of known or suspected contamination, the design of the distribution system should be based on a careful analysis of the situation.

Appropriate technical data and individual manufacturers' recommendations should be consulted on the overall design of a pipe system for these systems."

Note 3: See also *PPI Comments on Permeation of Water Pipes and on the AWWA-RF Report on Hydrocarbons* at [link](#)

Absorption occurs when a chemical diffuses into the free volume of the polymer matrix and accumulates there. This may result in one or more of the following effects: swelling, plasticization, or solvation. In the case of absorption, physical properties may be affected, but the polymer molecule itself is not chemically changed, degraded or destroyed.

Swelling is an increase in the bulk volume of a material caused by the absorption of liquids or vapors from the environment. It may or may not be accompanied by plasticization, which results in softening and loss of strength in the material.

In extreme cases, the solvating compound can fully dissolve the plastic material.

Sometimes the polymer itself may not be soluble, but it may contain a soluble formulary ingredient that may be extracted from the polymer compound. This is more common in plasticized materials where loss of plasticizer may result in embrittlement. It is not common in plastic materials used for pipes and fittings and is not addressed in this document.

In gas or vapor transmission service, there may be a very slight loss of contents through the pipe wall.

Lastly, a solvating or permeating chemical entrained in the material may be released when heat fusion or solvent cement joining is performed. Thus, heat fusion (e.g., welding) or solvent cement joining may be unreliable if performed on permeated pipes. Caution should be used in performing these processes if solvation or permeation are suspected.

4.2. Direct Chemical Attack

Direct chemical attack occurs when exposure to a chemical causes a chemical alteration of the polymer molecules by chain scission, crosslinking, oxidation, or substitution reactions.

Direct chemical attack frequently causes a severe reduction of mechanical physical properties such as tensile strength, ductility, burst pressure, and impact resistance.

Chemical resistance may vary greatly from one plastic material to another (i.e., PVC, ABS, PE, etc.), and also among different cell classifications of the same plastic type (e.g., PVC 1120 to PVC 2110, PE 3608 to PE 4710, etc.). There may also be slight variations among commercial products having the same cell classification, based on compound ingredients known as stabilizers or “additive packages”.

The chemical resistance of plastic piping and fittings is basically a function of the chemical resistance of the plastic material, including additives and other ingredients in the final compound. In general, the fewer filler ingredients used, the better the chemical resistance.

Plastic pipes with significant filler percentages may be susceptible to chemical attack whereas an unfilled material may be affected to a lesser degree or not at all.

4.3. Environmental Stress Cracking

Environmental stress cracking (ESC) is defined as the “development of cracks in a material that is subjected to stress or strain in the presence of specific chemicals”, as per ASTM F412 *Standard Terminology for Plastic Piping Systems*.

Environmental stress cracking is a fundamentally different phenomenon than chemical attack, even though they may present similarly (e.g., crazing or whitening of parts, sloughing of material, minor crack formation). ESC does not result in chemical alteration of the polymer molecule. ESC is caused by a chemical agent in combination with inherent and applied stresses. It can often be minimized with proper installation. Direct chemical attack does not require any stress or strain on the material for it to occur, although it may be accelerated in conditions of high stress or strain.

5.0 OTHER CONSIDERATIONS

5.1. Chemical Families

While the effect of each individual chemical is specific, some chemicals can be grouped into general categories based on similarities in chemical characteristics (acids, bases, alcohols, etc.). For example, water-based (aqueous) solutions of neutral inorganic salts generally have the same effect on plastic piping materials as water alone; thus, sodium chloride, potassium alum, calcium

chloride, copper sulfate, potassium sulfate and zinc chloride solutions have the same effect as water.

However, at elevated temperatures or high concentrations, some salt solutions may attack some plastic materials through either oxidation or chemical substitution when they would be benign at lower temperatures and concentrations.

5.2. Accelerating factors (concentration, temperature, stress)

Generally, the resistance of a particular plastic to a specific chemical will decrease with an increase in concentration. For example, for some materials, dilute sulfuric acid may be acceptable, whereas 95% sulfuric acid may not.

The resistance of a particular plastic to a specific chemical generally decreases as temperature increases because the rate of chemical phenomenon (i.e., reactivity, permeation rate, solvation) tends to increase. This rate increase is logarithmic with respect to temperature over most plastic functional temperatures and generally follows to the Arrhenius equation.

The chemical resistance of a particular plastic generally decreases with increasing applied stress. This is commonly seen when the presence of certain chemicals causes environmental stress cracking where unstressed parts exhibit good chemical resistance.

The chemical resistance of a particular plastic generally decreases where temperature or applied stress are varied or cycled. These effects can be greater overall in combination. Testing should be conducted if the system is expected to perform across a wide range of temperatures and stresses to determine the overall combined effect.

5.3. Combinations of Chemicals

In some cases, combinations of chemicals may have a synergistic effect on damaging a plastic material, and a mixture may cause damage where the individual chemicals do not. It cannot be assumed that an individual chemical's lack of effect would apply for combinations that include several chemicals. When the possible combined effect of several chemicals is unknown, the material should be tested in the complete chemical mixture(s) in question.

5.4. Multi-Layered (Composite) Piping

Some piping products utilize a multi-layered (composite) construction, in which the pipe wall is constructed of layers of different materials. The layers may consist of both plastic and non-plastic.

For example, PE/AL/PE and PEX/AL/PEX pipes contain mid-wall aluminum layers. Examples of all-plastic composite pipes include PVC/ABS/PVC and fiber-core PP-R or PP-RCT pipes. Layered composite material pipes may have chemical resistance that differs from the chemical resistance of the individual materials.

5.5. Rate of Chemical Attack

Chemicals that attack plastics do so at a certain rate, some slowly and some more quickly. But usually, any chemical attack is increased when temperature or stress are increased, or when temperature or stress are varied. The particular rate of chemical attack must be taken into consideration in the life-cycle evaluation for a particular application. Each combination of material cost, installation cost and service life must be evaluated and judged on its own merits.

In certain cases involving a slow rate of chemical attack, particularly when the application will be pressurized, simple immersion data, like that represented in Table 3, may not adequately characterize performance throughout the intended design life. Longer-term testing to replicate service conditions is advisable to fully measure the effects of these chemicals.

6.0 CHEMICAL RESISTANCE DATA FOR PLASTIC PIPING IN NON-PRESSURE APPLICATIONS AND DATA TABLE

When plastic pipes come into contact with chemical agents it is important to know how the pipe may be affected. For non-pressure applications, where the pipe is not subject to continuous internal pressure or stress, chemical immersion test data may provide suitable information. The pipe manufacturer may have additional data from similar tests, or information on previous installations under similar field conditions.

The following cautions apply to Table 3 *List of Chemical Resistances*:

- *Data Sources.* The information in Table 3 has been obtained from numerous sources. The data are based primarily on plastic material test specimens that have been immersed in the chemical and evaluated, and to a lesser degree, on field-experience. In most cases, detailed information on the test conditions (e.g., exposure time), and on test results (e.g., change in weight, change in volume, and change in

strength) was not available. Therefore, this information is best used only for comparison of different plastic materials.

- *Combinations of Chemicals.* Chemicals that individually do not have an effect may affect the pipe if combined with certain other chemicals. The list of possible combinations of chemicals is endless. Table 3 does not address chemical combinations.
- *Composite Piping.* Layered composite piping may have chemical resistance that differs from that of the individual materials in the layers. Table 3 is not applicable to layered composite piping products.
- *Applicability to fiberglass and filled materials.* Table 3 is not applicable to reinforced epoxy resin (fiberglass) pipes, and to plastic pipes containing significant percentages of filler materials.
- *Concentrations.* Where no concentrations are given (indicated as 'P'), the commercially pure material is indicated, except in the case of solids where saturated aqueous solutions are indicated.

See Table 2 for the **Resistance Codes** which are used throughout Table 3.

Table 2: Resistance Codes

Code	Meaning	Typical Result
R to xx°F	Plastic material is generally Resistant up to the temperature (°F) indicated by code and may have limited resistance at higher temperatures	Swelling < 3% or weight loss < 0.5% and elongation at break not significantly changed Typical performance properties not significantly affected
L to xx°F	Plastic material has Limited resistance at the temperature (°F) indicated by code. Compatibility at lower temperatures should not be assumed	Material may experience swelling in the range of 3 - 8% or weight loss of 0.5 - 5% and/or reduction in elongation at break by < 50% Some effect on performance properties
N	Plastic material is Not resistant.	Material may experience swelling > 8% or weight loss > 5% and/or reduction in elongation at break by > 50%
P	Pure Concentration	
—	Data not available Check with piping manufacturer	

Chemicals that do not normally affect the properties of an unstressed plastic may cause completely different behavior (such as stress cracking) when under mechanical stress, such as constant internal pressure or mechanical stress cycles.

Unstressed immersion test chemical resistance information is applicable only when the plastic pipe will not be subject to mechanical load or stress that is constant, or cycles frequently.

When the pipe will be subject to a continuous applied mechanical stress or to combinations of chemicals, testing that duplicates the expected field conditions, as closely as possible, should be performed on representative samples of the pipe product to properly evaluate that plastic pipe for use in this application.

7.0 OTHER RESOURCES

The following references provide additional information on chemical compatibility of plastic piping and may provide useful guidance:

- [*PPI Comments on Permeation of Water Pipes and on the AWWA-RF Report on Hydrocarbons*](#)
- [*PPI Statement A – Relative Oxidative Aggressiveness of Chloramines and Free Chlorine Disinfectants on Crosslinked Polyethylene \(PEX\) Pipes used in Treated Potable Water*](#)
- [*PPI Statement N – Barrier Properties of Plastic Pipe Used for Potable Water Service*](#)
- [*PPI TN-11 – Suggested Temperature Limits for Thermoplastic Pipe Installation and for Non-Pressure Pipe Operation*](#)
- [*PPI TN-44 – Long Term Resistance of AWWA C906 Polyethylene \(PE\) Pipe to Potable Water Disinfectants*](#)
- [*PPI TN-49 – Recommendations for AWWA C901 Service Tubes in Potable Water Applications*](#)
- [*PPI TN-52 – Guide to High-Temperature Applications of Non-Potable PEX Pipe and Tubing Systems*](#)
- [*PPI TN-53 – Guide to Chlorine Resistance Ratings of PEX Pipes and Tubing for Potable Water Applications*](#)
- [*PPI TN-67 – Chlorine Dioxide and Plastic Hot- And Cold- Water Plumbing Distribution Pipes*](#)
- [*ISO TR 10358 Plastics pipes and fittings for industrial applications — Collection of data on combined chemical-resistance*](#)

May not be fully applicable to pressurized applications

Table 3: List of Chemical Resistances (°F)

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Acetaldehyde CAS# 75-07-0 CH ₃ CHO	40%	---	N	---	L to 73	R to 73	---	N	R to 73	---	---	---	---
	Pure	---	N	R to 140	N	L to 73	L to 73	---	L to 140	L to 176	---	R to 73	---
Acetamide CAS# 60-35-5 CH ₃ CONH ₂	5%	R to 120	---	R to 140	---	R to 140	---	R to 75	R to 140	---	---	---	---
Acetic Acid CAS# 64-19-7 CH ₃ COOH	vapor	R to 120	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	10%	---	R to 180	---	---	---	---	R to 248	R to 180	R to 176	---	---	---
	25%	N	N	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	40%	---	---	---	---	---	---	R to 140	---	---	---	---	---
	50%	---	---	---	---	---	---	R to 140	---	L to 68	---	---	---
	60%	N	N	R to 180	R to 73	R to 73	R to 73	R to 104	---	---	---	---	---
	85%	N	N	R to 120	R to 73	R to 73	R to 73	---	---	---	---	R to 167	R to 167
glacial	N	N	R to 120	R to 73	R to 73	R to 73	R to 104	R to 68	---	---	R to 167	R to 167	
Acetic Anhydride CAS# 108-24-7 (CH ₃ CO) ₂ O	---	N	N	R to 73	N	R to 73	R to 140	N	R to 73	L to 68	---	---	---
Acetone CAS# 67-64-1 CH ₃ COCH ₃	5%	N	R to 180	R to 73	N	L to 73	R to 140	R to 212	L to 73	L to 140	---	N	---
	10%	---	L to 180	---	---	---	---	R to 122	---	---	---	---	---
	100%	---	N	---	---	---	---	---	---	---	---	---	---
Acetophenone CAS# 98-86-2 C ₆ H ₅ COCH ₃	---	N	N	R to 120	--	R to 73	---	R to 68	R to 73	---	---	---	---
Acetyl Chloride CAS# 75-36-5 CH ₃ COCl	---	N	N	---	N	---	---	R to 125	---	---	---	---	---
Acetylene CAS# 74-86-2 HC≡CH	gas 100%	R to 73	N	R to 73	N	R to 73	L to 73	R to 250	R to 73	R to 140	---	---	---
Acetylnitrile CAS 75-05-8 CH ₃ C≡N	---	---	N	---	N	---	---	---	---	---	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Acrylic Acid CAS# 79-10-7 H ₂ C=CHCOOH	97%	---	N	---	N	R to 140	---	---	R to 140	---	---	---	---
Acrylonitrile CAS# 107-13-1 H ₂ C=CHC≡N	---	---	N	---	N	R to 140	---	R to 75	R to 140	---	---	---	---
Adipic Acid CAS#124-04-9 COOH(CH ₂) ₄ COOH	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 73	R to 176	R to 140	---	---	---	---
Allyl Alcohol CAS# 107-18-6 CH ₂ = CHCH ₂ OH	96%	---	L to 73	R to 140	R to 73	N	R to 140	R to 125	L to 100	---	---	---	---
Allyl Chloride CAS# 107-05-1 CH ₂ =CHCH ₂ Cl	--	---	N	---	N	L to 73	---	R to 140	L to 73	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 68	---	---	---	---	---
Aluminum Ammonium Sulfate (Alum) CAS# 7784-25-0 AlNH ₄ (SO ₄) ₂ • 12H ₂ O	Saturated	---	R to 180	R to 140	R to 140	R to 140	---	---	R to 140	---	---	---	---
Aluminum Chloride CAS# 7446-70-0 AlCl ₃	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Aluminum Fluoride Anhydrous CAS# 7764-18-1 AlF ₃	Saturated	R to 160	R to 180	R to 180	R to 73	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Aluminum Hydroxide CAS# 21645-51-2 Al(OH) ₃	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Aluminum Nitrate CAS# 13473-90-0 Al(NO ₃) ₃ • 9H ₂ O	Saturated	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Aluminum Oxychloride CAS# 1327-41-9	--	---	R to 180	R to 180	R to 140	---	R to 140	R to 125	---	---	---	---	---
Aluminum Potassium Sulfate (Alum) CAS# 10043-67-1 AlK(SO ₄) ₂ • 12H ₂ O	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
Aluminum Sulfate CAS# 10043-01-3 Al ₂ (SO ₄) ₃	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	C to 73	R to 212	R to 140	R to 194	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Ammonia Gas CAS# 7664-41-7 NH ₃	100%	N	N	R to 140	R to 140	R to 140	R to 140	---	R to 140	R to 140	---	---	---
Ammonium Acetate CAS# 631-61-8 CH ₃ COONH ₄	Saturated	R to 120	R to 180	R to 73	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
Ammonium Bifluoride CAS# 1341-49-7 NH ₄ HF ₂	Saturated	---	R to 180	R to 180	R to 140	---	R to 140	R to 150	R to 140	---	---	---	---
Ammonium Bisulfide CAS# 12124-99-1 (NH ₄)HS	---	---	---	---	R to 140	---	---	---	---	---	---	---	---
Ammonium Carbonate CAS# 506-87-6 (NH ₄) ₂ CO ₃	Saturated	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Ammonium Chloride CAS# 12125-02-9 NH ₄ Cl	Saturated	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ammonium Dichromate CAS# 7789-09-5 (NH ₄) ₂ Cr ₂ O ₇	--	---	R to 73	---	R to 73	---	---	R to 250	---	---	---	---	---
Ammonium Fluoride CAS# 12125-01-8 NH ₄ F	10%	R to 120	R to 180	R to 212	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
	25%	R to 120	R to 180	R to 212	L to 140	R to 140	R to 73	---	R to 140	---	---	---	---
Ammonium Hydroxide CAS# 1336-21-6 NH ₄ OH	10%	R to 120	N	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	30%	---	---	---	---	R to 140	---	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	---	R to 194	---	---	---	---
Ammonium Metaphosphate CAS# 13446-46-3 NH ₃ HPO ₃	Saturated	--	--	R to 212	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Ammonium Nitrate CAS# 6484-52-2 NH ₄ NO ₃	Saturated	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ammonium Persulfate CAS# 7727-54-0 (NH ₄) ₂ S ₂ O ₈	---	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ammonium Phosphate (Monobasic) CAS# 7722-76-1 NH ₄ H ₂ PO ₄	---	R to 120	L to 73	R to 212	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	R to 199	R to 199

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Ammonium Sulfate CAS# 7783-20-2 (NH ₄) ₂ SO ₄	Saturated	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ammonium Sulfide CAS# 12135-76-1 (NH ₄) ₂ S	dilute	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 200	R to 140	---	---	---	---
	Saturated	---	---	---	---	R to 140	---	R to 125	---	---	---	---	---
Ammonium Thiocyanate CAS# 1762-95-4 NH ₄ SCN	50-60%	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 73	---	---	---	---
Amyl Acetate CAS# 628-63-7 CH ₃ COOC ₅ H ₁₁	--	N	N	N	N	R to 73	---	R to 122	R to 73	C to 194	---	---	---
Amyl Alcohol CAS# 75-41-0 C ₅ H ₁₁ OH	--	---	N	---	N	R to 140	R to 140	R to 212	R to 140	---	R to 73	---	---
	100%	---	---	---	---	---	L to 140	---	---	---	---	---	---
n-Amyl Chloride CAS# 543-59-9 CH ₃ (CH ₂) ₃ CH ₂ Cl	--	N	N	N	N	L to 73	---	R to 285	L to 73	---	---	---	---
Aniline CAS# 62-53-3 C ₆ H ₅ NH ₂	--	N	N	---	N	R to 73	L to 140	R to 68	L to 140	---	---	---	---
Aniline Chlorohydrate	--	---	N	---	N	L to 73	N	---	L to 73	---	---	---	---
Aniline Hydrochloride CAS# 142-04-1 C ₆ H ₅ NH ₂ • HCl	Saturated	---	N	---	N	R to 140	N	R to 75	R to 140	---	---	---	---
Anthraquinone CAS# 84-65-2 C ₁₄ H ₈ O ₂	--	---	R to 180	---	R to 140	L to 73	L to 73	---	L to 73	---	---	---	---
Anthraquinone Sulfonic Acid CAS# 82-49-5 C ₁₄ H ₇ O ₂ • SO ₃ • H ₂ O	--	---	R to 180	R to 73	R to 140	R to 140	L to 73	---	L to 73	---	---	---	---
Antimony Trichloride CAS# 10025-91-9 SbCl ₃	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 140	R to 140	---	---	---	---
Aqua Regia CAS# 8007-56-5 (Nitrohydrochloric Acid) HCl+HNO ₃	--	N	R to 73	N	L to 73	N	N	L to 194	N	---	---	N	---
Arsenic Acid CAS# 7778-39-4 H ₃ AsO ₄	80%	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Asphalt CAS# 8052-42-4	--	---	N	R to 73	N	R to 73	R to 140	R to 250	R to 73	---	---	---	---
Barium Carbonate CAS# 513-77-9 BaCO ₃	Saturated	R to 120	R to 180	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Barium Chloride CAS# 10361-37-2 BaCl ₂ • 2H ₂ O	Saturated	R to 120	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	R to 194	---	---	---
Barium Hydroxide CAS# 17194-00-2 Ba(OH) ₂	30%	---	---	---	---	R to 140	---	R to 250	R to 140	---	---	---	---
	Saturated	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 212	---	---	---	---
Barium Nitrate CAS# 10022-31-8 Ba(NO ₃) ₂	Saturated	R to 73	R to 180	R to 140	R to 73	R to 140	---	R to 250	R to 140	---	---	---	---
Barium Sulfate CAS# 7727-43-7 BaSO ₄	Saturated	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Barium Sulfide CAS# 21109-95-5 BaS	Saturated	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 248	---	---	---	---
Beer	--	R to 120	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 140	R to 68	---	---	---
Beet Sugar Liquors	--	---	R to 180	R to 180	R to 140	R to 73	R to 140	R to 230	R to 73	---	---	---	---
Benzaldehyde CAS# 100-52-7 C ₆ H ₅ CHO	10%	N	N	R to 73	R to 73	R to 73	L to 73	L to 70	R to 73	R to 104	---	---	---
Benzene CAS# 71-43-2 C ₆ H ₆	--	N	N	N	N	N	N	N	N	---	R to 73	N	---
Benzene Sulfonic Acid CAS# 98-11-3 C ₆ H ₅ SO ₃ H	10%	---	R to 180	R to 180	R to 140	R to 73	---	R to 175	R to 73	---	---	---	---
	10%+	---	N	---	N	---	---	R to 125	---	---	---	---	---
Benzoic Acid CAS# 65-85-0 C ₆ H ₅ COOH	100%	R to 160	R to 180	R to 73	R to 140	R to 140	R to 140	R to 230	R to 140	---	---	---	---
Benzoyl Chloride CAS# 99-88-4 C ₆ H ₅ COCl	Sat. Sol.	---	---	---	---	---	---	L to 68 R to 170 with sunlight protection or pigmented pipe	---	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Benzyl Alcohol CAS# 100-51-6 C ₆ H ₅ CH ₂ OH	--	---	N	R to 120	N	R to 140	---	R to 250	R to 140	R to 68	---	---	---
Benzyl Chloride CAS# 100-44-7 C ₇ H ₇ Cl	--	---	N	---	---	---	---	R to 285	R to 140	---	---	---	---
Bismuth Carbonate CAS#5892-10-4 (BiO) ₂ CO ₃	Saturated	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Black Liquor	Saturated	---	R to 180	R to 140	R to 140	R to 120	R to 140	---	R to 120	---	---	---	---
Bleach-See Sodium Hypochlorite													
Borax CAS# 1303-96-4 Na ₂ B ₄ O ₇ • 10H ₂ O	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 275	R to 140	---	---	---	---
Boric Acid CAS# 10043-35-3 H ₃ BO ₃	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	R to 113	---
Bromic Acid CAS# 15541-45-4 HBrO ₃	Saturated	---	R to 180	N	R to 140	N	R to 140	R to 212	N	---	---	---	---
	10%	---	---	---	---	R to 140	---	---	---	---	---	---	---
Bromine CAS# 7726-95-6 Br ₂	Liquid	R to 73	N	N	N	N	N	R to 248	N	N	---	---	---
	vapor 25%	---	R to 180	N	R to 140	N	---	---	N	---	---	---	---
Bromine Water	Saturated	---	R to 180	N	R to 140	N	L to 73	R to 176	N	---	---	---	---
Bromobenzene CAS# 108-86-1 C ₆ H ₅ Br	--	---	N	---	N	---	---	R to 150	---	---	---	---	---
Bromotoluene (Benzyl bromide) CAS# 95-46-5 C ₆ H ₅ CH ₂ Br	--	---	N	L	N	---	---	R to 175	---	---	---	---	---
Butadiene CAS# 106-99-0 H ₂ C=CHCH=CH ₂	50%	---	---	N	R to 140	R to 73	---	---	R to 73	---	---	---	---
	Gas	---	---	---	---	---	---	R to 212	---	---	---	---	---
Butane CAS# 106-97-8 C ₄ H ₁₀	50%	---	R to 180	R to 140	R to 140	R to 140	N	---	R to 140	---	---	---	---
	Gas	---	---	---	---	---	---	R to 68	---	---	---	---	---
n-Butanol CAS# 71-36-3 C ₄ H ₉ OH	Liquid	---	L to 73	---	---	---	---	R to 140	---	---	---	N	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Butyl Acetate CAS# 123-86-4 CH ₃ COOCH ₂ CH ₂ CH ₂ CH ₃	100%	N	N	L to 73	N	L to 73	L to 73	L to 104	L to 73	R to 194	---	---	---
Butyl Alcohol CAS# 71-36-3 CH ₃ (CH ₂) ₂ CH ₂ OH	--	---	L to 73	R to 180	R to 140	R to 140	R to 140	R to 200	R to 140	L to 104	---	R to 73	---
Butyl Cellosolve CAS# 111-76-2 HOCH ₂ CH ₂ O(CH ₂) ₃ CH ₃	--	---	N	---	R to 73	---	---	---	---	---	---	---	---
n-Butyl Chloride CAS# 109-69-3 C ₄ H ₉ Cl	--	N	N	---	---	---	---	---	---	---	---	---	---
Butyl Glycol CAS# 111-76-2 HOCH ₂ CH ₂ O(CH ₂) ₃ CH ₃	Liquid	---	N	---	---	---	---	R to 212	---	---	---	---	---
Butylene CAS# 107-01-7 (isomer not specified) CH ₃ CH=CHCH ₃	Liquid	---	---	N	R to 140	N	---	R to 285	N	---	---	---	---
Butyl Phenol CAS# 98-54-4 (CH ₃) ₃ C ₆ H ₄ OH	--	---	---	N	L to 73	R to 73	R to 73	R to 220	R to 73	---	---	---	---
Butyl Phthalate CAS# 84-74-2 C ₁₆ H ₂₂ O ₄	--	---	N	R to 180	---	---	---	R to 140	---	---	---	---	---
Butyl Stearate CAS# 123-95-5 CH ₃ (CH ₂) ₁₆ COO(CH ₂) ₃ CH ₃	--	---	---	---	R to 73	---	---	---	---	---	---	---	---
Butynediol CAS# 110-65-6 HOCH ₂ C≡CCH ₂ OH	--	---	---	---	R to 73	---	---	---	---	---	---	---	---
Butyric Acid CAS# 107-92-6 CH ₃ CH ₂ CH ₂ COOH	--	N	N	R to 180	R to 73	R to 73	R to 73	---	R to 73	---	---	---	---
	20%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 176	R to 73	---	---	---	---
Cadmium Cyanide CAS# 542-83-6 Cd(CN) ₂	--	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Calcium Bisulfide Ca(HS) ₂ •6H ₂ O	--	---	R to 180	---	N	R to 140	---	---	R to 140	---	---	---	---
Calcium Bisulfite	--	---	R to 180	R to 180	R to 140	N	R to 140	---	N	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
CAS# 13780-03-5 Ca(HSO ₃) ₂	Saturated	---	---	---	---	---	---	R to 248	---	---	---	---	---
Calcium Carbonate CaCO ₃	Saturated	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Calcium Chlorate CAS# 10137-74-3 Ca(ClO ₃) ₂ • 2H ₂ O	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Calcium Chloride CAS# 10043-52-4 CaCl ₂	Saturated	R to 120	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 176	R to 194	---	---	---
Calcium Hydrogen Sulfide CAS# 9046-53-1 Ca(H ₂ S)	>10%	---	---	---	---	---	---	R to 248	---	---	---	---	---
Calcium Hydroxide CAS# 1305-62-0 Ca(OH) ₂	--	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 275	R to 140	---	---	---	---
	30%	---	---	---	---	R to 140	---	R to 275	R to 140	---	---	---	---
Calcium Hypochlorite CAS# 7778-54-3 Ca(OCl) ₂	30%	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	L to 212	---	---	---	---	---
Calcium Nitrate CAS# 10124-37-5 Ca(NO ₃) ₂	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	---	---	---	R to 140	---	R to 212	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 176	---	---	---	---	---
Calcium Oxide CAS# 1305-78-8 CaO	--	---	R to 180	---	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Calcium Sulfate CAS# 7778-18-9 CaSO ₄	--	R to 100	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Camphor CAS# 76-22-2 C ₁₀ H ₁₆ O	--	N	---	R to 73	R to 73	R to 73	---	---	R to 73	---	R to 73	---	---
Cane Sugar Liquors (Sucrose) CAS# 57-50-1 C ₁₂ H ₂₂ O ₁₁	--	---	R to 180	R to 180	R to 140	R to 140	R to 150	R to 275	R to 140	---	---	---	---
Carbitol CAS# 111-90-0 CH ₃ CH ₂ O(CH ₂) ₂ O(CH ₂) ₂ OH	--	---	N	---	R to 73	---	---	---	---	---	---	---	---
Carbon Dioxide CAS# 124-38-9 CO ₂	Dry 100%	R to 160	R to 180	R to 140	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
	Wet	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Carbon Disulfide CAS# 75-15-0 CS ₂	--	N	N	N	N	L to 140	---	---	L to 73	R to 104	---	N	---
Carbon Monoxide CAS# 630-08-0 CO	Gas	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 140	R to 140	---	---	---	---
Carbon Tetrachloride CAS# 56-23-5 CCl ₄	--	N	N	N	R to 73	L to 73	N	L to 212	L to 68	N	---	N	---
Carbonic Acid CAS# 463-79-6 H ₂ CO ₃	Saturated	R to 185	R to 180	R to 140	R to 140	R to 140	---	R to 275	R to 140	---	R to 73	---	---
Castor Oil CAS# 8001-79	--	---	L to 180	R to 140	R to 140	R to 73	R to 140	R to 285	R to 73	---	---	---	---
Caustic Potash CAS# 1310-58-3 KOH	50%	R to 160	R to 180	R to 180	R to 140	R to 140	R to 73	---	R to 140	---	---	---	---
Cellosolve CAS# 110-80-2	--	---	N	R to 73	R to 73	L to 120	R to 140	---	L to 120	---	---	N	---
Cellosolve Acetate CAS# 111-15-9 CH ₃ COOCH ₂ CH ₂ OC ₂ H ₅	--	---	N	R to 73	R to 73	---	---	---	---	---	---	---	---
Chloral Hydrate CAS# 302-17-0 CCl ₃ CH(OH) ₂	All	---	---	L to 73	R to 140	R to 120	R to 140	---	R to 120	---	---	---	---
Chloramine CAS# 10599-90-3 NH ₂ Cl	Dilute	---	R to 180	R to 73	R to 73	R to 73	---	---	R to 73	---	N	---	---
Chloric acid CAS# 7790-93-4 HClO ₃	10%	---	R to 180	R to 73	R to 140	R to 73	---	---	R to 73	---	---	---	---
	20%	---	R to 185	R to 73	R to 140	R to 73	---	---	R to 73	---	---	---	---
Chlorine Gas CAS# 7782-50-5 Cl ₂	0-20 PPM moisture content	N	L to 73	N	L to 73	L to 73	---	R to 200 with sunlight cover or pigmented pipe	L to 73	---	---	---	---
	20-50 PPM moisture content	N	L to 73	N	N	L to 73	---	R to 200 with sunlight cover or pigmented pipe	L to 73	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
	50+ PPM moisture content	N	L to 73	N	N	L to 73	---	R to 200 with sunlight cover or pigmented pipe	L to 73	---	---	---	---
Chloroacetic Acid CAS# 79-11-8 CH ₂ ClCOOH	50%	N	N	L to 73	R to 140	R to 120	N	N	R to 120	---	---	---	---
	>10%	---	---	---	---	---	---	R to 140 with sunlight cover or pigmented pipe	---	---	---	---	---
Chloroacetyl Chloride CAS# 79-04-9 ClCH ₂ COCl	--	---	N	---	R to 73	---	---	---	---	---	---	---	---
Chlorobenzene CAS# 108-90-7 C ₆ H ₅ Cl	Dry	N	N	R to 73	N	L to 73	N	R to 170 with sunlight cover or pigmented pipe	L to 73	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 170 with sunlight cover or pigmented pipe	R to 68	L to 176	R to 73	---	---
Chlorobenzyl Chloride CAS# 104-83-6 ClC ₆ H ₄ CH ₂ Cl	--	---	N	---	N	L to 120	---	R to 125	L to 120	---	---	---	---
Chloroethanol CAS# 107-07-3 ClCH ₂ CH ₂ OH	Liquid	---	N	---	---	---	N	R to 122	---	---	---	---	---
Chloroform CAS# 67-66-3 CHCl ₃	Dry	N	N	N	N	L to 73	L to 73	---	N	---	N	N	---
	Liquid	---	---	---	---	---	---	R to 212	N	---	---	---	---
Chloromethane CAS# 74-87-3 CH ₃ Cl	Gas	---	N	---	---	---	---	R to 212	---	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Chloropicrin CAS# 76-06-2 CCl ₃ NO ₂	--	---	N	---	N	R to 73	---	R to 150	R to 73	---	---	---	---
Chlorosulfonic Acid CAS# 7790-94-5 ClSO ₂ OH	--	---	R to 73	N	R to 73	L to 120	N	---	N	---	---	---	---
	50%	---	---	---	---	---	---	R to 68 with sunlight cover or pigmented pipe	---	---	---	---	---
	100%	---	---	---	---	N	---	N	N	---	---	---	---
Chromic Acid CAS# 7738-94-5 H ₂ CrO ₄	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
	10%	R to 73	R to 180	R to 140	R to 140	R to 73	R to 140	R to 212	R to 73	N	---	N	N
	30%	N	R to 180	R to 73	R to 140	R to 73	R to 140	R to 212	R to 73	---	---	N	N
	40%	N	R to 180	R to 73	R to 140	R to 73	R to 73	R to 212	R to 73	---	---	N	N
	50%	N	L to 140	R to 73	N	R to 73	N	R to 212	R to 73	---	---	N	N
Chromium Potassium Sulfate (dodecahydrate) CAS# 7788-99-0 CrK(SO ₄) ₂ • 12H ₂ O	>10%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	--	---	---	R to 73	---	R to 73	---	---	R to 73	---	---	---	---
	Saturated	---	---	---	---	---	R to 212	---	---	---	---	---	---
Citric Acid CAS# 77-92-9 C ₆ H ₈ O ₇	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	L to 140	---	---	L
Coconut Oil CAS# 8001-31-8	--	---	L to 180	R to 73	R to 140	R to 73	R to 140	R to 248	R to 73	---	---	---	---
Cod Liver Oil	Work Sol.	---	L to 180	---	---	---	---	R to 248	---	---	---	---	---
Coffee	--	---	R to 180	R to 140	R to 140	R to 140	---	---	R to 140	---	---	R to 203	R to 203
Coke Oven Gas	--	---	---	R to 73	R to 140	R to 140	---	---	R to 140	---	---	---	---
Copper Acetate CAS# 142-71-2 Cu(C ₂ H ₃ O ₂) ₂ • H ₂ O	Saturated	---	R to 73	R to 73	R to 73	---	---	R to 250	---	---	---	---	---
Copper Carbonate CAS # 12069-69-1 CuCO ₃	Saturated	---	R to 180	---	R to 140	R to 140	---	R to 285	R to 140	---	---	---	---
Copper Chloride CAS# 7447-39-4 CuCl ₂	Saturated	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Copper Cyanide CAS# 544-92-3 CuCN	Saturated	---	R to 180	---	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Copper Fluoride Dihydrate CAS# 13454-88-1 CuF ₂ • 2H ₂ O	2%	---	R to 180	R to 73	R to 140	R to 140	R to 140	R to 250	R to 140	---	---	---	---
Copper Nitrate CAS# 3251-23-8 Cu(NO ₃) ₂ • 3H ₂ O	30%	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	---	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Copper Sulfate CAS#7758-99-8 CuSO ₄ • 5H ₂ O	Saturated	R to 120	R to 180	R to 120	R to 140	R to 140	R to 140	R to 212	R to 140	R to 194	---	---	---
Corn Oil CAS# 8001-30-7	--	---	L to 180	R to 73	R to 140	R to 120	---	R to 285	R to 120	---	---	R to 200	---
Corn Syrup CAS# 8029-43-4 C ₆ H ₁₂ O ₆	--	---	R to 185	R to 140	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Cottonseed Oil CAS# 8001-29-4	--	R to 120	L to 180	R to 140	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---
Creosote	--	---	N	R to 73	N	R to 140	---	---	R to 140	---	---	---	---
Cresol CAS# 95-48-7 CH ₃ C ₆ H ₄ OH	90%	N	N	R to 73	N	R to 73	N	R to 68	R to 73	---	---	---	---
Cresylic Acid CAS# 106-44-5	50%	---	N	---	R to 140	L to 73	N	R to 150	L to 73	---	---	---	---
Crotonaldehyde CAS# 123-73-9 CH ₃ CH=CHCHO	--	---	N	L to 73	N	---	---	---	---	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 104	--	---	---	---	---
Crude Oil CAS# 8002-05-9	--	---	L to 180	R to 140	R to 140	L to 120	L to 73	R to 212	L to 120	R to 140	---	---	---
Cupric Fluoride See Copper Fluoride Dihydrate											---		
Cupric Sulfate CAS# 7758-99-8 CuSO ₄ • 5H ₂ O	Saturated	R to 100	R to 180	R to 73	R to 140	R to 140	---	---	---	---	---	---	---
Cuprous Chloride CAS# 7758-89-6 CuCl	Saturated	R to 70	R to 180	---	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Cyclohexane CAS# 110-82-7 C ₆ H ₁₂	--	R to 73	R to 73	N	N	N	---	R to 275	N	L to 140	---	N	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Cyclohexanol CAS# 108-93-0 C ₆ H ₁₁ OH	--	L to 120	L to 73	R to 140	N	R to 73	L to 73	R to 104	R to 73	---	---	---	---
Cyclohexanone CAS# 108-94-1 C ₆ H ₁₀ O	Liquid	N	N	R to 73	N	R to 120	N	R to 75	R to 73	L to 140	---	---	---
Detergents (Heavy Duty)	--	---	L to 180	R to 180	R to 140	R to 140	---	---	R to 140	---	---	---	---
Dextrin (Starch Gum) CAS# 9004-53-9	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 140	---	---	---	---
Dextrose CAS# 50-99-7 C ₆ H ₁₂ O ₆	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Diacetone Alcohol CAS# 123-42-2 CH ₃ COCH ₂ C(CH ₃) ₂ OH	--	---	N	R to 120	N	---	---	R to 75	---	L to 140	---	N	N
Dibutoxyethyl Phthalate CAS# 117-83-9 C ₂₀ H ₃₀ O ₆	--	---	N	---	N	---	---	---	---	---	---	---	---
n-Dibutyl Ether CAS# 142-96-1 C ₄ H ₉ OC ₄ H ₉	--	---	N	---	---	R to 73	---	---	R to 73	---	---	---	---
Dibutyl Phthalate CAS# 84-74-2 C ₆ H ₄ (COOC ₄ H ₉) ₂	--	N	N	R to 73	N	R to 73	---	N	R to 73	---	---	N	---
Dibutyl Sebacate CAS# 109-43-3 C ₄ H ₉ OCO(CH ₂) ₈ OCOC ₄ H ₉	--	---	N	R to 73	R to 73	R to 73	---	N	R to 73	---	---	---	---
Dichloroacetic Acid CAS# 79-43-6 CHCl ₂ COOH	50%	---	N	---	---	---	---	R to 176	---	---	---	---	---
Dichlorobenzene CAS# 25321-22-6 C ₆ H ₄ Cl ₂	--	N	N	L to 73	N	L to 120	---	---	L to 120	---	---	N	---
	Liquid	---	---	---	---	---	---	R to 140	---	---	---	---	---
Dichloroethylene CAS# 75-35-4 C ₂ H ₂ Cl ₂	--	---	N	L to 73	N	L to 120	---	---	L to 120	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 248	---	---	---	---	---
Diesel Fuels	--	---	L to 180	R to 140	R to 140	R to 73	L to 73	R to 212	R to 73	---	R to 73	R to 122	R to 122
Diethanolamine CAS# 111-42-2 (CH ₂ CH ₂ OH) ₂ NH	Solid	---	---	---	---	---	---	N	---	---	---	---	---
	20%	---	---	---	---	---	---	---	---	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Diethylamine CAS# 109-89-7 C ₄ H ₁₀ NH	--	N	N	---	N	L to 120	N	N	L to 120	---	---	---	---
Diethyl Ether CAS# 60-29-7 C ₄ H ₁₀ O	--	N	N	R to 73	R to 73	L to 140	---	---	L to 140	R to 140	---	N	---
Diglycolic Acid CAS# 110-99-6 O(CH ₂ COOH) ₂	Saturated	---	R to 73	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	R to 140	---	---	---	---	---
Dimethylamine CAS# 124-40-3 (CH ₃) ₂ NH	--	---	N	R to 73	R to 140	R to 73	N	N	R to 73	---	---	---	---
Dimethylformamide CAS# 68-12-2 HCON(CH ₃) ₂	--	N	N	R to 180	N	R to 120	---	N	R to 120	---	---	---	---
	Liquid	---	---	---	---	---	---	N	N	---	---	---	---
Dimethylhydrazine CAS# 57-14-7 (CH ₃) ₂ NNH ₂	--	---	N	---	N	---	---	---	---	---	---	---	---
Dimethyl Phthalate CAS# 131-11-3 C ₆ H ₄ (COOCH ₃) ₂	--	---	N	---	---	L to 73	---	R to 75	L to 73	---	---	---	---
Diocetyl Phthalate CAS# 117-81-7 C ₆ H ₄ (COOC ₈ H ₁₇) ₂	--	N	N	L to 73	N	L to 73	L to 73	---	L to 73	R to 140	---	R to 73	---
Dioxane CAS# 123-91-1 C ₄ H ₈ O ₂	--	---	N	L to 140	N	R to 140	---	---	R to 140	---	---	---	---
	Liquid	---	---	---	---	---	---	L to 68	---	---	---	---	---
Diphenyl Oxide CAS# 101-84-8 (C ₆ H ₅) ₂ O	Saturated	---	---	---	---	L to 73	---	---	L to 73	---	---	---	---
Disodium Phosphate CAS# 7558-79-4 Na ₂ HPO ₄	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
DOWTHERM A ethyl glycol CAS# 110-80-5	--	---	---	---	N	---	---	---	R to 180	---	---	---	---
Ethanol CAS# 64-17-5 C ₂ H ₅ OH	40%	---	L to 140	---	---	---	---	R to 68	---	---	---	---	---
	95%	---	L to 140	---	---	---	---	R to 122	R to 140	---	---	---	---
	Liquid	---	L to 140	---	---	---	---	R to 122	R to 140	---	---	R to 122	---
Ether CAS# 60-29-7 ROR	--	N	N	L to 73	N	R to 73	N	---	R to 73	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Ethyl Acetate CAS# 141-78-6 CH ₃ COOCH ₂ CH ₃	--	N	N	L to 140	N	R to 73	L to 73	---	R to 73	R to 140	---	N	---
	Liquid	---	---	---	---	---	---	L to 68	---	---	---	---	---
Ethyl Acetoacetate CAS# 141-97-9 CH ₃ COCH ₂ COOC ₂ H ₅	--	N	N	---	N	---	---	L to 75	---	---	---	---	---
Ethyl Acrylate CAS# 140-88-5 CH ₂ =CHCOOC ₂ H ₅	--	---	N	---	N	---	---	L to 75	---	---	---	---	---
Ethyl Alcohol-See Ethanol											---		
Ethyl Benzene CAS# 100-41-4 C ₆ H ₅ C ₂ H ₅	--	---	N	L to 73	N	L to 73	---	R to 125	---	---	---	---	---
Ethyl Chloride CAS# 75-00-3 C ₂ H ₅ Cl	Dry	---	N	L to 73	N	L to 73	---	---	L to 73	---	---	---	---
	Gas	---	---	---	---	---	---	R to 212	---	---	---	---	---
Ethyl Chloroacetate CAS# 105-39-5 ClCH ₂ COOC ₂ H ₅	--	---	N	---	N	---	---	---	---	---	---	---	---
Ethyl Ether CAS# 60-29-7 (C ₂ H ₅) ₂ O	Liquid	---	N	N	N	N	N	R to 122	N	---	---	---	---
Ethylene Bromide CAS# 106-93-4 BrCH ₂ CH ₂ Br	Dry	---	N	---	N	---	N	---	---	---	---	---	---
Ethylene Chloride CAS# 75-01-4 (Vinyl Chloride) CH ₂ CHCl	Dry	N	N	L to 73	N	L to 140	---	R to 285	L to 140	---	---	N	---
Ethylene Chlorohydrin CAS# 107-07-3 ClCH ₂ CH ₂ OH	--	---	N	R to 73	N	---	N	---	---	---	---	---	---
	Liquid	---	---	---	---	---	---	L to 68	---	---	---	---	---
Ethylene Diamine CAS# 107-15-3 NH ₂ CH ₂ CH ₂ NH ₂	--	N	N	R to 73	N	R to 140	---	---	R to 140	---	---	---	---
Ethylene Dichloride CAS# 107-06-2 C ₂ H ₄ Cl ₂	Dry	N	N	L to 140	N	L to 73	R to 140	---	L to 73	---	---	---	---
Ethylene Glycol CAS# 107-21-1 OHCH ₂ CH ₂ OH	Liquid	R to 73	L to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 212	---	---	R to 73	---
	50% Solution	---	R to 180	---	---	---	---	---	---	---	---	R to 248	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Ethylene Oxide CAS# 75-21-8 CH ₂ CH ₂ O	--	---	N	L to 73	N	R to 73	---	R to 200	R to 73	L to 140	---	---	---
2-Ethylhexanol CAS# 104-76-7 CH ₃ (CH ₂) ₃ CHC ₂ H ₅ CH ₂ OH	--	---	---	---	---	R to 73	---	R to 250	R to 73	---	---	---	---
Fatty Acids R-COOH	--	R to 160	R to 73	R to 120	R to 140	R to 120	R to 150	R to 285	R to 120	R to 194	---	---	---
Ferric Chloride (Aqueous) CAS# 10025-77-1 FeCl ₃	Saturated	R to 120	R to 180	R to 140	R to 140	R to 140	R to 150	R to 212	R to 140	---	---	---	---
Ferric Hydroxide CAS# 1309-33-7 Fe(OH) ₃	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Ferric Nitrate CAS# 10421-48-4 Fe(NO ₃) ₃	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ferric Sulfate CAS# 10028-22-5 Fe ₂ (SO ₄) ₃	--	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Ferrous Chloride CAS# 7758-94-3 FeCl ₂	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Ferrous Hydroxide CAS# 18624-44-7 Fe(OH) ₂	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Ferrous Nitrate Fe(NO ₃) ₂	--	R to 160	R to 180	R to 140	R to 140	R to 140	---	R to 275	R to 140	---	---	---	---
Ferrous Sulfate CAS# 7720-78-7 FeSO ₄	--	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Fish Oil CAS# 8016-13-5	---	---	L to 180	R to 180	R to 140	R to 140	R to 140	R to 200	R to 140	---	---	---	---
Fluoroboric Acid CAS# 16872-11-0 HBF ₄	---	R to 73	R to 73	R to 140	R to 140	R to 140	---	---	R to 140	---	---	---	---
	Solid	---	---	---	---	---	---	R to 104	---	---	---	---	---
Fluorine Gas (Dry) CAS# 7782-41-4 F ₂	100%	---	L to 73	N	R to 73	L to 73	L to 73	---	L to 73	N	N	---	---
Fluorine Gas (Wet) CAS# 7782-41-4 F ₂	--	N	L to 73	N	R to 73	N	N	---	N	N	N	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Fluorosilicic Acid CAS# 16961-83-4 H ₂ SiF ₆	30%	---	R to 180	R to 140	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
	40%	---	R to 180	---	---	---	---	R to 140	---	---	---	---	---
	50%	---	R to 180	R to 73	R to 140	R to 140	R to 140	R to 212	--	---	---	---	---
	Saturated	---	R to 180	---	---	---	---	R to 212	---	---	---	---	---
Formaldehyde CAS# 50-00-0 HCHO	Dilute	R to 160	R to 73	R to 140	R to 140	R to 140	R to 140	R to 176	---	L to 104	---	---	---
	35%	R to 160	N	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	R to 100	---
	37%	R to 160	N	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	50%	---	N	---	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Formic Acid CAS# 64-18-6 HCOOH	10%	---	R to 180	---	---	---	---	R to 212	R to 140	N	N	---	---
	40%	---	---	---	---	---	---	R to 212	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 176	R to 140	---	---	---	---
	85%	---	---	---	---	---	---	R to 212	---	---	---	R to 122	---
	100%	N	L to 73	R to 140	R to 73	R to 140	R to 150	---	R to 140	---	---	---	---
Freon 11 CAS# 75-69-4 CCl ₃ F	100%	N	N	N	R to 140	R to 73	---	---	R to 73	---	---	---	---
Freon 12 CAS# 75-71-8 CCl ₂ F ₂	100%	---	N	R to 73	R to 140	R to 73	---	---	R to 73	R to 68	---	R to 73	---
	Work. Sol.	---	N	---	---	---	---	R to 212	R to 68	---	---	---	---
Freon 21 CAS# 75-43-4 CHCl ₂ F	100%	---	N	N	N	L to 120	---	---	L to 120	---	---	---	---
Freon 22 CAS# 75-45-6 CHClF ₂	100%	---	N	R to 73	N	L to 120	---	---	L to 120	R to 68	---	N	---
Freon 113 CAS# 76-13-1 C ₂ Cl ₂ F ₃	100%	---	N	N	R to 140	R to 73	---	---	R to 73	---	---	---	---
Freon 114 CAS# 76-14-2 C ₂ Cl ₂ F ₄	100%	---	N	N	R to 140	R to 73	---	---	R to 73	---	---	---	---
Fructose CAS# 57-48-7 C ₆ H ₁₂ O ₆	Saturated	R to 73	R to 180	R to 180	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---
Fruit Juice	Work. Sol.	---	---	---	---	---	---	R to 212	---	R to 104	R to 73	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Furfural CAS# 98-01-1 C ₄ H ₃ OCHO	100%	N	N	N	N	L to 140	---	L to 75	L to 140	L to 140	---	---	---
Gallic Acid CAS# 149-91-7 C ₆ H ₂ (OH) ₃ COOH • H ₂ O	--	---	R to 180	---	R to 140	R to 73	---	L to 75	R to 73	---	---	---	---
Gasoline, Leaded Gasoline, Unleaded Gasoline (Fuel) CAS# 8006-61-9	--	N	N	N	R to 140	R to 73	N	R to 285	R to 73	---	---	---	---
	--	N	N	N	R to 140	R to 73	N	---	R to 73	---	---	---	R to 122
	--	---	---	---	---	---	---	R to 212	---	R to 160	---	---	R to 122
Gasohol Gasoline, Sour Gelatin CAS# 9000-70-8	--	N	N	N	R to 140	R to 73	N	---	R to 73	---	---	---	R to 122
	--	N	N	N	R to 140	L to 73	N	R to 285	L to 73	---	---	---	---
	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Glucose CAS# 50-99-7 C ₆ H ₁₂ O ₆ • H ₂ O	--	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	R to 248	---	---	---	---	---
Glycerine CAS# 56-81-5 C ₃ H ₅ (OH) ₃	--	R to 140	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	R to 73	---
	Liquid	---	---	---	---	---	---	R to 248	---	---	---	---	---
Glycolic Acid CAS# 79-14-1 OHCH ₂ COOH	Saturated	---	N	R to 73	R to 140	R to 140	---	---	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	30%	---	---	---	---	---	---	R to 140	---	---	---	---	---
	65%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Glyoxal CAS# 107-22-2 OCHCHO	--	---	---	---	---	R to 140	---	---	R to 140	---	---	---	---
Grape Sugar CAS# 50-99-7	--	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Grapefruit Juice	Work. Sol.	---	---	---	---	---	---	R to 122	---	---	---	---	---
Grease	--	---	---	---	---	---	---	R to 250	---	R to 194	---	---	---
Green Liquor	--	R to 160	R to 180	---	R to 140	---	R to 140	---	---	---	---	---	---
n-Heptane CAS# 142-82-5 C ₇ H ₁₆	Liquid	R to 73	R to 73	N	R to 140	R to 73	N	R to 212	R to 73	---	---	N	---
n-Hexane CAS# 110-54-3 C ₆ H ₁₄	Liquid	L	R to 73	R to 73	R to 73	---	---	R to 176	---	---	R to 73	R to 73	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Hexanol, Tertiary Type I CAS# 25917-35-5 CH ₃ (CH ₂) ₄ CH ₂ OH	--	---	L to 180	---	R to 140	R to 140	R to 140	R to 175	R to 140	---	---	---	---
Hydraulic Oil (Petroleum)	--	---	---	---	R to 73	R to 73	---	---	R to 73	---	---	---	---
Hydrazine CAS# 302-01-2 H ₂ NNH ₂	--	---	N	R to 73	N	---	---	R to 200	---	---	---	---	---
Hydrobromic Acid CAS# 10035-10-6 HBr	20%	R to 73	R to 73	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	50%	N	---	R to 120	---	R to 140	---	---	R to 140	---	---	---	---
	66%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Hydrochloric Acid CAS# 7647-01-0 HCl	10%	L to 120	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 212	L to 104	---	---	---
	20%	---	---	---	---	---	---	R to 212	R to 212	---	---	---	R to 212
	30%	L to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	R to 140	R to 122
	Conc.	---	---	---	---	---	---	---	R to 140	---	---	---	---
Hydrocyanic Acid CAS# 74-90-8 HCN	--	R to 160	R to 73	R to 73	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 248	---	---	---	---	---
	10%	---	---	---	---	---	---	R to 248	---	---	---	---	---
Hydrofluoric Acid CAS# 7664-39-3 HF	Dilute	R to 73	R to 180	R to 180	R to 73	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	30%	N	L to 180	R to 140	R to 73	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	N	N	R to 73	R to 73	R to 120	R to 140	R to 212	R to 120	---	---	---	---
	60%	---	---	---	---	R to 140	---	R to 140	R to 140	---	---	---	---
	70%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	100%	N	N	L to 73	N	R to 120	---	---	R to 120	---	---	---	---
Gas	---	---	---	---	---	---	R to 104	---	---	---	---	---	
Hydrogen CAS# 1333-74-0 H ₂	Gas	---	R to 73	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	R to 194	---	---	---
Hydrogen Cyanide CAS# 74-90-8 HCN	--	---	---	R to 73	R to 140	---	---	R to 275	---	---	---	---	---
Hydrogen Fluoride, Anhydrous CAS# 7664-39-3 HF	--	---	L	R to 73	N	---	---	R to 200	---	---	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Hydrogen Peroxide CAS# 7722-84-1 H ₂ O ₂	10%	---	R to 180	---	---	---	---	R to 212	---	---	N	---	---
	30%	---	R to 180	---	---	---	---	R to 212	---	L to 104	---	R to 73	R to 73
	50%	---	R to 120	R to 73	R to 140	R to 140	N	R to 212	R to 140	---	---	---	---
	90%	---	---	L to 73	R to 140	R to 73	N	---	R to 73	---	---	R to 73	---
Hydrogen Phosphide (Type I) CAS # 7803-51-2 PH ₃	--	---	R to 73	---	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Hydrogen Sulfide CAS# 7783-06-4 H ₂ S	Dry	---	R to 180	R to 150	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
	Wet	---	R to 180	---	R to 140	R to 140	---	---	R to 180, L to 212	---	---	---	---
Hydrogen Sulfite CAS# 15181-46-1 HO ₃ S	10%	---	---	---	---	R to 140	---	R to 248	R to 140	---	---	---	---
Hydroquinone CAS# 123-31-9 C ₆ H ₄ (OH) ₂	Saturated	---	R to 73	---	R to 140	R to 140	R to 140	R to 250	---	R to 140	---	---	---
Hydroxylamine Sulfate CAS# 10039-54-0 (NH ₂ OH) • H ₂ SO ₄	--	---	---	---	R to 140	R to 140	---	---	R to 140	---	---	---	---
Hypochlorous Acid CAS# 7790-92-3 HOCl	10%	R to 73	L to 180	R to 73	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	70%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Inks	--	---	---	R to 140	---	R to 140	---	---	R to 140	---	---	---	---
Iodine CAS# 7553-56-2 I ₂	10%	N	R to 73	R to 73	N	L to 120	N	R to 176	L to 120	---	---	---	---
IRM 901 Oil (ASTM #1)	--	---	180	L to 140	R to 140	R to 73	R to 140	R to 248	R to 73	---	---	---	---
IRM 902 Oil (ASTM #2)	--	---	180	L to 140	R to 140	R to 73	R to 140	---	R to 73	---	---	---	---
IRM 903 Oil (ASTM #3)	--	---	180	L to 140	R to 140	R to 73	R to 140	---	R to 73	---	---	---	---
Isobutyl Alcohol CAS# 78-83-1 (CH ₃) ₂ CHCH ₂ OH	--	L to 73	L to 73	R to 73	---	R to 140	---	R to 250	R to 140	---	---	---	---
Isooctane CAS# 540-84-1 (CH ₃) ₃ CCH ₂ CH(CH ₃) ₂	Liquid	---	---	L to 73	---	R to 73	---	R to 212	R to 73	---	---	---	---
Isopropyl Acetate CAS# 108-21-4 CH ₃ COOCH(CH ₃) ₂	--	N	N	---	---	R to 73	---	---	R to 73	---	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Isopropyl Alcohol CAS# 67-63-0 <chem>(CH3)2CHOH</chem>	--	---	L to 180	R to 212	R to 140	R to 140	R to 140	L to 212	R to 140	---	---	---	---
Isopropyl Ether CAS# 108-20-3 <chem>(CH3)2CHOCH(CH3)2</chem>	--	---	N	L to 73	N	R to 73	---	R to 125	R to 73	---	---	---	---
JP-4 Fuel	--	---	L to 73	L to 73	R to 140	R to 73	---	R to 200	R to 73	---	---	R to 73	---
JP-5 Fuel	--	---	L to 73	L to 73	R to 140	R to 73	---	R to 200	R to 73	---	---	---	---
Kerosene CAS# 8008-20-6	--	R to 73	N	L to 140	R to 140	L to 140	L to 73	R to 285	L to 140	---	---	---	---
Ketchup	--	---	R to 180	---	R to 73	---	---	R to 285	---	---	---	R to 72	---
Ketones	--	N	N	L to 73	N	R to 73	---	---	R to 73	---	---	---	---
Kraft Liquors	--	R to 73	R to 180	---	R to 140	R to 120	R to 140	---	R to 120	---	---	---	---
Lactic Acid CAS# 50-21-5 <chem>CH3CHOHCOOH</chem>	10%	---	---	---	---	---	---	R to 140	---	---	---	---	---
	25%	R to 73	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	80%	N	L to 180	R to 140	R to 73	R to 140	---	---	R to 140	---	---	---	---
	Liquid	---	---	---	---	---	---	R to 212	---	R to 194	---	---	---
Lard Oil	--	---	L to 180	---	R to 140	L to 120	R to 73	---	L to 120	---	---	---	---
Latex	--	---	---	R to 140	---	R to 140	---	---	R to 140	---	---	---	---
Lauric Acid CAS# 143-07-7 <chem>CH3(CH2)10COOH</chem>	--	---	L to 180	R to 140	R to 140	R to 120	---	R to 230	R to 120	---	---	---	---
Lauryl Chloride (Type I) CAS# 112-52-7 <chem>CH3(CH2)10CH2Cl</chem>	--	---	N	---	R to 140	R to 120	R to 73	R to 248	R to 120	---	---	---	---
Lead Acetate (trihydrate) CAS# 6080-56-4 <chem>Pb(CH3COO)2 · 3H2O</chem>	Saturated	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Lead Chloride CAS# 7758-95-4 <chem>PbCl2</chem>	--	---	R to 180	R to 140	R to 140	R to 120	---	R to 250	R to 120	---	---	---	---
Lead Nitrate CAS# 10099-74-8 <chem>Pb(NO3)2</chem>	Saturated	---	R to 180	R to 140	R to 140	R to 120	---	R to 250	R to 120	---	---	---	---
Lead Sulfate CAS# 7446-14-2 <chem>PbSO4</chem>	--	---	R to 180	R to 140	R to 140	R to 120	---	R to 250	R to 120	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Lead Tetraethyl CAS# 78-00-2 C ₈ H ₂₀ Pb	--	---	---	---	---	---	---	R to 212	---	---	---	---	---
Lemon Oil CAS# 8008-56-8	--	---	N	L to 73	---	---	---	R to 250	---	---	---	---	---
Lemon Juice	--	---	---	---	---	L to 140	---	R to 250	L to 140	---	---	R to 122	---
Ligroin (Petroleum Ether) CAS# 8032-32-4	--	---	---	R to 140	---	---	---	R to 212	---	---	---	---	---
Lime Slurry	--	---	---	---	---	R to 140	---	---	R to 140	---	---	---	---
Lime Sulfur CAS# 1344-81-6	--	---	R to 73	R to 73	R to 73	R to 120	R to 140	---	R to 120	---	---	---	---
Linoleic Acid CAS# 60-33-3 CH ₃ (CH ₂) ₄ (CH=CHCH ₂) ₂ (CH ₂) ₆ COOH	--	---	L to 180	R to 180	R to 140	---	R to 73	R to 250	---	---	---	---	---
Linoleic Oil (Type I)	--	---	---	---	R to 140	---	R to 73	---	---	---	---	---	---
Linseed Oil CAS# 8001-26-1	--	73	L to 180	R to 140	R to 140	R to 73	R to 73	R to 248	R to 73	R to 194	---	---	---
Liqueurs	--	---	---	R to 140	R to 140	R to 120	R to 140	---	R to 120	---	---	---	---
Lithium Bromide CAS# 7550-35-8 LiBr	--	---	---	R to 140	R to 140	R to 140	---	R to 230	R to 140	---	---	---	---
	65%	---	R to 180	---	---	---	---	R to 230	---	---	---	R to 212	R to 212
Lithium Chloride CAS# 7447-41-8 LiCl	--	---	R to 180	R to 140	R to 140	R to 120	---	R to 250	R to 120	---	---	---	---
Lithium Hydroxide CAS# 1310-65-2 LiOH	--	---	R to 73	R to 140	---	R to 120	---	---	R to 120	---	---	---	---
Magnesium Carbonate CAS# 546-93-0 MgCO ₃	--	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Magnesium Chloride CAS# 7786-30-3 MgCl ₂	Saturated	R to 120	R to 180	R to 140	R to 140	R to 140	R to 140	R to 140	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	R to 194	---	---	---
Magnesium Citrate CAS# 6150-80-7 MgC ₆ H ₈ O ₇ • 5H ₂ O	--	---	R to 180	---	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Magnesium Hydroxide CAS# 1309-42-8 Mg(OH) ₂	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Magnesium Nitrate CAS# 10377-60-3 Mg(NO ₃) ₂ • 2H ₂ O	--	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Magnesium Oxide CAS# 1309-48-4 MgO	--	R to 160	R to 180	---	---	---	---	---	---	---	---	---	---
Magnesium Sulfate CAS# 7487-88-9 MgSO ₄ • 7H ₂ O	--	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Maleic Acid CAS# 110-16-7 HOOCCH=CHCOOH	Saturated	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	R to 140	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Malic Acid CAS# 6915-15-7 COOHCH ₂ CH(OH)COOH	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 140	---	---	---	---
Manganese Sulfate CAS# 7785-87-7 MnSO ₄ • 4H ₂ O	--	---	R to 180	R to 180	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Margarine	Work Sol.	---	---	---	---	---	---	R to 248	---	---	---	---	---
Mercuric Chloride CAS# 7487-94-7 HgCl ₂	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Mercuric Cyanide CAS# 592-04-1 Hg(CN) ₂	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Mercuric Sulfate CAS# 7783-35-9 HgSO ₄	Saturated	---	R to 180	R to 140	R to 140	R to 140	---	---	R to 140	---	---	---	---
Mercurous Nitrate (Dihydrate) CAS# 14836-60-3 HgNO ₃ • 2H ₂ O	10%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Mercury CAS# 7439-97-6 Hg	Liquid	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	R to 194	---	---	---
Methane CAS# 74-82-8 CH ₄	--	N	R to 73	R to 73	R to 140	R to 140	---	R to 285	R to 140	R to 140	---	---	---
Methanol (Methyl Alcohol) CAS# 67-56-1 CH ₃ OH	5%	---	R to 180	---	---	---	---	R to 140	---	---	---	---	---
	Liquid	---	N	R to 180	R to 140	R to 140	R to 140	L to 176	R to 140	---	R to 73	R to 73	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Methoxyethyl Oleate CAS# 111-10-4 CH ₃ OCH ₂ CH ₂ OCC ₁₇ H ₃₃	--	---	N	---	R to 73	---	---	---	---	---	---	---	---
Methyl Acetate CAS# 79-20-9 CH ₃ CO ₂ CH ₃	--	N	N	R to 140	N	L to 120	---	R to 100	L to 120	---	---	---	---
Methyl Acrylate CAS# 96-33-3 CH ₂ =CHCOOCH ₃	Tech Pure	---	N	---	---	R to 140	---	R to 100	R to 140	---	---	---	---
Methylamine CAS# 74-89-5 CH ₃ NH ₂	--	---	N	N	N	---	---	N	---	---	---	---	---
Methyl Bromide CAS# 74-83-9 CH ₃ Br	--	---	N	N	N	L to 73	---	R to 285	L to 73	R to 68	---	---	---
Methyl Butyl Ketone CAS# 591-78-6 CH ₃ CO(CH ₂) ₃ CH ₃	Liquid	---	N	---	---	---	---	L to 122	---	---	---	---	---
Methyl Cellosolve CAS# 109-86-4 HOCH ₂ CH ₂ OCH ₃	--	---	N	R to 73	N	L to 120	---	---	L to 120	---	---	---	---
Methyl Chloride CAS# 74-87-3 CH ₃ Cl	Dry	N	N	N	N	L to 120	N	R to 285	L to 120	R to 68	---	---	---
Methyl Chloroform CAS# 71-55-6 CH ₃ CCl ₃	--	N	N	L to 73	N	L to 120	---	R to 125	L to 120	---	---	---	---
Methyl Ethyl Ketone (MEK) CAS# 78-93-3 CH ₃ COC ₂ H ₅	100%	N	N	R to 73	N	N	R to 73	L to 68	R to 73	L to 140	---	N	---
Methyl Isobutyl Carbinol CAS# 108-11-2 (CH ₃) ₂ CHCH ₂ CH(CH ₃)OH	--	---	N	---	N	---	---	---	---	---	---	---	---
Methyl Isobutyl Ketone CAS# 108-10-1 (CH ₃) ₂ CHCH ₂ COCH ₃	--	N	N	R to 73	N	R to 73	---	---	R to 73	---	---	---	---
Methyl Isopropyl Ketone CAS# 563-80-4 CH ₃ COCH(CH ₃) ₂	--	---	N	---	N	R to 73	---	---	R to 73	---	---	---	---
Methyl Methacrylate CAS# 80-62-6 CH ₂ =C(CH ₃)COOCH ₃	--	---	N	---	R to 73	R to 140	---	R to 68	R to 140	---	---	N	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Methyl Sulfate CAS# 77-78-1 <chem>(CH3)2SO4</chem>	--	---	R to 73	L to 73	R to 73	R to 140	---	---	---	R to 68	---	---	---
Methylene Bromide CAS# 74-95-3 <chem>CH2Br2</chem>	--	---	N	N	N	L to 120	---	R to 175	L to 120	---	---	---	---
Methylene Chloride CAS# 75-09-2 <chem>CH2Cl2</chem>	100%	---	N	N	N	N	R to 73	L to 104	N	---	N	N	---
Methylene Chlorobromide CAS# 74-97-5 <chem>CH2ClBr</chem>	--	---	N	--	N	---	---	---	---	---	---	---	---
Methylene Iodide CAS# 75-11-6 <chem>CH2I2</chem>	--	---	N	N	N	L to 120	---	R to 200	L to 120	---	---	---	---
Methylsulfuric Acid CAS# 75-93-4 <chem>CH3HSO4</chem>	--	---	---	R to 140	R to 140	---	---	R to 150	---	---	---	---	---
Milk	--	R to 160	L to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	R to 194	R to 140	R to 200	---
Mineral Oil (Paraffin Oil) CAS# 8012-95-1	--	R to 73	R to 180	L to 140	R to 140	R to 73	L to 73	R to 212	L to 176	---	---	---	---
Molasses	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 140	---	---	---	---
Monochloroacetic Acid CAS# 79-11-8 <chem>CH2ClCOOH</chem>	50%	---	N	R to 140	R to 140	R to 140	---	---	R to 140	---	---	---	---
Monochlorobenzene CAS# 108-90-7 <chem>C6H5Cl</chem>	Tech Pure	---	N	R to 73	N	L to 120	---	---	L to 120	---	---	---	---
Monoethanolamine CAS# 141-43-5 <chem>HOCH2CH2NH2</chem>	--	---	N	---	N	---	---	---	---	---	---	---	---
Motor Oil	--	---	R to 73	L to 140	R to 140	R to 140	---	R to 275	R to 140	---	---	---	---
Morpholine CAS# 110-91-8 <chem>C4H9ONH</chem>	--	---	N	R to 140	---	R to 140	---	L to 75	R to 140	---	---	N	N
Mustard, Aqueous	Work. Sol.	---	---	---	---	---	---	R to 248	---	---	---	R to 72	---
Naphtha CAS# 8030-30-6	--	---	R to 73	R to 73	R to 140	R to 73	R to 73	R to 122	L to 176	R to 140	---	---	---
Naphthalene CAS# 91-20-3 <chem>C10H8</chem>	--	---	R to 73	R to 73	N	R to 73	R to 73	R to 200	R to 73	R to 194	---	N	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Natural Gas CAS# 68410-96-6	--	R to 73	---	R to 73	R to 140	R to 140	R to 73	---	R to 140	---	---	---	---
Nickel Acetate CAS# 373-02-4 Ni(OOCCH ₃) ₂ • 4H ₂ O	--	---	R to 180	R to 73	---	R to 140	---	R to 250	R to 140	---	---	---	---
Nickel Chloride CAS# 7718-54-9 NiCl ₂	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 250	R to 140	---	---	---	---
Nickel Nitrate CAS# 13138-45-9 Ni(NO ₃) ₂ • 6H ₂ O	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Nickel Sulfate CAS# 7786-81-4 NiSO ₄	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	R to 140	---
Nicotine CAS# 54-11-5 C ₁₀ H ₁₄ N ₂	--	---	---	---	R to 140	R to 140	R to 140	L to 70	R to 140	---	---	---	---
Nicotinic Acid CAS# 59-67-6 C ₅ H ₄ NCOOH	--	---	---	---	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Nitric Acid CAS# 7697-37-2 HNO ₃	5%	---	---	---	---	---	---	R to 176	L to 140	N	N	R to 210	---
	10%	L to 73	R to 180	R to 180	R to 140	R to 73	L to 73	R to 212	L to 140	---	---	---	---
	20%	---	---	---	---	---	---	R to 212	L to 140	---	---	---	---
	30%	N	R to 130	R to 140	R to 140	R to 73	N	R to 212	L to 140	---	---	---	---
	40%	N	R to 120	R to 73	R to 140	R to 73	N	L to 248	L to 140	---	---	---	---
	50%	N	R to 110	N	R to 100	L to 73	N	---	L to 140	---	---	---	---
	65%	---	---	---	---	---	---	L to 248	---	---	---	---	---
	70%	N	R to 100	N	R to 73	L to 73	N	---	L to 73	---	---	---	---
	85%	---	---	---	---	---	---	N	---	---	---	---	---
100%	N	N	N	N	N	N	N	---	N	---	---	---	
Nitrobenzene CAS# 98-95-3 C ₆ H ₅ NO ₂	100%	N	N	L to 140	N	N	---	R to 122	N	---	---	---	---
Nitroglycerine CAS# 55-63-0 CH ₂ NO ₃ CHNO ₃ CH ₂ NO ₃	--	---	N	---	N	R to 73	---	R to 125	R to 73	---	---	---	---
	1%	---	N	---	---	---	---	R to 140	---	---	---	R to 73	R to 73

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Nitroglycol CAS#628-96-6 NO ₃ (CH ₂) ₂ NO ₃	--	---	---	---	N	---	---	---	---	---	---	---	---
Nitrous Acid CAS# 7782-77-6 HNO ₂	10%	---	R to 73	L to 73	R to 140	R to 73	---	R to 125	R to 73	---	---	---	---
Nitrous Oxide CAS# 10024-97-2 N ₂ O	--	---	R to 73	R to 73	R to 73	R to 73	---	---	R to 73	---	---	R to 68	---
n-Octane CAS# 111-65-9 C ₈ H ₁₈	--	---	R to 73	---	---	---	---	R to 285	---	---	---	R to 73	---
Oleic Acid CAS# 112-80-1 CH ₃ (CH ₂) ₇ CH=CH(CH ₂) ₇ COOH	--	R to 160	L to 180	R to 73	R to 140	L to 140	R to 150	R to 248	L to 140	R to 140	---	R to 73	---
Oleum CAS# 57-06-7 H ₂ SO ₄ • xSO ₃	--	N	N	N	N	N	N	N	N	---	N	---	---
Olive Oil CAS# 8001-25-0	--	R to 160	L to 180	R to 73	R to 140	R to 140	---	R to 248	R to 140	---	---	---	---
Oxalic Acid	50%	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
CAS# 144-62-7 HOOC-COOH • 2H ₂ O	10%	---	---	---	---	---	---	R to 140	---	R to 140	---	---	---
	Saturated	---	---	---	---	---	---	R to 122	---	---	---	---	---
Oxygen Gas CAS# 7782-44-7 O ₂	--	R to 160	R to 180	N	R to 140	R to 140	---	R to 212	R to 140	R to 140	---	---	---
Ozone CAS# 10028-15-6 O ₃	--	---	R to 180	L to 73	R to 140	L to 120	---	R to 230	L to 120	L to 68	---	---	---
Palm Oil CAS# 8002-75-3	--	---	---	R to 73	---	R to 140	---	R to 230	R to 140	---	---	---	---
Palmitic Acid CAS# 57-10-3 CH ₃ (CH ₂) ₁₄ COOH	10%	R to 73	R to 73	R to 180	R to 140	R to 120	R to 150	R to 250	R to 120	---	---	---	---
	70%	---	R to 73	R to 180	R to 73	R to 120	---	R to 250	R to 120	---	---	---	---
Paraffin CAS# 8002-74-2 C ₃₆ H ₇₄	--	R to 73	R to 180	R to 140	R to 140	L to 140	---	R to 212	L to 140	---	---	---	---
Peanut Oil CAS# 8002-03-7	--	---	L to 180	R to 140	---	---	---	R to 275	---	---	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
n-Pentane CAS# 109-66-0 CH ₃ (CH ₂) ₃ CH ₃	--	N	L to 180	N	L to 140	L to 120	---	---	L to 120	---	---	---	---
Peracetic Acid CAS# 79-21-0 CH ₃ COOOH	40%	N	N	R to 73	R to 73	---	---	R to 150	---	---	---	---	---
Perchloric Acid (Type I) CAS# 7601-90-3 HClO ₄	10%	---	R to 73	---	---	---	---	R to 212	---	---	---	---	---
	15%	---	---	R to 140	R to 73	R to 140	L to 73	---	R to 140	---	---	---	---
	70%	R to 73	---	L to 73	R to 73	R to 73	N	R to 212	R to 73	---	---	---	---
Perchloroethylene CAS# 127-18-4 (tetrachloroethylene) Cl ₂ C=CCl ₂	--	N	N	L to 73	L to 140	L to 120	---	L to 212	L to 120	L to 68	---	N	---
Perphosphate CAS# 7758-23-8	--	---	---	R to 140	R to 73	---	---	---	---	---	---	---	---
Petroleum Ether CAS# 8032-32-4	--	---	---	R to 140	---	---	---	R to 212	---	---	---	---	---
Phenol CAS# 108-95-2 C ₆ H ₅ OH	--	N	R to 73	R to 73	R to 73	R to 140	R to 73	---	R to 73	N	N	---	---
	5%	---	---	---	---	---	---	---	L to 73	---	---	L to 140	---
	50%	---	---	---	---	---	---	R to 176	---	---	---	---	---
	90%	---	---	---	---	N	---	---	N	---	---	---	---
	Solid	---	---	---	---	---	---	---	L to 122	---	---	---	---
Phenylhydrazine CAS# 100-63-0 C ₆ H ₅ NHNH ₂	--	---	N	N	N	N	---	R to 104	N	---	---	---	---
Phenylhydrazine Hydrochloride CAS# 59-88-1 C ₆ H ₅ NHNH ₂ •HCl	10%	---	---	---	---	---	---	R to 140	N	---	---	---	---
Phosphine CAS# 7803-51-2 PH ₃	Gas	---	---	---	---	---	---	R to 104	---	---	---	---	---
Phosphoric Acid CAS# 7664-38-2 H ₃ PO ₄	10%	---	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	R to 73	R to 180	R to 212	R to 140	R to 140	R to 73	R to 212	R to 140	L to 104	---	---	---
	80%	---	---	---	---	---	---	---	R to 212	---	---	---	---
	85%	---	R to 180	R to 212	R to 140	R to 73	---	---	R to 73	---	---	---	---
	90%	---	---	---	---	---	---	---	R to 212	---	---	---	---

May not be fully applicable to pressurized applications

Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
	98%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Phosphoric Anhydride CAS# 1314-56-3 P ₂ O ₅	--	---	R to 73	R to 73	R to 73	---	---	---	---	---	---	---	---
Phosphorous (Red) CAS# 7723-14-0 P	--	---	---	---	R to 73	R to 140	---	L to 75	R to 140	---	---	R to 120	---
Phosphorous (White/Yellow) CAS# 12185-10-3 P ₄	--	--	---	---	R to 73	R to 140	---	---	R to 140	---	---	R to 120	---
Phosphorus Oxychloride CAS# 10025-87-3 POCl ₃	Liquid	---	---	---	---	---	---	N	---	---	---	---	---
Phosphorus Pentoxide CAS# 1314-56-3 P ₂ O ₅	--	---	R to 73	R to 73	R to 73	R to 140	---	R to 200	R to 140	---	---	---	---
Phosphorus Trichloride CAS# 7719-12-2 PCl ₃	--	--	N	R to 73	N	R to 120	L to 73	R to 200	R to 120	---	---	---	---
Phthalic Acid CAS# 88-99-3 C ₆ H ₄ (COOH) ₂	--	---	N	R to 140	L to 140	R to 140	---	---	R to 140	---	---	---	---
	Susp.	---	N	---	---	---	---	R to 212	---	---	---	---	---
Picric Acid CAS# 88-89-1 C ₆ H ₂ (NO ₂) ₃ OH	10%	N	N	R to 73	N	R to 73	R to 73	R to 212	R to 73	L to 68	---	---	---
	Saturated.	---	---	---	---	---	---	R to 212	---	---	---	---	---
Pine Oil CAS# 8002-09-3	--	---	N	R to 140	---	R to 73	---	R to 200	R to 73	---	---	---	---
Plating Solutions (Brass)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Cadmium)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Chrome)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Copper)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Gold)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Lead)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Nickel)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Rhodium)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Silver)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Plating Solutions (Tin)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Plating Solutions (Zinc)	--	---	R to 180	R to 140	R to 140	R to 140	L to 73	R to 220	R to 140	---	---	---	---
Potash (Aq)-See Potassium Hydroxide CAS# 1310-58-3 KOH													
Potassium Alum CAS# 10043-67-1 $AlK(SO_4)_2 \cdot 12H_2O$	--	---	R to 180	---	R to 140	R to 140	---	R to 285	R to 140	---	---	---	---
Potassium Aluminum Sulfate CAS# 10043-67-1 $AlK(SO_4)_2 \cdot 12H_2O$	--	---	R to 180	R to 180	R to 140	---	L to 73	---	---	---	---	---	---
Potassium Amyl Xanthate CAS# 2720-73-2 $CH_3(CH_2)_4OC(=S)-SK$	--	---	---	---	R to 73	---	---	---	---	---	---	---	---
Potassium Bicarbonate CAS# 298-14-6 $KHCO_3$	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Potassium Bi- chromate CAS# 7778-50-9 $K_2Cr_2O_7$	Saturated	---	R to 180	R to 140	R to 140	---	L to 73	R to 212	---	---	---	---	---
	40%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Bisulfate CAS# 7646-93-7 $KHSO_4$	--	---	R to 180	R to 212	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
Potassium Borate CAS#12045-78-2 $K_2B_4O_7 \cdot 4H_2O$	--	--	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Potassium Bromate CAS# 7758-01-2 $KBrO_3$	--	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	---	R to 180	---	---	---	---
Potassium Bromide CAS# 7758-02-3 KBr	--	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Potassium Carbonate CAS# 584-08-7 K_2CO_3	--	R to 73	R to 180	R to 180	R to 140	R to 140	R to 140	N	R to 140	---	---	---	---
Potassium Chlorate (Aqueous) CAS# 3811-04-9 $KClO_3$	--	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 200 with sunlight cover or pigmented pipe	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Potassium Chloride CAS# 7747-40-7 KCl	--	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Potassium Chromate CAS# 7789-00-6 K ₂ CrO ₄	--	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---
Potassium Cyanide CAS# 151-50-8 KCN	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Potassium Dichromate CAS# 7778-50-9 K ₂ Cr ₂ O ₇	Saturated	--	R to 180	R to 180	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---
Potassium Ethyl Xanthate CAS# 140-89-6 KS ₂ COC ₂ H ₅	--	---	---	---	R to 73	---	---	---	---	---	---	---	---
Potassium Ferricyanide CAS# 13746-66-2 K ₃ Fe(CN) ₆	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---
Potassium Ferrocyanide CAS# 13943-58-3 K ₄ Fe(CN) ₆ • 3H ₂ O	--	---	R to 180	R to 180	R to 140	R to 140	---	R to 248	R to 140	---	---	---	---
Potassium Fluoride CAS# 7789-23-3 KF	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Potassium Hydroxide CAS# 1310-58-3 KOH	10%	---	---	---	---	---	---	R to 176	---	---	---	---	---
	20%	---	---	---	---	---	---	R to 176	---	---	---	---	---
	25%	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	35%	---	---	---	---	---	---	---	---	---	---	R to 176	---
	50%	---	R to 180	---	---	---	---	---	R to 176	---	L to 104	L to 73	---
Potassium Hydrogen Sulfite CAS# 10117-38-1 KHSO ₃	10%	---	---	---	---	---	---	R to 140	---	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Hypochlorite CAS# 7778-66-7 KClO	--	R to 160	R to 180	---	R to 140	R to 120	---	---	R to 120	---	---	---	---
	3%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Iodide CAS# 7681-11-0 KI	--	---	R to 180	R to 73	R to 73	R to 140	---	R to 212	R to 140	---	---	---	---
Potassium Nitrate	--	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	L to 104	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
CAS# 7757-79-1 KNO ₃	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Orthophosphate CAS# 7778-77-0 H ₂ KPO ₄	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Perborate CAS# 13769-41-0 KBHO ₃	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 285	R to 140	---	---	---	---
Potassium Perchlorate CAS# 7778-74-7 KClO ₄	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 200	R to 140	---	---	---	---
Potassium Permanganate CAS# 7722-64-7 KMnO ₄	10%	---	R to 180	R to 73	R to 140	R to 140	R to 140	R to 176	R to 140	---	N	---	---
	20%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	25%	---	R to 180	R to 73	R to 73	R to 140	---	---	R to 140	---	---	---	---
	30%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Potassium Persulfate CAS# 7727-21-1 K ₂ S ₂ O ₈	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 176	R to 140	---	---	---	---
Potassium Sulfate CAS# 7778-80-5 K ₂ SO ₄	--	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	R to 194	---	---	---
Potassium Sulfide CAS# 1312-73-8 K ₂ S	--	---	R to 180	R to 140	---	R to 140	R to 140	R to 200	R to 140	---	---	---	---
Potassium Sulfite CAS# 10117-38-1 K ₂ SO ₃ • 2H ₂ O	--	---	R to 180	R to 140	---	R to 140	---	R to 200	R to 140	---	---	---	---
Propane CAS# 74-98-6 C ₃ H ₈	--	---	R to 73	R to 73	R to 140	R to 140	R to 73	R to 248	R to 140	R to 140	---	---	---
Propargyl Alcohol CAS# 107-19-7 HC≡CCH ₂ OH	--	---	L to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Propionic Acid CAS# 79-09-4 CH ₃ CH ₂ CO ₂ H	--	N	N	R to 140	---	R to 140	---	R to 140	R to 140	---	---	N	L to 104
Propyl Alcohol (Type I) CAS# 71-23-8 CH ₃ CH ₂ CH ₂ OH	--	73	L to 73	R to 140	R to 140	R to 140	R to 140	R to 122	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Propylene Dichloride CAS# 78-87-5 CH ₃ CHClCH ₂ Cl	100%	---	N	N	N	N	---	R to 200	N	---	---	---	---
Propylene Glycol CAS#57-55-6 C ₃ H ₈ O ₂	100					R to 180			R to 180		---		
	50% Aqueous					R to 180			R to 200		---		
Propylene Oxide CAS# 75-56-9 CH ₃ CHCH ₂ O	--	---	N	R to 73	N	R to 140	---	N	R to 140	---	---	---	---
Pyridine CAS# 110-86-1 N(CH) ₄ CH	--	---	N	L to 140	N	R to 73	---	R to 68	R to 73	L to 68	---	---	---
Pyrogalllic Acid CAS# 87-66-1 C ₆ H ₃ (OH) ₃	--	---	---	---	R to 73	--	--	R to 100	---	---	---	---	---
Quinone CAS# 106-51-4 C ₆ H ₄ O ₂	--	---	---	R to 140	---	R to 140	---	---	R to 140	---	---	---	---
Rayon Coagulating Bath	--	---	R to 180	---	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Salicylaldehyde CAS# 90-02-8 C ₆ H ₄ OHCHO	--	---	N	R to 73	N	R to 120	---	---	R to 120	---	---	---	---
Salicylic Acid CAS# 69-72-7 C ₆ H ₄ (OH)(COOH)	--	---	---	R to 140	R to 140	R to 140	---	R to 212	R to 140	---	---	---	---
Selenic Acid Aq. CAS# 13410-01-0 H ₂ SeO ₄	--	---	R to 180	---	R to 140	R to 140	R to 140	R to 150	R to 140	---	---	---	---
Silicic Acid CAS# 10193-36-9 SiO ₂ • nH ₂ O	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Silicone Oil (Polydimethylsiloxane) CAS# 63148-62-9	--	---	R to 180	R to 212	R to 73	R to 73	---	R to 250	R to 73	---	---	---	---
Silver Acetate CAS# 563-63-3 AgCH ₃ COO	Saturated	---	R to 180	---	---	---	---	R to 212	---	---	---	---	---
Silver Chloride CAS# 7783-90-6 AgCl	--	R to 160	R to 180	R to 140	R to 140	---	---	R to 200	---	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Silver Cyanide CAS# 506-64-9 AgCN	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Silver Nitrate CAS# 7761-88-8 AgNO ₃	--	R to 160	R to 180	R to 180	R to 140	R to 140	L to 73	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Silver Sulfate CAS# 10294-26-5 Ag ₂ SO ₄	--	R to 160	R to 180	R to 140	R to 140	R to 140	L to 73	R to 250	R to 140	---	---	---	---
Sodium Acetate CAS# 127-09-3 CH ₃ COONa	Saturated	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Alum CAS# 10102-71-3 AlNa(SO ₄) ₂ • 12H ₂ O	--	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Sodium Aluminate CAS# 1302-42-7 Na ₂ Al ₂ O ₄	30%	---	---	---	---	---	---	---	---	---	---	R to 165	---
	Saturated	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Sodium Benzoate CAS# 532-32-1 C ₆ H ₅ COONa	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Sodium Bicarbonate CAS# 144-55-8 NaHCO ₃	--	R to 73	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Bisulfate CAS# 7681-38-1 NaHSO ₄	--	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Sodium Bisulfite CAS# 7631-90-5 NaHSO ₃	--	---	R to 180	R to 140	R to 140	R to 140	---	R to 285	R to 140	---	---	---	---
Sodium Borate (Borax) CAS# 1303-96-4 Na ₂ B ₄ O ₇ • 10H ₂ O	1%	---	---	---	---	---	---	---	---	---	---	R to 113	---
	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Sodium Bromide CAS# 7647-15-6 NaBr	Saturated	R to 120	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	--	---	---	---	---	R to 248	---	---	---	---	---
Sodium Carbonate CAS# 497-19-8 Na ₂ CO ₃	--	R to 73	R to 180	R to 212	R to 140	R to 140	R to 140	N	R to 140	R to 140	---	---	---
	1.70%	---	---	---	---	---	---	---	---	---	---	R to 210	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Sodium Chlorate CAS# 7775-09-9 NaClO ₃	Saturated	---	R to 180	R to 140	R to 73	R to 140	R to 140	R to 250 with sunlight cover or pigmented pipe	R to 140	---	---	---	---
Sodium Chloride CAS# 7647-14-5 NaCl	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	R to 194	---	---	---
	10%	---	---	---	---	---	---	R to 212	---	---	---	R to 140	---
Sodium Chlorite CAS# 7758-19-2 NaClO ₂	25%	---	R to 180	R to 73	N	R to 140	---	R to 250	R to 140	---	---	---	---
Sodium Chromate CAS# 7775-11-3 Na ₂ CrO ₄ • 4H ₂ O	--	R to 120	R to 180	R to 140	---	R to 140	---	R to 176	R to 140	---	---	---	---
Sodium Cyanide CAS# 143-33-9 NaCN	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Dichromate CAS# 10588-01-9 Na ₂ Cr ₂ O ₇ • 2H ₂ O	Saturated	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
	20%	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Sodium Ferricyanide CAS#14217-21-1 Na ₃ Fe(CN) ₆	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Sodium Ferrocyanide CAS# 14434-22-1 Na ₄ Fe(CN) ₆	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Sodium Fluoride CAS# 7681-49-4 NaF	--	R to 120	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Hydrogen Sulfite CAS# 7631-90-5 NaHSO ₃	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
Sodium Hydroxide (Caustic Soda) CAS# 1310-73-2 NaOH	5%	---	---	---	---	---	---	L to 68	---	---	---	---	---
	15%	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	R to 212
	30%	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	N	R to 140	---	---	---	---
	50%	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	L to 104	---	R to 194	---
	70%	R to 120	---	R to 212	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Sodium Hypochlorite	--	R to 120	R to 180	R to 73	R to 73	R to 140	R to 140	---	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
CAS# 7681-52-9 NaOCl • 5H ₂ O	2% Cl	---	---	---	---	---	---	R to 212	---	---	---	---	---
	5% Cl	---	R to 180	R to 120	R to 140	L to 140	---	---	L to 140	---	---	---	---
	12% Cl	R to 73	R to 180	R to 120	R to 140	R to 73	R to 140	R to 68	R to 73	---	---	R to 190	---
Sodium Iodide CAS# 7681-82-5 NaI	--	---	R to 180	---	R to 140	---	---	R to 285	---	---	---	---	---
Sodium Metaphosphate CAS# 10361-03-2 (NaPO ₃) _n	--	---	R to 180	R to 120	R to 140	---	---	---	---	---	---	---	---
Sodium Metasilicate CAS# 6834-92-0 Na ₂ SiO ₃	100%	---	---	---	---	---	---	---	---	---	---	R to 212	---
Sodium Nitrate CAS# 7631-99-4 NaNO ₃	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Nitrite 7632-00-0 NaNO ₂	--	R to 160	R to 180	R to 73	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Palmitate CAS# 408-35-5 CH ₃ (CH ₂) ₁₄ COONa	5%	---	R to 180	R to 140	R to 140	---	---	R to 250	---	---	---	---	---
Sodium Perborate CAS# 7632-04-4 NaBO ₃ • 4H ₂ O	--	R to 120	R to 180	R to 73	R to 140	R to 73	---	---	R to 73	---	---	---	---
Sodium Perchlorate CAS# 7601-89-0 NaClO ₄	--	---	R to 180	R to 212	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Sodium Peroxide CAS# 1313-60-6 Na ₂ O ₂	10%	---	R to 180	---	R to 140	R to 140	---	R to 200	R to 140	---	---	---	---
Sodium Phosphate CAS# 7601-54-9 NaH ₂ PO ₄	Acid	R to 120	R to 180	R to 212	R to 140	R to 140	R to 140	R to 140	R to 140	---	---	---	---
	Alkaline	---	R to 120	R to 180	R to 212	R to 140	R to 140	---	R to 140	---	---	---	---
	Neutral	---	R to 120	R to 180	R to 212	R to 140	R to 140	---	R to 180	---	---	---	---
Sodium Silicate CAS# 6834-92-0 2Na ₂ O • SiO ₂	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	R to 140	---	---	---	---	---
	50%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	100%	---	---	---	---	---	---	---	---	---	---	R to 194	---
Sodium Sulfate	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	---	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
CAS# 7757-82-6 Na ₂ SO ₄	0.10%	---	---	---	---	---	---	R to 140	---	---	---	---	---
Sodium Sulfide CAS# 1313-82-2 Na ₂ S	30%	---	---	---	---	---	---	---	---	---	---	R to 165	---
	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	---	R to 140	L to 104	---	---	---
Sodium Sulfite CAS# 7757-83-7 Na ₂ SO ₃	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Sodium Thiosulfate CAS# 7772-98-7 Na ₂ S ₂ O ₃ • 5H ₂ O	--	---	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	R to 248	---	---	---	---	---
Soybean Oil CAS# 8001-22-7	--	---	L to 180	R to 73	---	R to 140	---	R to 275	R to 140	---	---	---	---
Stannic Chloride CAS# 7646-78-8 SnCl ₄	Saturated	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 275	R to 140	---	---	---	---
Stannous Chloride CAS# 7772-99-8 SnCl ₂	15%	R to 120	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	Saturated	---	---	---	---	R to 140	---	R to 285 with sunlight cover or pigmented pipe	R to 140	---	---	---	---
Starch CAS# 9005-25-8	--	---	R to 180	R to 140	R to 140	R to 140	---	R to 230	R to 140	---	---	---	---
Soluble Starch CAS# 9005-84-9 (C ₆ H ₁₀ O ₅) _n	Saturated	---	R to 180	---	---	R to 140	---	---	R to 140	---	---	---	---
Stearic Acid CAS# 57-11-4 CH ₃ (CH ₂) ₁₆ COOH	--	---	R to 73	R to 73	R to 140	R to 120	R to 150	R to 285	R to 120	L to 194	---	---	---
Stoddard's Solvent CAS# 8052-41-3	--	---	N	---	N	R to 73	R to 140	---	R to 73	---	---	---	---
Styrene CAS# 100-42-5 C ₆ H ₅ CH=CH ₂	--	---	N	R to 73	---	L to 73	---	R to 175	L to 73	R to 104	---	---	---
Succinic Acid CAS# 110-15-6 COOH(CH ₂) ₂ COOH	--	---	R to 180	R to 140	R to 140	R to 140	---	---	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Sugar CAS# 50-99-7 C ₆ H ₁₂ O ₆	Aq.	---	R to 180	---	R to 140	R to 140	---	R to 285	R to 140	---	---	---	---
Sulfamic Acid CAS# 5329-14-6 HSO ₃ NH ₂	20%	--	N	R to 180	N	---	---	---	---	---	---	---	---
Sulfur CAS# 7404-34-9 S	--	---	R to 180	R to 212	R to 140	R to 140	R to 140	R to 250	---	R to 104	---	---	---
Sulfur Chloride CAS# 10025-67-9 S ₂ Cl ₂	--	---	---	L to 73	---	---	---	R to 75	---	---	---	---	---
Sulfur Dioxide CAS# 7446-09-5 SO ₂	Gas Dry	N	R to 73	R to 140	R to 140	R to 140	---	R to 175	R to 140	---	---	---	---
	Gas Wet	N	N	R to 140	R to 73	R to 120	R to 73	R to 175	R to 120	---	---	---	---
Sulfur Trioxide CAS# 7446-11-9 SO ₃	Gas Dry	---	---	---	R to 140	N	---	N	N	L to 68	---	---	---
	Gas	---	N	---	R to 73	N	---	N	---	---	---	---	---
Sulfuric Acid CAS# 7664-93-9 H ₂ SO ₄	20%								R to 237		---		
	30%	R to 120	R to 180	R to 180	R to 140	R to 140	R to 140	R to 248	R to 180, L to 212	---	---	---	---
	50%	R to 73	R to 180	R to 140	R to 140	R to 120	L to 73		R to 140	---	---	---	R to 212
	60%	L to 73	R to 180	R to 73	R to 140	R to 120	L to 73	R to 248	---	---	---	---	---
	70%	L to 73	R to 180	R to 73	R to 140	R to 120	L to 73	---	---	---	---	---	---
	80%	L to 73	R to 180	R to 73	R to 140	R to 120	N	L to 248	R to 140	---	---	---	---
	90%	L to 73	R to 150	R to 73	R to 73	R to 120	N	R to 212	---	---	---	---	---
	93%	N	R to 140	L to 73	R to 73	L to 73	N	---	---	---	---	---	---
	94% - 98%	N	R to 130	L to 73	N	L to 73	N	L to 212	L to 85	---	---	R to 140	R to 140
100%	N	N	N	N	N	N	---	N	L to 194	---	---	---	
Sulfurous Acid CAS# 7782-99-2 H ₂ SO ₃	--	---	R to 73	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Tall Oil CAS# 8002-26-4	--	---	L to 180	R to 180	R to 140	R to 120	---	R to 285	R to 120	---	--	---	---
Tannic Acid CAS# 1401-55-4 C ₇₆ H ₅₂ O ₄₆	10%	N	R to 180	R to 73	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Tartaric Acid	--	R to 160	R to 180	R to 140	R to 140	R to 140	R to 140	R to 248	R to 140	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
CAS# 526-83-0 HOOC(CHOH) ₂ COOH	Saturated	---	---	---	---	---	---	R to 248	---	R to 194	---	---	---
Terpineol CAS# 8000-41-7 C ₁₀ H ₁₇ OH	--	---	---	---	L to 140	---	---	---	---	---	---	---	---
Tetrachloroethane CAS# 79-34-5 CHCl ₂ CHCl ₂	--	---	N	L to 73	L to 140	L to 120	---	R to 230	L to 120	---	---	---	---
Tetrachloroethylene CAS# 127-18-4 Cl ₂ C=CCl ₂	--	N	N	L to 73	L to 140	L to 120	---	L to 212	L to 120	L to 68	---	---	---
Tetraethyl Lead CAS# 78-00-2 Pb(C ₂ H ₅) ₄	--	---	R to 73	R to 73	R to 73	---	---	R to 285	---	R to 68	---	---	---
Tetrahydrofuran CAS# 109-99-9 C ₄ H ₈ O	--	N	N	L to 73	N	L to 73	L to 73	L to 68	N	---	---	---	---
Tetralin CAS# 119-64-2 C ₁₀ H ₁₂	--	---	N	N	N	N	---	---	N	---	---	---	---
Tetra Sodium Pyrophosphate CAS# 7722-88-5 Na ₄ P ₂ O ₇ • 10H ₂ O	--	---	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Thionyl Chloride CAS# 7719-09-7 SOCl ₂	--	---	N	N	N	N	R to 140	N	N	---	---	---	---
Tin (II) Chloride CAS# 7772-99-8 SnCl ₂	--	---	R to 180	---	---	---	---	R to 212	---	---	---	---	---
Tin (IV) Chloride CAS# 7646-78-8 SnCl ₄	--	---	R to 180	---	---	---	---	R to 212	---	---	---	---	---
Titanium Tetrachloride CAS# 7550-45-0 TiCl ₄	--	---	---	R to 140	L to 73	R to 120	---	---	R to 120	---	---	---	---
Toluene (Toluol) CAS# 108-88-3 CH ₃ C ₆ H ₅	--	N	N	L to 73	N	L to 120	N	R to 175	L to 120	R to 140	R to 73	N	N
Tomato Juice	--	---	R to 180	R to 212	R to 140	R to 140	---	R to 250	R to 140	---	---	---	---
Tributyl Citrate CAS# 77-94-1 C ₁₈ H ₃₂ O ₇	--	---	N	L to 73	R to 73	L to 120	---	---	L to 120	---	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Tributyl Phosphate CAS# 126-73-8 (C ₄ H ₉) ₃ PO ₄	--	---	N	L to 140	N	R to 73	---	L to 75	R to 73	R to 194	---	---	---
Trichloroacetic Acid CAS# 76-03-9 CCl ₃ COOH	50%	---	N	R to 140	R to 140	R to 140	---	R to 104	R to 140	---	---	---	---
	10%	---	N	---	---	R to 140	---	---	R to 140	---	---	---	---
Trichlorobenzene CAS# 12002-48-1 C ₆ H ₃ Cl ₃	--	---	N	---	---	---	---	R to 140	---	---	---	---	---
Trichloroethane CAS# 71-55-6 C ₂ H ₃ Cl ₃	--	---	N	---	---	---	---	R to 150	---	---	R to 73	N	---
Trichloroethylene CAS# 79-01-6 CHCl=CCl ₂	--	N	N	N	N	L to 120	N	R to 176	L to 68	L to 68	---	N	---
Triethanolamine CAS# 102-71-6 (HOCH ₂ CH ₂) ₃ N	--	L to 73	N	R to 140	R to 73	R to 73	R to 73	L to 104	R to 73	---	---	---	---
Triethylamine CAS# 121-44-8 (C ₂ H ₅) ₃ N	--	---	N	N	R to 140	R to 73	---	R to 125	R to 73	---	---	---	---
Trimethylolpropane CAS# 77-99-6 (CH ₂ OH) ₃ C ₃ H ₅	--	---	R to 73	R to 140	R to 73	L to 120	---	---	L to 120	---	---	---	---
Trisodium Phosphate CAS# 10101-89-0 Na ₃ PO ₄ •12H ₂ O	--	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Turpentine CAS# 8006-64-2	--	N	N	N	R to 140	L to 120	L to 73	R to 285	L to 120	R to 140	R to 73	---	---
Urea CAS# 57-13-6 CO(NH ₂) ₂	--	---	N	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
	10%	---	---	---	---	---	---	R to 212	---	---	---	---	---
	Saturated	---	---	---	---	---	---	R to 176	---	L to 140	---	---	---
Urine	--	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	---	R to 140	---	---	---	---
Vaseline (Petroleum Jelly) CAS# 8009-03-8	--	---	N	R to 140	N	R to 120	---	R to 200	R to 120	---	R to 73	---	---
Vegetable Oil	--	---	L to 180	R to 140	R to 140	R to 140	---	R to 248	R to 140	---	---	---	---
Vinegar CAS# 64-19-7	--	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 250	R to 140	R to 194	---	---	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Vinyl Acetate CAS# 108-05-4 CH ₃ COOCH=CH ₂	--	---	N	R to 73	N	R to 140	---	L to 68	R to 140	---	---	---	---
Water, Acid Mine H ₂ O	--	R to 160	R to 200	R to 140	R to 140	R to 140	R to 180	R to 300	R to 180	---	---	---	---
Water, Hot Brine H ₂ O with NaCl) H ₂ O with sylvinit (KCl, NaCl))	--	--	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	R to 237	--	--	--	--
Water, Deionized H ₂ O	--	R to 160	R to 200	R to 140	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Distilled H ₂ O	--	R to 160	R to 200	R to 212	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Potable H ₂ O	--	R to 160	R to 200	R to 212	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Salt H ₂ O	--	R to 160	R to 200	R to 212	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Sea H ₂ O	--	R to 160	R to 200	R to 212	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Soft H ₂ O	--	R to 160	R to 200	R to 212	R to 140	R to 140	R to 180	R to 300	R to 180	R to 194	R to 180	---	---
Water, Residential Waste H ₂ O	--	R to 73	R to 200	R to 212	R to 140	R to 140	R to 180	R to 275	R to 180	R to 194	R to 180	---	---
Whiskey	--	---	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
White Liquor	--	R to 73	R to 180	---	R to 140	---	---	---	---	---	---	---	---
Wine	--	R to 73	R to 180	R to 140	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
Xylene (Xylol) CAS# 1330-20-7 C ₆ H ₄ (CH ₃) ₂	--	N	N	N	N	N	N	L to 140	N	L to 194	L to 73	---	---
Zinc Acetate CAS# 557-34-6 Zn(CH ₃ COO) ₂ •2H ₂ O	--	---	R to 180	---	---	---	---	R to 250	---	---	---	---	---
Zinc Carbonate CAS# 3486-35-9 ZnCO ₃	--	---	R to 180	R to 140	---	R to 140	---	R to 212	R to 140	---	---	---	---
Zinc Chloride CAS# 76-46-85-7 ZnCl ₂	--	R to 120	R to 180	R to 180	R to 140	R to 140	---	---	R to 140	---	---	---	---
	50%	---	---	---	---	---	---	---	---	L to 73	---	---	---
	Saturated	---	---	---	---	---	---	R to 212	---	---	---	---	---
Zinc Nitrate CAS# 7779-88-6 Zn(NO ₃) ₂ •6H ₂ O	Saturated	R to 160	R to 180	R to 180	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	20%	---	---	---	---	---	---	---	---	---	---	R to 210	---

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Chemical Formula	Concentration	ABS	CPVC	PP (PP-R, PP-RCT)	PVC	PE (MDPE, HDPE, PE-RT)	PB	PVDF	PEX	PA11, PA12	PA66	PSU	PPSU
Zinc Oxide CAS# 1314-13-2 ZnO	--	---	R to 180	---	---	---	---	R to 212	---	---	---	---	---
Zinc Stearate CAS# 557-05-1 (CH ₃ (CH ₂) ₁₆ COO) ₂ Zn	--	---	---	---	---	---	---	R to 122	---	---	---	---	---
Zinc Sulfate CAS# 7733-02-0 ZnSO ₄ •7H ₂ O	Saturated	R to 160	R to 180	R to 212	R to 140	R to 140	R to 140	R to 212	R to 140	---	---	---	---
	20%	---	---	---	---	---	---	---	---	---	---	R to 212	---