

RESIN SELECTION GUIDE FOR CHEMICAL RESISTANCE

DERAKANE™ RESINS FOR CORROSION-RESISTANT FRP APPLICATIONS



INEOS Composites

CONTENTS

| | |
|---|----|
| Foreword..... | 4 |
| Brief product description..... | 5 |
| How to use the chemical resistance table..... | 6 |
| Special cases..... | 9 |
| Mixtures of alternating environments..... | 10 |
| Derakane™ epoxy vinyl ester resins – special resistance inquiry form..... | 11 |
| Chemical name/CAS numbers..... | 12 |
| Chemical resistance table: Maximum service temperatures for Derakane™, Derakane™ Momentum™, and Derakane™ Signia™ resins..... | 14 |

DERAKANE™ CHEMICAL RESISTANCE GUIDE

FOREWORD

Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ epoxy vinyl ester resins (from this point forward referred to as Derakane™ resins) are designed and manufactured by INEOS. Derakane™ resins possess outstanding corrosion-resistant and temperature-resistant properties, which make them well-suited for a variety of demanding industrial applications. With performance that has been proven over more than 50 years, Derakane™ resins not only deliver durable solutions, they also provide a high measure of confidence.

This guide briefly describes the various Derakane™ resins, as well as detailed chemical resistance data needed to assist engineers in specifying and designing corrosion-resistant fiber reinforced polymer (FRP) applications.

FRP materials are designed with a corrosive-resistant barrier to enhance performance and longevity. Their corrosion-resistant properties make FRPs an ideal structure for tanks, pipes and ducts in environments where corrosive materials are present. These structures are typically designed with a corrosion barrier that serves to minimize penetration of a corrosive media into the structural portion of the equipment. Typically, the entire corrosion barrier is 2.5 to 6.3 mm (100 to 250 mil) thick. The first layer of the corrosion barrier is usually 0.3 to 0.8 mm (10 to 20 mil) thick and is 95% resin, reinforced by one or two surfacing veils. This layer is then backed with 2 to 6 mm (90 to 230 mils) of 75% resin, reinforced with chopped strand mat (powder

binder only). Finally, the corrosion barrier is backed with a structural laminate that provides the strength and stiffness for the overall FRP structure. This guide provides guidelines for selecting the most appropriate resin for the corrosion-resistant equipment in question. Recommendations in this guide apply to a variety of corrosion-resistant structures.

Because many variables that affect the performance of a laminate are beyond INEOS' control, no warranty concerning the use of Derakane™ epoxy vinyl ester resins can be made. The temperatures shown in this guide are supported by extensive corrosion testing and/or case histories. When these guidelines are followed, properly designed, fabricated and installed equipment made with Derakane™ resins should provide excellent service life.

For the design of FRP equipment, prospective users of Derakane™ resins should refer to the appropriate industry standards and design guidelines.

For more information, contact INEOS Technical Service at derakane@ineos.com or by visiting www.derakane.com.

BRIEF PRODUCT DESCRIPTION

Derakane™ 411 series resins are the globally recognized standard for epoxy vinyl ester resins. They are based on bisphenol-A epoxy resin, providing resistance to a wide range of acids, alkalis, bleaches and solvents for use in many chemical processing applications. They offer excellent toughness and fatigue resistance.

Derakane™ 441-400 resins are low styrene monomer bisphenol-A epoxy vinyl ester resins with mechanical, thermal and chemical resistance properties between Derakane™ 411 and Derakane™ 470 resins. Their unique combination of high HDT and elongation makes them the resins of choice for applications with thermal cycling; e.g., for chemical reaction vessels.

Derakane™ 451-400 resin is a low viscosity, unpromoted novolac epoxy vinyl ester. This product allows the use of standard MEKP, exhibits excellent exotherm control and industry-leading storage stability. It offers exceptional hot water, solvent and acid resistance, excellent impact strength with high heat resistance and tensile elongation.

Derakane™ 455-400 resin is an unpromoted, highly crosslinked novolac epoxy vinyl ester. This product allows the use of standard MEKP and exhibits excellent exotherm control and storage stability. Derakane™ 455-400 resin contains less than 35% styrene and offers a higher heat distortion temperature compared to Derakane™ 451-400 resin. It also exhibits excellent solvent and acid resistance, as well as high flexural strength and heat resistance.

Derakane™ 470 series resins are epoxy novolac based vinyl ester resins designed to provide exceptional thermal and chemical resistance properties. They offer high resistance to solvents, acids and oxidizing substances such as chlorine. They also offer high retention of strength and toughness at elevated temperatures, making them the resins of choice for flue gas applications.

Derakane™ 510A/B/C series resins are brominated epoxy vinyl ester resins that offer a high degree of fire retardance.¹ The incorporation of bromine not only provides flame retardancy, but also contributes to better toughness and fatigue resistance when compared to standard epoxy vinyl ester resins. Derakane 510™ resins are also very resistant to chemical attack in chlorine and bleach environments.

Derakane™ 510N resin is a brominated epoxy novolac vinyl ester resin that offers a high degree of fire retardance.¹ It exhibits a corrosion resistance similar to Derakane™ 470 resins in most environments. It is also useful in hot, wet flue gas environments where thermal upsets can occur and where fire retardance is desired. This product is only available from North America.

Derakane™ 515-400 resin is a brominated, low viscosity, unpromoted, flame retardant¹ epoxy vinyl ester resin. This product allows the use of standard MEKP, exhibits excellent exotherm control and industry-leading storage stability. In addition to excellent flame retardancy, it offers excellent thermal shock resistance and corrosion resistance to acids and oxidizers. It is well-suited for caustic/chlorine and power industry applications.

Derakane™ 8084 resin is an elastomer-modified bisphenol-A epoxy vinyl ester resin that offers very high toughness, impact and fatigue resistance and excellent adhesion. It is the resin of choice for demanding structural applications and as a primer for chemically resistant FRP linings.

¹ The degree of retardance achieved in properly formulated cured products made of these resins is most frequently quantified by the ASTM E84 tunnel test. This is a controlled test that compares flammability characteristics of one material with another, but may not be predictive of behavior in a real fire situation. Derakane™ and Derakane™ Momentum™ epoxy vinyl ester resins are organic materials and will burn under the right conditions of heat and oxygen supply.

HOW TO USE THE CHEMICAL RESISTANCE TABLE

CONTENT

This listing of chemical reagents and environments shows the highest known temperature at which equipment made with Derakane™ resins has, in general, either:

- Given good service in industry or
- Been tested in the field or in the laboratory (in accordance with ASTM C 581) with results that indicate a good life expectancy in service

It should be noted that this is not necessarily the maximum service temperature.

The temperature limits in each column are representative of the whole family of resins (e.g., the Derakane™ 411 resins column applies to Derakane™ 411, Derakane™ Momentum™ 411 and Derakane™ Signia™ 411 resins).

Each series of Derakane™ resins is based on the same epoxy (or novolac) vinyl ester resin backbone. Improvements have been made over the years for processing and stability, as seen in our recent introduction of the Derakane™ Signia™ resins. For example, Derakane™ 411-350, Derakane™ Momentum™ 411-350 and Derakane™ Signia™ 411-350 resins each are based on the same polymer backbone, and comparison studies confirm that their performance in corrosive environments is essentially equivalent. Corrosion data and case history information for each series of Derakane™ 411 resins can be applied to the entire family of Derakane™ 411 resins.

In the chemical resistance tables, a blank space indicates that no data was available at the time that temperature ratings were assigned.

NR stands for “not recommended at any temperature.”

LS stands for “limited service” (at least three days to one year at maximum 40 °C/100 °F). Generally, in these cases, the respective resins can be used for FRP that is exposed accidentally, and where cleaning and inspection are possible after no more than three days.

This guide is updated periodically as needed to take into consideration new experiences and data (e.g., new products, other temperatures or concentrations, etc.).

| chemical environment | concentration % | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|--------------------|---|-------|-------|-------|-------------|----------|-------|-------|-------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Hydrochloric Acid/ Dissolved Organics <8,9,13> | 0–33% HCl | NR | | | | 65/150 <15> | | | | NR |

⁸ Double surfacing veil and a 5 mm/200 mil CR barrier should be used

⁹ Double C-veil should be used in the CR barrier

¹³ Acid resistant glass should be used in the corrosion liner and may be used in the structural wall

¹⁵ Solution may discolor

weight-%
unless otherwise
stated

not
recommended

no data
available

highest
recommended
temperature (°C/°F)

FOOTNOTES

Information indicated in footnotes is essential in order to ensure a good service life of FRP equipment. It is strongly recommended that they are followed.

- 1 Double synthetic veil should be used in the CR barrier. Carbon veil can be used in alkaline environments above 50 °C/120 °F and in hydrofluoric acid environments for maximum corrosion resistance.
- 2 Post cure recommended to maximize service life.
- 3 Benzoyl Peroxide/Amine cure system recommended to increase service life.
- 4 Recommended, provided the recommended resin is also suitable for the solvent used for dissolution.
- 5 Satisfactory up to maximum stable temperature for product.
- 6 Check with the INEOS Technical Service team for specific resin recommendation.
- 7 Probably satisfactory at higher temperatures, but temperature shown is the highest for which information was available.
- 8 Double surfacing veil and a minimum 5 mm/200 mil CR barrier should be used.
- 9 Double C-veil should be used in the CR barrier. Nexus™ veil is recommended in sodium hypochlorite when sodium hydroxide is present. ECR veil may also be used.

- 10 For reactors, resins with higher elongation may be preferred.
- 11 Within the solubility limits in aqueous solution.
- 12 Above 50 °C/120 °F, acid resistant glass should be used in the CR barrier and may be used in the structural wall.
- 13 Acid resistant glass should be used in the corrosion liner and may be used in the structural wall.
- 14 If chemical composition is unknown, obtain safety data sheet from supplier.
- 15 Solution may discolor.
- 16 The use of the resin above the maximum allowable design temperature, as limited by national design standards, may require approval of the relevant authorities.
- 17 The thickness of the CR barrier is proportional to the service life.
- 18 For food contact applications, local regulations apply. Please see our Fabricating Tips Guide or contact the INEOS Technical Service team.
- 19 Preference for Derakane™ 510A or B at higher concentrations and temperatures, together with notes 2 and 3.
- 20 Carbon veil recommended at higher temperatures

listed.

- 21 Maximum recommended temperature is 80 °C/180 °F for aqueous solutions below 0.5%.
 - 22 For potable water applications, please contact the INEOS Technical Service team.
 - 23 Chemical suppliers should approve materials of construction.
 - 24 If the salt solution is saturated, the maximum use temperature from a corrosion resistance point of view could be increased up to the boiling point of the solution or the heat distortion temperature (HDT) of the resin, whichever is lower.
 - 25 A longer life can be obtained if Derakane™ 510B resin is used for environments containing 8–15% sodium hypochlorite.
- NR: Not Recommended.
- LS: Limited Service. In general, three-days to one-year lifetime at room temperature (max. 40 °C/100 °F) is usually sufficient for secondary containment.

POST CURE

For a service temperature below 100 °C/210 °F:

A post cure may extend the service life if the operating temperature is within 20 °C/40 °F of the present CR guide maximum temperature for the service. This means that a post cure can be beneficial for solvent applications with a temperature limit of 25–40 °C/80–100 °F.

For a service temperature above 100 °C/210 °F:

Post cure in service may be sufficient, provided the resin-specific minimum Barcol hardness values are reached before startup.

For service in pure and neutral salt solutions:

Post cure may, in general, not be required, provided the resin-specific minimum Barcol hardness values are reached and no acetone sensitivity is detected before startup.

When using a BPO/Amine cure system:

Post cure is strongly recommended and should be performed within two weeks of construction.

The post cure conditions as detailed in European Standard EN 13121 may be used:

- For Derakane™ 411, 441, 510A/B/C and 8084 resins:
Four hours at 80 °C/180 °F
- For Derakane™ 451, 455, 470 and 510N resins:
Four hours at 90 °C/200 °F
- This norm recommends one hour per mm thickness of the laminate (between five and 15 hours).

VEILS

All common veils (non-apertured synthetic and glass veils) are suitable for most environments. Hydrofluoric acid (HF) containing solutions require the use of synthetic or carbon veils. Typically, one veil layer results in a final thickness of approximately 0.3 mm. The thickness of the veil layer is at least as important as the nature of the veil itself. An apertured synthetic veil (such as Nexus™ 100-10) offers an extra thickness of the veil layer and is preferred for cases where this extra thickness can increase service life (e.g., hot caustic solutions). Carbon veils have demonstrated excellent resistance to a number of aggressive chemicals such as HF, HCl and NaOH, **but not sodium hypochlorite (NaOCl)**. Carbon veil is also useful in achieving conductive surfaces.

SPECIAL CASES

INSUFFICIENT INFORMATION

In cases where the environment or exposure conditions are outside the scope of this guide, and thus no specific recommendations can be made, a test laminate should be exposed to the actual or simulated conditions proposed so that a final decision on resin suitability can be reached.

COATINGS AND LININGS (REINFORCED AND NON-REINFORCED)

Coatings and linings have their own specific properties and may be limited in operating temperatures because of thermal expansion. It is recommended to consult with the INEOS Technical Service team or with a company in your region that specializes in linings and coatings technology.

Laminate linings can be more durable in liquid environments than other lining systems. For quality reasons, they should be applied by hand lay-up and not by spray-up techniques. As a general rule, and as a result of the low or missing exotherm during polymerization, linings and coatings should be post cured whenever possible (see also the "Post Cure" section of this guide).

Special precautions are required for strongly diffusing media (HCl, HF, etc.). As a general rule, the thicker and the better cured the lining, the higher the diffusion resistance and the longer the life expectancy.

HIGH (FLUE) GAS TEMPERATURES

If a synthetic veil is recommended for hot gas environments, the temperature resistance of the veil must be sufficient.

If it is not, a carbon veil can often be used.

If the environment contains water vapor and/or acids, special measures must be taken to prevent sub-dewpoint conditions in the laminate.

SHORT-TERM EXPOSURE/SPILLAGE

If exposure is intermittent or limited to fumes or spills only, it is possible to have good service life at temperatures considerably higher than those shown and even have good service life in chemical environments shown as NR (not recommended). Contact the INEOS Technical Service team for a resin recommendation at derakane@ineos.com or by visiting derakane.com.

MIXTURES OF ALTERNATING ENVIRONMENTS

The information provided in this guide represents the performance of full FRP structures under continuous use in contact with the stated chemical environment (unless otherwise indicated).

It is sometimes difficult to predict just how aggressive certain combinations of chemicals will be toward FRP. Some mixtures are more aggressive toward FRP than the individual components, so special attention should be paid to aggressively synergistic chemicals which cannot readily be predicted based solely on the corrosion properties of the individual components.

The chemical resistance may also be negatively influenced by using the same equipment for alternating storage or transport of different products, particularly where these products have widely differing properties, such as acids and bases that chemically react with each other.

When in doubt, please consult with your local distributor or your INEOS sales representative, who can put you in touch with the appropriate technical resources at INEOS.

CHEMICAL RESISTANCE INQUIRY

When requesting resin recommendations for corrosion applications, the following data are necessary for your request to be processed:

- Chemical nature of all products in a process or a batch, with their corresponding concentrations (even traces).
- Service temperatures, including maximum and upset temperatures (with corresponding duration).
- State: liquid/gas/solid (risk of phasing or condensation if any).
- Type of equipment (tank, pipe, lining, etc.).

Please feel free to use the enclosed “Chemical Resistance Inquiry” form and email your inquiries to your local distributor or the INEOS Technical Service team at derakane@ineos.com.

SAFETY PRECAUTIONS

Derakane™ epoxy vinyl ester resins and the materials (solvents, accelerators, catalysts, etc.) used with them can be hazardous unless simple but precise precautions are taken. The precautions necessary for handling Derakane™ resins are similar to those for unsaturated polyesters and will therefore be familiar to trained personnel. Safety Data Sheets (SDS) on all Derakane™ resins are available to help customers satisfy their own handling and disposal needs.

NOTICE

Recommendations as to methods and use of materials made in this publication are based on the experience of INEOS and knowledge of the characteristics of Derakane™ resins and are given in good faith. However, because as a material supplier, INEOS does not exercise any control over the use of Derakane™ resins, no legal responsibility is accepted for such recommendations. In particular, no responsibility is accepted by INEOS for any system or application in which Derakane™ resins are utilized. The legal obligations of INEOS in respect of any sale of Derakane™ resins shall be determined solely by the terms of its respective sales contract.

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DERAKANE™ EPOXY VINYL ESTER RESINS

CHEMICAL RESISTANCE INQUIRY FORM

Please e-mail this form to derakane@ineos.com or fax to +49(0)7851 99 478-30 (Europe) or your distributor.

| | | | | | |
|--|--|---|---|---|---------|
| Date: | | Number of Pages: | | *Project Reference ID: | |
| To: Technical Service Derakane™ Resins INEOS Composites | | From: | | Engineering: | |
| E-Mail: derakane@ineos.com | | Name: | | End User: | |
| | | Company: | | Fabricator: | |
| | | E-Mail: | | Comments/notes: (e.g., unusual process conditions, temperature cycling, high/low concentrations, addition and dilution, novel design or construction, abrasion) | |
| | | Fax: | | | |
| | | Tel: | | | |
| Industry Sector/Process: (Chemical, Paper, Mining, Flue Gas ...) | | | | | |
| *Equipment Type: (Tank, Scrubber, Pipe/Duct, Lining ...) | | Tank or Pipe? | Other: | | |
| | | Full FRP Applications or lining on steel, concrete? | | | |
| *Dimensions/Capacity: (Height, Diameter, Flow Rate ...) | | | | | |
| *OPERATING CONDITIONS | | | Concentration/Units (g/L, oz/gal, %) | | |
| Chemical Environment or CAS Numbers (indicated on the Safety Data Sheet) | | | Minimum | Normal | Maximum |
| 1) | | | | | |
| 2) | | | | | |
| 3) | | | | | |
| 4) | | | | | |
| NOTE: Please show all major/minor components, concentrations, including traces. (If insufficient space, please add extra sheet or include the respective Safety Data Sheet). | | | | | |
| Temperatures (°C) or (°F)? | Minimum: | Normal operating temperature: | | Maximum: Design: | |
| Upsets: | Maximum Temperature, Duration (h), Frequency per year: | | | | |
| Pressure (Bar, psi)/Vacuum: | | | pH – Typical: Min., Normal, Max.: | | |

* required fields

CHEMICAL NAME/CAS NUMBERS

| CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name |
|---|--|---|--|--|
| 7-31-3 Methyl Formate | 75-71-8 Chlorofluorocarbon (CFC): R-12 (Dichlorodifluoromethane) | 100-37-8 Diethylaminoethanol | 111-46-6 Diethylene Glycol | 143-7-7 Lauric Acid |
| 10-54-3 Hexane | 75-75-2 Methanesulfonic Acid | 100-41-4 Ethylbenzene | 111-76-2 Ethylene Glycol n-Butylether: Ethanol, 2-butoxy | 143-33-9 Sodium Cyanide |
| 50-0-0 Formaldehyde | 75-87-6 Chloral | 100-42-5 Styrene | 111-77-3 Ethylene Glycol Methyl Ether | 144-55-8 Sodium Bicarbonate |
| 50-21-5 Lactic Acid | 75-99-0 Dichloropropionic Acid (2,2-) | 100-44-7 Benzyl Chloride | 111-90-0 Diethylene Glycol Monoethyl Ether | 144-62-7 Oxalic Acid |
| 50-70-4 Sorbitol | 76-1-7 Pentachloroethane | 100-51-6 Benzyl Alcohol | 111-96-6 Diethylene Glycol Dimethyl Ether | 149-91-7 Gallic Acid |
| 50-78-2 Acetylsalicylic Acid | 76-3-9 Trichloroacetic Acid | 100-52-7 Benzaldehyde | 112-16-3 Lauryl Chloride | 151-21-3 Sodium Lauryl Sulfate |
| 56-23-5 Carbon Tetrachloride | 76-5-1 Trifluoroacetic Acid (see Chloroacetic Acid) | 100-97-0 Hexamethylenetetramine | 112-18-5 Dodecyltrimethylamine | 151-50-8 Potassium Cyanide |
| 56-81-5 Glycerin or Glycerol | 76-6-2 Chloropicrin (Nitrochloroform) | 101-2-0 Triphenyl Phosphite | 112-27-6 Triethylene Glycol | 287-92-3 Cyclopentane |
| 56-93-9 Benzyltrimethylammonium Chloride | 76-13-1 Chlorofluorocarbon (CFC): CFC-113 (Trichlorotrifluoroethane) | 101-68-8 Diphenylmethane-4,4-Diisocyanate (MDI) | 112-30-1 Decanol | 298-7-7 Di (2-Ethylhexyl) Phosphoric Acid (DEHPA) |
| 57-10-3 Palmitic Acid | 77-47-4 Hexachlorocyclopentadiene | 101-84-8 Diphenyl Oxide | 112-34-5 Diethylene Glycol n-Butyl Ether also called Ethanol, 2-(2-butoxy-ethoxy)- | 298-12-4 Glyoxylic Acid |
| 57-11-4 Stearic Acid | 77-73-6 Dicyclopentadiene | 102-71-6 Triethanolamine | 112-40-3 Dodecane | 298-14-6 Potassium Bicarbonate |
| 57-13-6 Urea | 77-78-1 Dimethyl Sulfate | 104-15-4 Toluenesulfonic Acid | 112-41-4 Dodecene | 301-4-2 Lead (II) Acetate |
| 57-50-1 Cane Sugar, Sugar | 77-78-1 Dimethyl Sulfate | 104-74-5 Lauryl Pyridinium Chloride | 112-52-7 Lauryl Chloride | 302-1-2 Hydrazine |
| 57-55-6 Propylene Glycol | 77-92-9 Citric Acid | 104-76-7 Diethyl Alcohol | 112-53-8 Dodecanol (Lauryl Alcohol) | 334-48-5 Capric Acid (Decanoic Acid) |
| 60-24-2 Mercaptoethanol | 78-10-4 Ethyl Silicate | 105-58-8 Diethyl Carbonate | 112-53-8 Lauryl Alcohol | 334-48-5 Decanoic Acid |
| 60-29-7 Diethyl Ether | 78-10-4 Tetraethyl Orthosilicate | 105-60-2 Caprolactam | 112-53-8 Lauryl Alcohol | 497-19-8 Sodium Carbonate |
| 60-29-7 Ethyl Ether | 78-42-2 Trioctylphosphate | 106-43-4 Chlorotoluene (p-) | 112-55-0 Dodecylmercaptan | 502-44-3 Caprolactone |
| 60-34-4 Monomethylhydrazine | 78-42-2 Trioctylphosphate | 106-46-7 Isooctyl Alcohol | 112-55-0 Lauryl Mercaptan | 502-44-3 Dimethylammonium Hydrochloride (Dimethylamine HCl, DMA-HCl) |
| 62-53-3 Aniline | 78-50-2 Trioctyl Phosphine Oxide | 106-49-0 Toluidine (p-) | 112-73-2 Dibutyl Carbitol (diethylene glycol dibutyl ether) | 506-59-2 Dimethylamine Hydrochloride (Dimethylamine HCl, DMA-HCl) |
| 62-56-6 Thiourea | 78-83-1 Isobutyl Alcohol | 106-88-7 Butylene Oxide (1,2-) | 112-80-1 Oleic Acid | 506-64-9 Silver Cyanide |
| 62-76-0 Sodium Oxalate | 78-87-5 Dichloropropane (Propylene Dichloride) | 106-89-8 Epichlorohydrin | 117-81-7 Dioctyl Phthalate | 507-40-4 Butyl Hypochlorite (tert-) |
| 64-2-8 Ethylenediaminetetraacetic acid, tetrasodium salt (EDTA) | 78-93-3 Methyl Ethyl Ketone | 106-93-4 Ethylene Dibromide | 120-51-4 Barium Benzoate | 513-77-9 Barium Carbonate |
| 64-17-5 Alcohol, Ethyl; e.g., ethanol | 78-96-6 Isopropanol Amine | 106-94-5 Propyl Bromide | 121-3-9 Nitrotoluene (4-) Sulfonic Acid (2-) | 526-83-0 Tartaric Acid |
| 64-17-5 Ethanol (Ethyl Alcohol) | 79-0-5 Trichloroethane (1,1,2-) | 106-97-8 Butane | 121-43-7 Trimethyl Borate in Methyl Alcohol | 526-95-4 Gluconic Acid |
| 64-18-6 Formic Acid | 79-1-6 Trichloroethylene | 106-99-0 Butadiene | 121-44-8 Triethylamine | 527-7-1 Sodium Gluconate |
| 64-19-7 Acetic Acid | 79-3-8 Propionyl Chloride | 107-2-8 Acrolein (Acrylaldehyde) | 121-47-1 Sulfanilic Acid (meta) | 532-32-1 Sodium Benzoate |
| 64-67-5 Diethyl Sulfate | 79-6-1 Acrylamide | 107-5-1 Allyl Chloride | 121-57-3 Sulfanilic Acid (para) | 540-54-5 Propyl Chloride |
| 65-85-0 Benzoic Acid | 79-9-4 Propionic Acid | 107-6-2 Dichloroethane (Ethylene Chloride) | 121-69-7 Dimethylamine (N,N) | 540-59-0 Dichloroethylene |
| 67-43-6 Diethylenetriaminepentaacetic acid | 79-10-7 Acrylic Acid | 123-42-2 Ethylene Chlorohydrin | 123-42-2 Diacetone Alcohol | 540-72-7 Sodium Thiocyanate |
| 67-48-1 Choline Chloride | 79-11-8 Chloroacetic Acid | 107-13-1 Acrylonitrile | 123-51-3 Isoamyl Alcohol | 540-82-9 Ethyl Sulfate |
| 67-56-1 Methanol (Methyl Alcohol) | 79-14-1 Glycolic acid | 107-15-3 Ethylenediamine | 123-72-8 Butyraldehyde | 541-41-3 Ethyl Chloroformate |
| 67-63-0 Isopropyl Alcohol | 79-14-1 Hydroxyacetic Acid | 107-18-6 Allyl Alcohol | 123-76-2 Levulinic Acid (also 4-Oxopentanoic Acid) | 542-16-5 Aniline Sulfate |
| 67-64-1 Acetone | 79-20-9 Methyl Acetate | 107-21-1 Ethylene Glycol | 123-86-4 Butyl Acetate | 542-62-1 Barium Cyanide |
| 67-68-5 Dimethyl Sulfoxide (DMSO) | 79-21-0 Peracetic Acid | 107-22-2 Glyoxal | 123-91-1 Dioxane | 542-75-6 Dichloropropene |
| 67-72-1 Hexachloroethane | 79-41-4 Methacrylic Acid | 107-39-1 Diisobutylene | 123-95-5 Butyl Stearate | 543-59-9 Amyl Chloride |
| 68-11-1 Thioglycolic Acid (Mercaptoacetic Acid) | 79-43-6 see Chloroacetic Acid | 107-92-6 Butyric Acid | 123-99-9 Adipic Acid | 543-59-9 Chloropentane |
| 68-12-2 Dimethyl Formamide | 80-62-6 Methyl Methacrylate | 107-96-0 Mercaptopropionic (3-) Acid | 124-4-9 Adipic Acid | 543-80-6 Barium Acetate |
| 69-72-7 Salicylic Acid | 81-16-3 Tobias Acid | 107-98-2 1-Methoxy-2-Propanol | 124-7-2 Caprylic Acid (Octanoic Acid) | 544-63-8 Myristic Acid |
| 71-23-8 Propanol (n-) | 84-69-5 Diisobutyl Phthalate | 108-1-0 Dimethylethanolamine | 124-7-2 Octanoic Acid | 544-92-3 Copper Cyanide |
| 71-36-3 Alcohol, Butyl; e.g., n-butanol | 84-74-2 Dibutyl Phthalate | 108-5-4 Vinyl Acetate | 124-38-9 Carbon Dioxide | 545-6-2 Trichloroacetonitrile |
| 71-36-3 Butanol (n-) | 85-44-9 Phthalic Anhydride | 108-10-1 Methyl Isobutyl Ketone | 124-40-3 Dimethyl Amine | 546-93-0 Magnesium Carbonate |
| 71-36-3 Butyl Alcohol | 85-52-9 o-Benzoyl Benzoic Acid | 108-24-7 Acetic Anhydride | 124-64-1 Tetrakis (Hydroxymethyl) Phosphonium Chloride | 554-7-4 Potassium Gold Cyanide |
| 71-41-0 Alcohol, Amyl; e.g., 1-pentanol | 85-68-7 Butyl Benzyl Phthalate | 108-31-6 Maleic Anhydride | 126-11-4 Nitromethane (tris, hydroxymethyl) | 554-13-2 Lithium Carbonate |
| 71-43-2 Benzene | 87-86-5 Pentachlorophenol | 108-44-1 Maleic Anhydride (m-) | 126-30-7 Neopentyl Glycol | 557-21-1 Zinc Cyanide |
| 71-55-6 Trichloroethane (1,1,1-) | 88-89-1 Picric Acid (Alcoholic) | 108-46-3 Resorcinol | 126-72-7 Dibromopropyl Phosphate | 583-52-8 Potassium Oxalate |
| 74-82-8 Methane | 88-99-3 Phthalic Acid | 108-65-6 Propylene Glycol Methyl Ether Acetate | 126-73-8 Tributyl Phosphate | 584-8-7 Potassium Carbonate |
| 74-83-9 Methyl Bromide | 89-8-7 Sulfo-phthalic Acid (4-) | 108-77-0 Cyanuric Chloride | 127-9-3 Sodium Acetate | 593-81-7 Trimethylamine Hydrochloride (Trimethylammonium Chloride) |
| 74-87-3 Methyl Chloride | 91-20-3 Naphthalene | 108-80-5 Cyanuric Acid | 127-18-4 Perchloroethylene | 598-54-9 Copper Acetate |
| 74-89-5 Methylamine | 91-22-5 Quinoline | 108-83-8 Diisobutyl Ketone | 127-18-4 Tetrachloroethylene (Perchloroethylene) | 608-33-3 Dibromophenol (-2,6) |
| 74-90-8 Hydrocyanic Acid | 93-97-0 Benzoic Anhydride | 108-88-3 Toluene | 127-19-5 Dimethylacetamide | 611-6-3 Dichloronitrobenzene (2,4-) |
| 74-93-1 Methyl Mercaptan (Gas) | 94-75-7 2,4-Dichlorophenoxyacetic Acid | 108-90-7 Chlorobenzene | 127-20-8 Dalapon, Sodium Salt (2,2-Dichloropropionic Acid and Sodium Salt) | 615-58-7 Dibromophenol (-2,4) |
| 74-96-4 Ethyl Bromide | 95-49-8 Chlorotoluene (o-) | 108-90-7 Monochlorobenzene | 128-4-1 Sodium Dimethyldithiocarbamate | 616-38-6 Dimethylcarbonate |
| 74-98-6 Propane | 95-50-1 Dichlorobenzene (o-) | 108-91-8 Cyclohexylamine | 131-11-3 Dimethyl Phthalate | 617-84-5 Diethyl Formamide |
| 75-0-3 Ethyl Chloride | 95-53-4 Toluidine (o-) | 108-94-1 Phenol | 131-17-9 Diallyl Phthalate | 622-97-9 Methylstyrene (p-) |
| 75-1-4 Vinyl Chloride | 95-63-6 Trimethyl Benzene | 108-95-2 Chlorobenzene | 132-27-4 Sodium salt o-phenylphenate (Antimicrobial) | 626-61-9 Chloropyridine |
| 75-4-7 Ethyl Amine | 96-13-9 Dibromopropanol (2, 3-) | 109-43-3 Diethyl Ketone | 136-60-7 Butyl Benzoate | 627-3-2 Ethoxy Acetic Acid |
| 75-5-8 Acetonitrile | 96-22-0 Diethyl Ketone | 109-60-4 Propyl Acetate | 137-42-8 Sodium Methylthiocarbamate | 628-63-7 Amyl Acetate |
| 75-7-0 Acetaldehyde | 96-23-1 Glycerol Dichlorohydrin | 109-64-8 Dibromopropane | 140-1-2 Diethylenetriaminepentaacetic acid, sodium salt (penta sodium) | 630-8-0 Carbon Monoxide Gas |
| 75-9-2 Dichloromethane | 96-24-2 Glycerol Monochlorohydrin | 109-69-3 Butyl Chloride | 140-31-8 Aminoethyl Piperazine | 630-20-6 Tetrachloroethane |
| 75-9-2 Methylene Chloride | 97-65-4 Itaconic Acid | 109-70-6 Trimethylene Chlorobromide | 140-88-5 Ethyl Acrylate | 631-61-8 Ammonium Acetate |
| 75-12-7 Formamide | 97-99-4 Tetrahydrofuryl Alcohol | 109-73-9 Butyl Amine | 141-32-2 Butyl Acrylate | 704-76-7 2-Ethylhexyl Alcohol |
| 75-15-0 Carbon Disulfide | 98-0-0 Furfuryl Alcohol | 109-89-7 Diethylamine | 141-43-5 Ethanolamine | 753-73-1 Dimethyltin Dichloride |
| 75-18-3 Dimethyl Sulfide | 98-1-1 Furfural | 109-99-9 Tetrahydrofuran THF | 141-43-5 Ethanolamine | 759-94-4 Ethyl-N,N-di-n-Propylthiocarbamate (herbicide) |
| 75-21-8 Ethylene Oxide | 98-7-7 Benzotrichloride | 110-16-7 Maleic Acid | 141-78-6 Ethyl Acetate | 763-69-9 Ethyl-3-Ethoxy Propionate |
| 75-31-0 Isopropyl Amine | 98-9-9 Benzenesulfonyl Chloride | 110-27-0 Isopropyl Myristate | 141-91-3 Dimethyl Morpholine (2,6-) | 853-68-9 Anthraquinone Disulfonic Acid |
| 75-36-5 Acetyl Chloride | 98-11-3 Benzenesulfonic Acid | 110-61-2 Succinonitrile | 141-97-9 Ethyl Acetoacetate | 866-81-9 Cobalt Citrate |
| 75-45-6 Chlorodifluoromethane | 98-82-8 Cumene | 110-82-7 Cyclohexane | 142-4-1 Aniline Hydrochloride | 868-18-8 Sodium Tartrate |
| 75-52-5 Nitromethane | 98-83-9 Alpha-Methylstyrene | 110-86-1 Pyridine | 142-62-1 Caproic Acid (Hexanoic Acid) | 872-50-4 N-methyl-2-pyrrolidone |
| 75-56-9 Propylene Oxide | 98-83-9 Methylstyrene (Alpha-) | 110-91-8 Morpholine | 142-62-1 Hexanoic Acid | 829-0-6 Diglycolamine |
| 75-59-2 Tetramethyl Ammonium Hydroxide | 98-86-2 Acetophenone | 110-94-1 Glutaric Acid | 142-82-5 Heptane, n- | 993-16-8 Methyl Tin Trichloride |
| 75-69-4 Chlorofluorocarbon (CFC): R-11 (Trichlorofluoromethane) | 98-87-3 Dichlorotoluene (Benzal Chloride) | 111-30-8 Glutaraldehyde | 142-91-6 Isopropyl Palmitate | 1066-33-7 Ammonium Bicarbonate |
| | 98-88-4 Benzoyl Chloride | 111-40-0 Diethylenetriamine | 142-96-1 Dibutyl Ether (-n) | 1071-83-6 Glyphosate |
| | 98-95-3 Nitrobenzene | 111-42-2 Diethanolamine | | |

CHEMICAL NAME/CAS NUMBERS (continued)

| CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name | CAS Number/Chemical Name |
|--|--|---|---|---|
| 1113-38-8 Ammonium Oxalate | 7488-52-0 Zinc Sulfite | 7779-90-0 Zinc Phosphate | 9004-74-4 Polyethylene glycol methyl ether | 14518-69-5 Tetra-n-Butylphosphonium Hydroxide |
| 1191-50-0 Sodium Myristyl Sulfate | 7550-35-8 Lithium Bromide | 7782-41-4 Fluorine Gas | 9005-25-8 Starch | 15972-60-8 Alachlor, Herbicide |
| 1300-21-6 Dichloroethane | 7550-45-0 Titanium Tetrachloride (Titanium Chloride) | 7782-50-5 Chlorine Gas | 9016-45-9 Ethoxylated Nonyl Phenol | 16529-56-9 2-Methyl-3-Butenenitrile |
| 1300-72-7 Sodium Xylene Sulfonate | 7553-56-2 Iodine | 7782-77-6 Nitrous Acid | 10025-67-9 Sulfur Chloride | 16672-87-0 Ethephon |
| 1302-42-7 Sodium Aluminate | 7558-79-4 Sodium Phosphate (di) | 7782-99-2 Sulfurous Acid | 10025-73-7 Chromic Chloride | 16721-80-5 Sodium Bisulfite (Hydrodisulfite) |
| 1303-96-4 Borax | 7558-80-7 Sodium Phosphate (mono) | 7783-0-8 Selenious Acid | 10025-87-3 Phosphorus Oxychloride | 16721-80-5 Sodium Hydrosulfite |
| 1305-62-0 Calcium Hydroxide | 7601-54-9 Hydrogen Sulfide | 7783-6-4 Hydrogen Sulfide | 10025-91-9 Antimony Trichloride | 16872-11-0 Fluoboric Acid |
| 1309-42-8 Magnesium Hydroxide | 7601-89-0 Sodium Perchlorate | 7783-13-3 Sodium Ammonium Phosphate | 10026-4-7 Silicone Tetrachloride | 16893-85-9 Sodium Fluorosilicate |
| 1310-58-3 Potassium Hydroxide | 7601-90-3 Perchloric Acid | 7783-18-8 Ammonium Thiosulfate | 10028-15-6 Ozone in solution | 16940-66-2 Sodium Borohydride SWS (Stabilized Water Solution) |
| 1310-65-2 Lithium Hydroxide | 7631-90-5 Sodium Bisulfite | 7783-20-2 Ammonium Sulfate | 10034-85-2 Hydroiodic Acid | 16949-65-8 Magnesium Fluosilicate |
| 1310-73-2 Sodium Hydroxide | 7631-99-4 Sodium Nitrate | 7783-28-0 Ammonium Phosphate, dibasic | 10034-93-2 Hydrazine Sulfate | 16961-83-4 Fluosilicic Acid (Hydrofluosilicic Acid) |
| 1312-76-1 Potassium Metasilicate | 7632-0-0 Sodium Nitrite | 7783-28-0 Diammonium Phosphate | 10035-10-6 Hydrobromic Acid or Hydrogen Bromide | 17194-0-2 Barium Hydroxide |
| 1313-82-2 Sodium Sulfide | 7646-78-8 Stannic Chloride | 7784-18-1 Aluminum Fluoride | 10039-54-0 Hydroxylamine Acid Sulfate | 17439-11-1 Fluottitanic Acid |
| 1314-56-3 Phosphorous Pentoxide | 7646-79-9 Cobalt Chloride | 7784-24-9 Potassium Aluminum Sulfate | 10043-1-3 Aluminum Sulfate | 17496-8-1 Ammonium Propionate |
| 1314-85-8 Phosphorus Sesquisulfide | 7646-85-7 Zinc Chloride | 7784-46-5 Sodium Arsenite | 10043-35-3 Boric Acid | 18130-44-4 Titanium Sulfate |
| 1317-65-3 Calcium Carbonate | 7647-1-0 Hydrochloric Acid | 7785-87-7 Manganese Sulfate (Manganous Sulfate) | 10043-52-4 Calcium Chloride | 18483-17-5 Tannic Acid |
| 1319-77-3 Cresylic Acid | 7647-1-0 Hydrogen Chloride | 7786-30-3 Magnesium Chloride | 10043-67-1 Aluminum Potassium Sulfate | 19351-18-9 2,2-Dimethyl Thiazolidine |
| 1327-41-9 Aluminum Chlorohydrate | 7647-14-5 Sodium Chloride | 7786-81-4 Nickel Sulfate | 10049-4-4 Chlorine Dioxide | 21645-51-2 Aluminum Hydroxide |
| 1327-52-2 Arsenic Acid | 7647-15-6 Sodium Bromide | 7789-23-3 Potassium Fluoride | 10099-74-8 Lead (II) Nitrate | 23210-56-2 N-Chloro-o-Tolyl (insecticide emulsion) |
| 1327-53-3 Arsenious Acid | 7647-18-9 Antimony Pentachloride | 7789-32-4 Ammonium Bromide | 10101-53-8 Chromic Sulfate | 24347-58-8 Butylene Glycol |
| 1330-20-7 Xylene | 7664-38-2 Phosphoric Acid | 7789-38-0 Sodium Bromate | 10108-64-2 Cadmium Chloride | 24800-44-0 Tripropylene Glycol, see Ethylene Glycol |
| 1330-43-4 Sodium Tetraborate | 7664-39-3 Hydrofluoric Acid or Hydrogen Fluoride | 7789-41-5 Calcium Bromide | 10108-73-3 Cerous Nitrate | 25013-15-4 Vinyl Toluene |
| 1330-78-5 Tricresyl Phosphate | 7664-41-7 Ammonia | 10112-91-1 Hypochlorous Acid | 10112-91-1 Mercurous Chloride | 25154-55-6 Nitrophenol |
| 1330-86-5 Isooctyl Adipate | 7664-93-9 Sulfuric Acid | 7790-93-4 Chloric Acid | 10124-37-5 Calcium Nitrate | 25155-30-0 Sodium Dodecylbenzenesulfonate |
| 1330-96-4 Sodium Borate | 7681-11-0 Potassium Iodide | 7790-94-5 Chlorosulfonic Acid | 10137-74-3 Calcium Chlorate | 25265-71-8 Dipropylene Glycol |
| 1333-39-7 Phenol Sulfonic Acid | 7681-38-1 Sodium Bisulfate | 7790-98-9 Ammonium Perchlorate | 10141-0-1 Chromium Potassium Sulfate | 25322-68-3 Polyethylene Glycol |
| 1333-83-1 Sodium Bifluoride | 7681-49-4 Sodium Fluoride | 7791-8-4 Antimony Oxychloride | 10141-5-6 Cobalt Nitrate (II) | 25339-17-7 Isodecanol |
| 1335-54-2 Diisopropanolamine | 7681-52-9 Sodium Hypochlorite | 8000-26-8 Pine Oil | 10196-4-0 Ammonium Sulfite | 25340-17-4 Diethylbenzene |
| 1336-21-6 Ammonium Hydroxide | 8000-48-4 Sodium Monophosphate | 7791-8-4 Eucalyptus Oil | 10222-1-2 Dibromonitro-Propionamide | 25567-55-9 Sodium Tetrachlorophenate |
| 1341-49-7 Ammonium Bifluoride | 7681-57-4 Sodium Metabisulfite | 8001-22-7 Soybean Oil | 10257-55-3 Calcium Sulfite | 25639-42-3 Methylcyclohexanol |
| 1344-9-8 Sodium Silicate | 7697-37-2 Nitric Acid | 8001-25-0 Olive Oil | 10294-34-5 Boron Trichloride | 26248-24-8 Sodium Tridecylbenzene Sulfonate |
| 1344-67-8 Copper Chloride | 7704-34-9 Sulfur | 8001-26-1 Linseed Oil | 10361-37-2 Barium Chloride | 26968-58-1 Ethyl Benzyl Chloride |
| 1461-25-2 Tetrabutyltin | 7705-8-0 Ferric Chloride | 8001-29-4 Cottonseed Oil | 10377-48-7 Lithium Sulfate | 27138-31-4 Dipropylene Glycol Dibenzoate |
| 1565-80-6 Amyl Alcohol | 7718-54-9 Nickel Chloride | 8001-30-7 Corn Oil | 10377-60-3 Magnesium Nitrate | 27176-87-0 Dodecylbenzenesulphonic Acid |
| 1634-4-4 Methyl t-Butyl Ether | 7719-9-7 Thionyl Chloride | 8001-54-5 Benzalkonium Chloride | 10377-66-9 Manganese Nitrate (Manganous) | 27458-94-2 Isomonyl Alcohol |
| 1634-4-4 t-Butyl Methyl Ether (MTBE) | 7719-12-2 Phosphorus Trichloride | 8001-69-2 Cod Liver Oil | 10421-48-4 Ferric Nitrate | 28348-53-0 Sodium Cumenesulfonate |
| 1762-95-4 Ammonium Thiocyanate | 7720-78-7 Ferrous Sulfate | 8001-79-4 Castor Oil | 10450-55-2 Ferric Acetate | 28553-12-0 Disonoyl Phthalate |
| 1863-63-4 Ammonium Benzoate | 7722-64-7 Potassium Permanganate | 8002-3-7 Peanut Oil | 10545-99-0 Sulfur Dichloride | 29965-97-7 Cyclooctadiene |
| 2008-39-1 2,4-D, Dimethylamine Salt | 7722-76-1 Ammonium Phosphate, monobasic | 8002-26-4 Tall Oil | 10553-31-8 Barium Bromide | 31142-56-0 Aluminum Citrate |
| 2052-49-5 Tetra-n-Butylammonium Hydroxide | 7722-84-1 Hydrogen Peroxide | 8002-74-2 Paraffin Wax | 10588-1-9 Sodium Dichromate | 35139-28-8 Ferric Sulfate |
| 2082-81-7 Trimethylamine | 7722-88-5 Tetrasodium Pyrophosphate | 8002-92-4 Ammonium Carbonate | 11120-25-5 Ammonium Tungstate | 36653-82-4 Cetyl alcohol |
| 2090-64-4 Carbonic Acid | 7726-95-6 Bromine | 8002-92-4 Ammonium Chloride | 12007-89-5 Ammonium Pentaborate | 36653-82-4 Hexadecanol (n-) |
| 2235-54-3 Ammonium Lauryl Sulfate | 7727-15-3 Aluminum Bromide | 8007-56-5 Aqua Regia | 12021-95-3 Fluozirconic Acid | 50864-67-0 Barium Sulfide |
| 2402-79-1 Tetrachloropyridine | 7727-21-1 Potassium Persulfate | 8007-69-0 Almond Oil | 12028-48-7 Ammonium Metatungstate | 51218-45-2 Metolachlor |
| 2836-32-0 Sodium Glycolate | 7727-43-7 Barium Sulfate | 8008-20-6 Kerosene | 12042-91-0 Aluminum Chlorohydroxide | 61789-32-0 Fatty Acids |
| 2971-90-6 Clopidol | 7727-54-0 Ammonium Persulfate | 8008-79-5 Spearmint Oil <18> | 12124-99-1 Ammonium Sulfide | 61789-40-0 Cocamidopropyl Betaine |
| 3012-65-5 Ammonium Citrate | 7732-18-5 Water or Steam | 8012-14-4 Sodium Hexametaphosphate | 12125-1-8 Ammonium Fluoride | 61789-77-3 Dicoco Dimethyl Ammonium Chloride |
| 3039-83-6 Ethylenesulfonic Acid, Sodium Salt | 7733-2-0 Zinc Sulfate | 8013-7-8 Soybean Oil, epoxidized | 12125-2-9 Ammonium Chloride | 61804-50-0 Divinyl Benzene |
| 3251-23-8 Copper Nitrate | 7738-94-5 Chromic Acid | 8013-54-5 Chloroform | 12259-92-6 Ammonium Polysulfide | 63449-41-2 Benzyltrimethylammonium Chloride |
| 3710-84-7 Diethyl Hydroxylamine | 7757-79-1 Potassium Nitrate | 8014-95-7 Oleum (Fuming Sulfuric) | 12379-40-7 Imidazoline Acetate | 65996-63-6 Corn Starch |
| 4316-73-8 Sodium Sarcosinate | 7757-82-6 Sodium Sulfate | 8016-79-3 Beet Sugar Liquor | 12501-45-0 Ammonium Molybdate | 68002-20-0 Melamine Formaldehyde Resin |
| 5329-14-6 Sulfamic Acid | 7757-83-7 Sodium Sulfite | 8017-16-1 Polyphosphoric Acid | 13473-90-0 Ammonium Nitrate | 68131-30-6 Green Liquor (Pulp Mill) |
| 5421-46-5 Ammonium Thioglycolate | 7757-87-1 Magnesium Phosphate | 8017-16-1 Superphosphoric Acid | 13478-10-10 Ferrous Chloride | 68412-54-4 Nonyl(phenoxypoly(ethyleneoxy)ethanol, branched |
| 5536-61-8 Sodium Methacrylate | 7758-1-2 Potassium Bromate | 8027-16-5 Cresols, Mixture | 13520-68-9 Ferrous Nitrate | 68439-50-9 Ethoxylated Alcohol, C12-C14 |
| 5996-10-1 Glucose | 7758-2-3 Potassium Bromide | 8028-89-5 Caramel | 13598-36-2 Phosphorous Acid, ortho- | 68439-57-6 Sodium alpha-Olefin Sulfonate |
| 6164-98-3 Chlordimeform Insecticide | 7758-11-4 Dipotassium Phosphate | 8029-43-4 Corn Syrup | 13601-19-9 Sodium Ferrocyanide | 68476-34-6 Diesel Fuel |
| 6303-21-5 Hypophosphorous Acid | 7758-19-2 Sodium Chlorite | 8032-32-4 Naphtha | 13674-87-8 Dichloro-(2)-Propyl Phosphate | 68476-78-8 Molasses |
| 6484-52-2 Ammonium Nitrate | 7758-29-4 Sodium Tripolyphosphate | 8052-42-4 Asphalt | 13746-66-2 Potassium Ferricyanide | 68514-06-7 Ammonium Bisulfite Liquor (black liquor) |
| 6871-90-2 Potassium Silicofluoride | 7758-98-7 Copper Sulfate | 8061-53-8 Lignin Sulfonate | 13746-66-2 Potassium Ferricyanide | 68526-83-0 Isooctyl Alcohol |
| 6899-5-4 Glutamic Acid | 7761-88-8 Silver Nitrate | 8062-15-5 Copper Sulfate | 13746-66-2 Potassium Ferricyanide | 68526-85-2 Alcohol, Isodecyl: e.g., isodecanol |
| 6915-15-7 Malic Acid | 7772-98-7 Sodium Thiosulfate | 8064-96-2 Cashew Nut Oil | 13770-89-3 Nickel Sulfamate | 68603-42-9 Coconut Fatty Acid |
| 7320-34-5 Potassium Pyrophosphate | 7772-99-8 Stannous Chloride | 8140-1-2 Cocamidopropyl Dimethylamine | 13774-25-9 Magnesium Bisulfite | 72674-5-6 Alpha Olefin Sulfonate |
| 7378-99-6 Alkyl (C8-C10) Dimethyl Amine; e.g., octyldimethyl amine | 7773-1-5 Manganese Chloride (Manganous Chloride) | 9002-85-1 Polyvinylidene Chloride (PVDC) | 13814-97-6 Tin Fluoborate | 74552-83-3 Trichloroethane (1,1,1-) |
| 7439-97-6 Mercury | 9002-86-2 Sodium Chlorate | 9002-86-2 Polyvinyl Chloride (PVC) | 13826-88-5 Zinc Fluoborate | 84961-48-8 Coconut Oil |
| 7446-9-5 Sulfur Dioxide | 9002-89-5 Sodium Chromate | 9002-89-5 Polyvinyl Alcohol | 13840-33-0 Lithium Hypochlorite | 91722-14-4 Epoxidized Soybean Oil |
| 7446-11-9 Sulfur Trioxide | 9002-98-6 Sodium Hydrosulfite | 9003-1-4 Polyethyleneimine | 13843-59-9 Ammonium Bromate | 95077-5-7 Kaolin Slurry |
| 7446-70-0 Aluminum Chloride | 9003-1-4 Sodium Persulfate | 9003-1-4 Polyacrylic Acid | 13846-18-9 Calcium Bisulfite | 97328-76-2 Carbonic Acid |
| 7447-39-4 Cupric Chloride, see Copper Chloride | 9003-4-7 Potassium Dichromate | 9003-5-8 Polyacrylamide | 13943-58-3 Potassium Ferrocyanide | 99400-1-8 Calcium Sulfate |
| 7447-40-7 Potassium Chloride | 9003-5-8 Sodium Polyacrylate | 9003-20-7 Polyvinyl Acetate Emulsion | 13967-50-5 Potassium Gold Cyanide | 99551-14-1 Oils, Mineral (aliphatic) |
| 7447-41-8 Lithium Chloride | 9003-5-8 Phenolic Resin | 9003-35-4 Carboxymethylcellulose | 14216-75-2 Nickel Nitrate | 105839-17-6 Epoxidized Castor Oil |
| 7487-88-9 Magnesium Sulfate | 9004-32-4 Zinc Hydroxide | | 14217-21-1 Sodium Ferricyanide | |
| 7487-94-7 Mercuric Chloride | | | | |

CHEMICAL RESISTANCE TABLE

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-------------|----------|-------------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Acetaldehyde | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Acetaldehyde | 100 | NR | NR | NR | NR | LS | NR | | | NR |
| Acetic Acid <21> | 0.5–10 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Acetic Acid | 11–25 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Acetic Acid | 26–50 | 80/180 | 80/180 | 65/150 | 100/210 | 80/180 | 80/180 | 80/180 | 100/210 | |
| Acetic Acid | 51–75 | 65/150 | 65/150 | 45/110 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | |
| Acetic Acid | 76–85 | 45/110 | 45/110 | 45/110 | 45/110 | 45/110 | 45/110 | 45/110 | 45/110 | |
| Acetic Acid, glacial <2> | 86–100 | NR | NR | | | 40/100 | NR | NR | | NR |
| Acetic Acid/Nitric Acid/Chromic Oxide | 3:5:3 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | 65/150 |
| Acetic Acid/Sulfuric Acid | 20:10 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Acetic Anhydride | 100 | NR | NR | | | 40/100 | NR | NR | NR | NR |
| Acetone | 10 | | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Acetone | 20 | | 30/85 | | | 40/100 | | | | |
| Acetone <15> | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Acetone (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Acetone/Toluene <15> | 50:50 | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Acetonitrile | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Acetonitrile | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Acetonitrile (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Acetophenone | 100 | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Acetyl Acetone | 20 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Acetyl Acetone | 100 | NR | NR | | | LS | NR | NR | | NR |
| Acid Cleaner (31% Hydrochloric Acid) <2,8,9,13> | 31 | 65/150 | 70/160 | | | 80/180 <15> | 65/150 | 80/180 <15> | | 65/150 |
| Acrolein (Acrylaldehyde) | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Acrolein (Acrylaldehyde) | 100 | NR | NR | | | LS | NR | NR | | NR |
| Acrylamide | 50 | 40/100 | 40/100 | 25/80 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|--------------------------------------|---|---------|--------|--------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Acrylic Acid <7> | 10 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | |
| Acrylic Acid <7> | 25 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 |
| Acrylic Acid | 100 | NR | NR | | | LS | NR | NR | | NR |
| Acrylic Latex | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Acrylonitrile | 7 (max. solubility at 20 °C (68 °F)) | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Acrylonitrile | 100 | NR | NR | | | LS | NR | NR | | NR |
| Acrylonitrile, latex dispersion <7> | 2 | 25/80 | 25/80 | NR | | 25/80 | 25/80 | 25/80 | | 25/80 |
| Activated Carbon Beds, water treatment | | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | 100/210 | 65/150 |
| Adipic Acid (1.5 g sol. in water at 25 °C (77 °F), sol. hot water) | 23 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Air (max. surface temperature of the FRP) <16> | | 180/360 | 180/360 | 95/200 | | 200/392 | 160/320 | 160/320 | | |
| Alachlore, Herbicide <4> | All | | | | | 40/100 | | | | |
| Alcohol, see Ethanol | | | | | | | | | | |
| Alcohol, Amyl | 100 | 50/120 | 60/140 | | | 65/150 | 50/120 | 60/140 | | 50/120 |
| Alcohol, Butyl | 100 | 50/120 | 50/120 | | | 65/150 | 50/120 | 50/120 | | NR |
| Alcohol, Ethyl | 95 | 25/80 | 25/80 | | | 40/100 | 25/80 | 25/80 | | NR |
| Alcohol, Isodecyl | 100 | 50/120 | 65/150 | | | 80/180 | 50/120 | 65/150 | | 50/120 |
| Alcohol, Propyl | 100 | 40/100 | 40/100 | | | 50/120 | 40/100 | 40/100 | | NR |
| Alkaline Cleaner, see Sodium Hydroxide and Potassium Hydroxide | | | | | | | | | | |
| Alkaline Solutions, see Sodium, Potassium, and Ammonium Hydroxides and Carbonates | | | | | | | | | | |
| Alkane Sulfonate, see Sodium Dodecylbenzene Sulfonate | | | | | | | | | | |
| Alkyl (C8-C10) Dimethyl Amine | 100 | 80/180 | 95/200 | | | 100/210 | 80/180 | 95/200 | | |
| Alkyl (C8-C18) Chloride <21> | All | 80/180 | 95/200 | | | 100/210 | 95/200 | 100/210 | | |
| Alkyl Aryl Sulfonic Acid, see Alkyl Benzene Sulfonic Acid | | | | | | | | | | |
| Alkyl Benzene Sulfonic Acid <6,21> | All | 80/180 | 80/180 | 80/180 | | 100/210 <24> | 95/200 | 100/210 | 80/180 | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Alkyldiphenyloxide Disulfonate (anionic surfactant type) | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Alkyltolyl Trimethyl Ammonium Chloride | | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | |
| Allyl Alcohol | 100 | NR | NR | | | 25/80 | NR | NR | | NR |
| Allyl Chloride | 100 | 25/80 | 25/80 | 25/80 | | 25/80 | 25/80 | 25/80 | 25/80 | NR |
| Alpha-Oleum Sulfates | 100 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Alpha-Methylstyrene | 100 | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | NR |
| Alum <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Alumina Hydrate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Aluminum Bromide <21> | All | | | 70/160 | | | 70/160 | | | |
| Aluminum Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Aluminum Chlorohydrate <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Aluminum Chlorohydrate/Hydrochloric Acid <2,8,9,12,13> | > 0.5:15 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 65/150 |
| Aluminum Chlorohydroxide | 50 | 100/210 | 100/210 | 100/210 | | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Aluminum Citrate <21> | All | | | 95/200 | 95/200 | | 95/200 | | 95/200 | |
| Aluminum Fluoride <1> | All | 25/80 | 25/80 | 30/90 | 30/90 | 25/80 | 25/80 | 25/80 | 30/90 | 25/80 |
| Aluminum Hydroxide | 100 | 80/180 | 80/180 | | | 95/200 | 80/180 | 80/180 | | 80/180 |
| Aluminum Nitrate | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 <24> | 100/210 | 100/210 | 80/180 | 80/180 |
| Aluminum Potassium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Aluminum Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Aluminum Sulfate Reactor <10> | > 0.5 | 100/210 | 100/210 | | | | 100/210 | | | |
| Amine Salts | All | 50/120 | 65/150 | 50/120 | 65/150 | 65/150 | 50/120 | 65/150 | 65/150 | |
| Amino Acids | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Aminoethyl Piperazine | 100 | | | | | | NR | | | |
| Ammonia | Liquified gas | NR | NR | | | NR | NR | NR | | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|-------------------------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Ammonia gas | 100 | 40/100 | 40/100 | 80/180 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 |
| Ammonia, fumes, wet | 40 vol-% | 80/180 | 80/180 | 65/150 | NR | 80/180 | 80/180 | 80/180 | NR | |
| Ammonia, aqueous, see Ammonium Hydroxide | | | | | | | | | | |
| Ammonium Acetate | All | 25/80 | 25/80 | 45/110 | | 40/100 | 25/80 | 25/80 | | NR |
| Ammonium Benzoate | All | 80/180 | | 80/180 | | | 80/180 | | | |
| Ammonium Bicarbonate | All | 70/160 | 70/160 | 65/150 | 65/150 | 70/160 | 70/160 | 70/160 | 65/150 | 70/160 |
| Ammonium Bifluoride <1> | All | 65/150 | 65/150 | | | 65/150 | | | | 65/150 |
| Ammonium Bisulfite black liquor | | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | |
| Ammonium Bisulfite cooking liquor | | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | |
| Ammonium Bromate | All | 70/160 | 70/160 | | | 70/160 | 70/160 | 70/160 | | 70/160 |
| Ammonium Bromide | All | 70/160 | 70/160 | | | 70/160 | 70/160 | 70/160 | | 70/160 |
| Ammonium Carbonate | All | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Ammonium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ammonium Citrate | All | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Ammonium Fluoride <1> | All | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Ammonium Hydroxide <21> | 0.5–1 (as NH ₃) | 80/180 | 80/180 | 95/200 | | 65/150 | 95/200 | 65/150 | | 80/180 |
| Ammonium Hydroxide | 2–5 (as NH ₃) | 80/180 | 80/180 | 80/180 | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Ammonium Hydroxide | 6–10 (as NH ₃) | 65/150 | 65/150 | 70/160 | | 40/100 | 70/160 | 40/100 | | 65/150 |
| Ammonium Hydroxide | 11–20 (as NH ₃) | 65/150 | 65/150 | 50/120 | | 40/100 | 65/150 | 40/100 | | 65/150 |
| Ammonium Hydroxide | 21–28 (as NH ₃) | 50/120 | 40/100 | 50/120 | | 40/100 | 50/120 | 40/100 | | 40/100 |
| Ammonium Hydroxide | 29–30 (as NH ₃) | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Ammonium Hydroxide/Ammonium Chloride/Ammonium Carbonate <1> | 30 (as NH ₃):35:5 | 40/100 | 40/100 | | | | 40/100 | 40/100 | | 40/100 |
| Ammonium Lauryl Sulfate | All | 50/120 | 50/120 | 55/130 | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Ammonium Ligno Sulfonate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Ammonium Metatungstate (AMT) (pH 3.3) | 50 | | | | | | LS80/180 | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------------------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Ammonium Molybdate | All | 65/150 | | | | | | | | 65/150 |
| Ammonium Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ammonium Nitrate/Urea/Water (fertilizer) | up to 40/up to 50/ balance | | | | | | 50/120 | | | |
| Ammonium Oxalate | All | 65/150 | 65/150 | | | | | | | |
| Ammonium Pentaborate | All | 50/120 | 50/120 | | | | | | | 50/120 |
| Ammonium Perchlorate | All | 75/170 | | | | | | | | |
| Ammonium Persulfate <21> | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 <24> | 100/210 | 100/210 | 80/180 | 80/180 |
| Ammonium Phosphate, dibasic <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ammonium Phosphate, monobasic <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ammonium Polysulfide | All | 50/120 | 50/120 | | | 65/150 | | | | 50/120 |
| Ammonium Propionate | All | 25/80 | 25/80 | | | 40/100 | 25/80 | 25/80 | | NR |
| Ammonium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ammonium Sulfate/Ethyl Alcohol/Ethoxylate | 60:15:3 | 40/100 | 50/120 | | | 65/150 | 40/100 | 50/120 | | 40/100 |
| Ammonium Sulfate/Manganous Sulfate/Sulfuric Acid (concentrations in g/l) | up to 150:up to 15: up to 40 | | | 50/120 | 50/120 | | 50/120 | | | |
| Ammonium Sulfide (Bisulfide) | All | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | | 50/120 | 50/120 |
| Ammonium Sulfite | All | 65/150 | 65/150 | 40/100 | 40/100 | 65/150 | 65/150 | | 40/100 | 65/150 |
| Ammonium Thiocyanate | All | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | |
| Ammonium Thioglycolate | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Ammonium Thiosulfate | All | 40/100 | 40/100 | | | 40/100 | 60/140 | 60/140 | 40/100 | |
| Amyl Acetate | > 0.5 | 20/70 | 40/100 | 40/100 | 50/120 | 50/120 | NR | | 50/120 | |
| Amyl Acetate/Xylene | 30:70 | | | 50/120 | | | | | | |
| Amyl Alcohol | 100 | 50/120 | 60/140 | 95/200 | 95/200 | 65/150 | 50/120 | 60/140 | 95/200 | 50/120 |
| Amyl Alcohol, Vapor | 100 | 50/120 | 100/210 | | | 100/210 | 50/120 | 100/210 | | |
| Amyl Chloride | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Anaerobic Sewage | All | 30/85 | | 30/85 | 30/85 | 30/85 | 30/85 | | 30/85 | |
| Aniline | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Aniline | 100 | NR | NR | NR | NR | 20/70 | NR | NR | NR | NR |
| Aniline Hydrochloride | > 0.5 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Aniline Sulfate <21> | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | |
| Animal Fat <21> | 100 | 80/180 | 100/210 | | | | | | | |
| Anionic Surfactant | All | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | |
| Anionic/Cationic Polymer Emulsions in Kerosene or Petroleum Distillates/Water | 0-50 | 40/100 | 50/120 | | | 50/120 | | | | |
| Anodize (15% Sulfuric Acid) | | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Anthraquinone Disulfonic Acid | 1 | 65/150 | | 65/150 | | | 65/150 | | | |
| Antimony Pentachloride, for aqueous solutions, see Hydrochloric Acid | > 99 | 40/100 | 40/100 | 30/90 | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Antimony Trichloride | 100 | 95/200 | | 105/220 | 105/220 | | 95/200 | | 105/220 | |
| Aqua Regia (concentrated Hydrochloric Acid/Nitric Acid, 3:1 <2,6,9> | | | | NR | NR | | NR | | NR | |
| Aromatic Naphtha/Naphthalene/Isopropanol | 60:5:10 | | 50/120 | | | 50/120 | | 50/120 | | |
| Arsenic Acid | > 0.5 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Arsenic Acid/Copper Sulfate/Sodium Dichromate | 17:37:20 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Arsenic Pentoxide/Copper Oxide/Chromic Acid | 17:9:24 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Arsenious Acid | 19°Be | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Barium Acetate | All | 80/180 | 80/180 | 90/195 | 80/180 | 80/180 | 90/195 | 80/180 | 80/180 | |
| Barium Bromide <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Barium Carbonate (slurry) | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Barium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Barium Cyanide | All | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Barium Hydroxide <21> | > 0.5 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Barium Sulfate | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|----------------------|----------|-----------|----------------------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Barium Sulfide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Barley Solution <18> | > 0.5 | 75/170 | 75/170 | | | | | | | |
| Beer <18> | > 0.5 | 50/120 | 50/120 | | | | | | | |
| Beet Sugar Liquor <18> | > 0.5 | 80/180 | 80/180 | 80/180 | 80/180 | | | | 80/180 | |
| Benzal Chloride (Benzyl Dichloride) | 100 | NR | | | | | | | | |
| o-Benzoyl Benzoic Acid | All | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Benzaldehyde | 100 | NR | NR | | | 20/70 | NR | NR | NR | NR |
| Benzalkonium Chloride | Dilute | 40/100 | 40/100 | | | | | | | 40/100 |
| Benzene | 100 | NR | NR | 40/100 | 40/100 | 40/100; LS 50/120 | NR | LS 50/100 | 40/100; LS 50/100 | NR |
| Benzene, vapor | | 25/80 | 25/80 | | | 50/120 | NR | 25/80 | | NR |
| Benzene/Methyl Tertiary Butyl Ether | 80:20 | NR | NR | | | 40/100 | NR | LS | | NR |
| Benzene/Ethyl Benzene/Toluene/Trimethyl Benzene/Xylene | All | NR | NR | | | 40/100 | NR | LS | | NR |
| Benzene/Ethylbenzene | 33:67 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Benzenesulfonic Acid <6> | All | 65/150 | 65/150 | 80/180 | 80/180 | 65/150 | 65/150 | 65/150 | 80/180 | 65/150 |
| Benzenesulfonic Acid/Sulfuric Acid/balance Water | 88:7 | 60/140 | | 60/140 | | | 60/140 | | | |
| Benzenesulfonyl Chloride | 100 | NR | NR | | | LS | NR | NR | | NR |
| Benzoic Acid | Sat'd | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Benzotrichloride | 100 | NR | | | | | NR | | | |
| Benzoyl Chloride | 100 | NR | | | | | NR | | | |
| Benzoylbenzoic Acid (o-) | 100 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | | 100/210 | |
| Benzyl Alcohol | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Benzyl Alcohol | 100 | NR | 25/80 | 40/100 | 40/100 | 40/100 | NR | 25/80 | 25/80 | NR |
| Benzyl Chloride <2> | All | NR | NR | 25/80 | 25/80 | 40/100 | NR | NR | 25/80 | NR |
| Benzyltrimethylammonium Chloride | 60 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Biocide Chlorphenate (organic sulfur type, blend) | 100 | 50/120 | | 50/120 | | | 50/120 | | | |
| Biodiesel/FAME (max. 0.2% Methanol) | | 80/180 | 80/180 | | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | |
| Black Liquor (pulp & kraft mill) <1,2> | Thin | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | |
| Black Liquor, thick, heavy (pulp & kraft mill) <1,2> | Thick | 95/200 | 105/220 | | | 105/220 | 105/220 | 105/220 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|----------------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Black Liquor recovery, furnace gases <6,16> | | 165/325 | 175/350 | 115/240 | 115/240 | 205/400 | 165/325 | 175/350 | 115/240 | |
| Bleach (please check the composition of the product and refer to the type of bleaching agent used like Hydrogen Peroxide, Sodium Hypochlorite, etc.) <14> | | | | | | | | | | |
| Blow Down (non-condensable gases from pulp digester; i.e., Dimethyl Sulfide and Mercaptanes) <8> | | 120/250 | 120/250 | | | 120/250 | 120/250 | 120/250 | | |
| Borax (Sodium Borate, Sodium Tetraborate) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Boric Acid | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Boron Trichloride, scrubbing | > 0.5 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | |
| Brake Fluid | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 <7> | 50/120 | 50/120 | 50/120 | 50/120 |
| Brass Plating Solution (3% Copper, 1% Zinc, 5.6% Sodium Cyanides, 3.0% Sodium Carbonate) <1> | | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Brine, chlorinated, pH < 2.5 <8,21> | All | 80/180 | 80/180 | 80/180 | 80/180 | 95/200 | 80/180 | 95/200 | 80/180 | |
| Brine, chlorinated, pH 2.5–9 <6> | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Brine, chlorinated, pH > 9 <2,3,9> | All | 80/180 | 80/180 | 65/150 | | 65/150 | 80/180 | 65/150 | | |
| Brine Mixture (0.4% MgSO ₄ , 9.5% NaCl, 5.0% Na ₂ SO ₄ , 2.0% K ₂ SO ₄ , 7% CaSO ₄ ·2H ₂ O, 3% Na ₂ SO ₃ ·9H ₂ O, pH 7) | | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Brine, salt <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Brominated Phosphate Ester | > 0.5 | | | | | 50/120 | | | | |
| Bromine Water, laboratory reagent | 3.2 g in 100 g water | | | 95/200 | | | 80/180 | | | |
| Bromine, dry gas | 100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 <7> | 40/100 | 40/100 | 40/100 | 40/100 |
| Bromine in Water (no pure Bromine phase) | < Sat'd | 75 | | | | 80/180 | | | | |
| Bromine, liquid | 100 | NR | NR | | | NR | NR | NR | | NR |
| Bromine, wet gas | 100 | 40/100 | 40/100 | 30/90 | 30/90 | 40/100 | 40/100 | 40/100 | 30/90 | 40/100 |
| Bronze Plating Solution (4% Copper, 5% Sodium Cyanides, 3% Sodium Carbonate, 4.5% Rochelle Salts) | | 80/180 | | 80/180 | 80/180 | | | | 80/180 | |
| Brown Stock | | 95/200 | 95/200 | 80/180 | | 80/180 | 95/200 | 80/180 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Bunker C Fuel Oil (heavy fraction) | 100 | 100/210 | 105/220 | | | 105/220 | 100/210 | 105/220 | | 65/150 |
| Butadiene, gas <2> | 100 | 45/110 | 45/110 | | | 45/110 | 45/110 | 45/110 | | 45/110 |
| Butane | 100 | 60/140 | 60/140 | | | 60/140 | 65/140 | 60/140 | | 60/140 |
| Butanol | 100 | 50/120 | 50/120 | | | 65/150 | 50/120 | 50/120 | | NR |
| Butyl Acetate | 100 | NR | 25/80 | 30/90 | 30/90 | 30/90 | NR | 25/80 | 30/90 | NR |
| Butyl Acrylate | 100 | NR | NR | | | 25/80 | NR | NR | | NR |
| Butyl Alcohol | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | 50/120 | 50/120 | 50/120 | NR |
| Butyl Ether, see Dibutyl Ether (-n) | | | | | | | | | | |
| Butyl Alcohol/Benzene | 93:4 | NR | 40/100 | | | 50/120 | NR | 40/100 | | NR |
| Butyl Amine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Butyl Benzoate | 70 | | | | | 40/100 | | | | |
| Butyl Benzyl Phthalate | 100 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | |
| Butyl Chloride | 0.1–100 | NR | LS | | | 25/80 | NR | LS | | NR |
| Butyl Hypochlorite | 98 | NR | NR | | | NR | NR | NR | | NR |
| Butyl Stearate (5% in Mineral Spirits) | | 40/100 | 40/100 | | | | | | | |
| Butylene Glycol | 100 | 70/160 | 80/180 | 80/180 | 80/180 | 80/180 | 70/160 | 80/180 | 80/180 | |
| Butylene Oxide | 100 | NR | NR | | | LS | NR | NR | | NR |
| Butyraldehyde | 100 | NR | NR | | | 40/100 | NR | NR | | NR |
| Butyric Acid <21> | 0.5–50 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | |
| Butyric Acid | 51–70 | 50/120 | | 50/120 | 50/120 | | 50/120 | | 50/120 | |
| Butyric Acid | 71–100 | 25/80 | 50/120 | 40/100 | 50/120 | 50/120 | 25/80 | 50/120 | 50/120 | |
| Cadmium Chloride <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Cadmium Cyanide Plating Solution (3% Cadmium Oxide, 10% Sodium Cyanide, 1.2% Sodium Hydroxide) <1> | | 80/180 | 80/180 | 105/220 | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Calcium Bisulfite <21> | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 <24> | 100/210 | 100/210 | 80/180 | 80/180 |
| Calcium Bromide <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Calcium Carbonate (slurry) <21> | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Calcium Chlorate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Calcium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Calcium Hydroxide <1> | 100 | 100/210 | 100/210 | 40/100 | 40/100 | 100/210 | 100/210 | 100/210 | 40/100 | 80/180 |
| Calcium Hydroxide (slurry) <1> | 0.5–25 | 80/180 | 65/150 | | | 40/100 | 80/180 | 65/150 | | 65/150 |
| Calcium Hypochlorite <2,3,5,9,17> | All | 80/180 | 80/180 | 70/160 | 70/160 | 40/100 | 80/180 | 80/180 | 70/160 | 80/180 |
| Calcium Nitrate | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Calcium Sulfate (slurry) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Calcium Sulfite <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Cane Sugar Liquor & Sweetwater <18> | All | 80/180 | 80/180 | | | | | | | |
| Capric Acid (Decanoic Acid) <4> | > 0.5 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Capric Acid/Lauric Acid/Fatty Acids (C10-C18) | 70:15:15 | 80/180 | 80/180 | | | 95/200 | 80/180 | 80/180 | | 80/180 |
| Caproic Acid (Hexanoic Acid) | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | 25/80 |
| Caprolactam | 0–50 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Caprolactam | 100 | NR | NR | | | LS | NR | NR | | NR |
| Caprolactone | 100 | NR | NR | | | LS | NR | NR | | NR |
| Caprylic Acid (Octanoic Acid) | 100 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | |
| Caramel <18> | All | 50/120 | 50/120 | | | | | | | |
| Carbon Dioxide Gas <16> | All | 165/325 | 175/350 | 120/250 | 120/250 | 205/400 | 165/325 | 175/350 | 120/250 | 80/180 |
| Carbon Disulfide | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Carbon Disulfide (no condensation or coalescence) | Fumes | 40/100 | 65/150 | 40/100 | 65/150 | 65/150 | 40/100 | 65/150 | 65/150 | NR |
| Carbon Monoxide Gas <16> | All | 165/325 | 175/350 | 120/250 | | 205/400 | 165/325 | 175/350 | 175/350 | 80/180 |
| Carbon Tetrachloride | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | | | 50/120 | |
| Carbon Tetrachloride (no condensation or coalescence) | Fumes | 80/180 | 95/200 | 65/150 | 95/200 | 95/200 | 80/180 | 95/200 | 95/200 | |
| Carbonic Acid | All | | | 70/160 | | | 70/160 | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|--------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Carbonic Acid/Magnesium Salt | All | 80/180 | 80/180 | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Carboxyethyl Cellulose | 10 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Carboxymethyl Cellulose | 10 | 65/150 | | 80/180 | 65/150 | | 65/150 | | 65/150 | |
| Cashew Nut Oil | 100 | 65/150 | 65/150 | | | | | | | |
| Castor Oil (Ricinus Oil) | 100 | 70/160 | 70/160 | 50/120 | 50/120 | 70/160 | 70/160 | 70/160 | 50/120 | 70/160 |
| Cationic/Anionic Polymer Emulsions in Kerosene or Petroleum Distillates/Water | 0-50 | 40/100 | 50/120 | | | 50/120 | | | | |
| Caustic, see Sodium Hydroxide | | | | | | | | | | |
| Cerous Nitrate | All | 30/90 | | 30/90 | 30/90 | | 30/90 | | 30/90 | |
| Cetyl Alcohol (Hexadecanol) | 100 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | 50/120 |
| Chlordimeform Insecticide | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | |
| Chloric Acid | All | 25/80 | 25/80 | | | 25/80 | 25/80 | 25/80 | | 25/80 |
| Chlorinated Brine; see Brine, chlorinated | | | | | | | | | | |
| Chlorinated Paraffin Wax | 100 | 80/180 | | 95/200 | 80/180 | | 80/180 | | 80/180 | |
| Chlorinated Pulp <6> | All | 80/180 | 90/195 | | 95/200 | 95/200 | 90/195 | 95/200 | 95/200 | |
| Chlorinated Solvent Recovery, see specific solvents | | | | | | | | | | |
| Chlorinated Wax | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Chlorination Washer (hoods & vent systems) | Fumes | 80/180 | 95/200 | | | 95/200 | 80/180 | 95/200 | | 65/150 |
| Chlorine Dioxide Generator Effluent, R2 system <6> | | 65/150 | 80/180 | 80/180 | | 80/180 | 65/150 | 80/180 | | 65/150 |
| Chlorine Dioxide (<1 g/l) <6> | | | | 80/180 | 80/180 | | 60/140 | | 80/180 | |
| Chlorine Dioxide (chilled liquid) <6> | | | | 7/45 | | | 7/45 | | | |
| Chlorine Dioxide Scrubber <1,2,3> | | 75/170 | 75/170 | | | | 75/170 | | | |
| Chlorine Dioxide, Chlorine (bleaching solution, with or without pulp) <6> | All | 80/180 | 90/195 | | | 95/200 | 90/195 | 95/200 | | |
| Chlorine Dioxide, no Chlorine (bleaching solution, with or without pulp) <6> | All | 80/180 | 90/195 | | | 95/200 | 90/195 | 95/200 | | |
| Chlorine Dioxide, solution storage <9> | Sat'd | 20/70 | 20/70 | | | 20/70 | 20/70 | 20/70 | | |
| Chlorine Water, see Brine, chlorinated | | | | | | | | | | |
| Chlorine, dry gas <2,8,17> | 100 | 80/180 | 90/195 | 100/210 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|--------|--------|------------------------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Chlorine, wet gas, acidic pH <2,8,17> | 100 | 80/180 | 90/195 | 80/180 | 80/180 | 100/210 | 80/180 | 100/210 | 80/180 | 65/150 |
| Chlorine/Chlorine Dioxide/Sulfur Dioxide | 0.8:2:0.7 | 95/200 | 95/200 | | | 95/200 | 95/200 | 95/200 | | 80/180 |
| Chlorine-Hydrogen Chloride, with aqueous condensate <8,9,12,16> | 8–10% HCl | 80/180 | 100/210 | | | 100/210; LS 175/350 | 80/180 | 100/210 | | 80/180 |
| Chloroacetic Acid (Monochloroacetic Acid) | 1 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | |
| Chloroacetic Acid | 2–25 | 50/120 | 50/120 | 40/100 | 40/100 | 50/120 | 50/120 | 50/120 | 40/100 | |
| Chloroacetic Acid | 26–50 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | |
| Chloroacetic Acid | 51–79 | 25/80 | 25/80 | | | 30/90 | 25/80 | 30/90 | | |
| Chloroacetic Acid | 80–85 | 25/80 | 25/80 | | | 25/80 | 25/80 | 25/80 | | |
| Chloroacetic Acid | 86–100 | NR | NR | | | LS | NR | NR | | NR |
| Chlorobenzene | 1 | | | 25/80 | 25/80 | | | | 25/80 | |
| Chlorobenzene | 100 | NR | 25/80 | 25/80 | 25/80 | 40/100 | NR | 25/80 | 25/80 | NR |
| Chlorodifluoromethane <1> | 100 | 25/75 | | 25/75 | | | 25/80 | | | |
| Chlorofluorocarbon (CFC): R-11 (Trichlorofluoromethane), R-12 (Dichlorodifluoromethane) <1> | 100 | 25/80 | 40/100 | | | 40/100 | 25/80 | 40/100 | | NR |
| Chlorofluorocarbon (CFC): CFC-113 (Trichlorotrifluoroethane) <1> | | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Chloroform | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Chloroform (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Chloroform/Dichloroethane/Methylene Chloride | All | NR | NR | | | LS | NR | NR | | NR |
| Chloropentane (1 to 5 Cl) | 100 | 40/100 | 50/120 | | | 55/130 | 40/100 | 50/120 | | NR |
| Chloropicrin (Nitrochloroform) | 100 | NR | NR | | | LS | NR | NR | | NR |
| Chloropyridine (tetra) | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | NR |
| Chlorosulfonic Acid | 10 | NR | NR | | | NR | NR | NR | | NR |
| Chlorosulfonic Acid | 100 | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| Chlorotoluene | 100 | 25/80 | 40/100 | | | 40/100 | 25/80 | 40/100 | | NR |
| N-Chloro-o-Tolyl (insecticide emulsion) | 10 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Choline Chloride | All | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | 50/120 |
| Chrome Plating Solution (19% Chromic Acid with Sodium Fluorosilicate and Sulfate) <1> | | 50/120 | 50/120 | 40/100 | | 65/150 | 50/120 | 50/120 | 50/120 | 50/120 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Chrome Reduction Process <6> | 25 | 90/195 | | | | | 90/195 | | | |
| Chromic Acid <2> | 0.5–10 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Chromic Acid <2> | 11–20 | 50/120 | 65/150 | 50/120 | 50/120 | 65/150 | 65/150 | 65/150 | 50/120 | 50/120 |
| Chromic Acid <2> | 25 | | | | | 55/100 | | | | |
| Chromic Acid <2> | 30 | LS | LS | NR | NR | LS | LS | LS | NR | |
| Chromic Acid <2> | 40 | NR | NR | NR | NR | LS | NR | NR | NR | |
| Chromic Acid/Nitric Acid mixture <2> | 5:10 | 40/100 | 50/120 | | | 65/150 | 40/100 | 40/100 | | 40/100 |
| Chromic Acid: Sodium Metabisulfite <2> | 15:45 | 50/120 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 50/120 |
| Chromic Acid/Sulfuric Acid mixture (Maximum total concentration 10%) <2> | 10 | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | 50/120 |
| Chromic Acid/Sulfuric Acid <2> | 3:16 | NR | | | | | NR | | | |
| Chromic Acid/Sulfuric Acid <2> | 20:20 | NR | | | | | NR | | | |
| Chromium Plate, electroplating with a salt solution (with Sulfuric Acid: not recommended) | | 55/130 | 55/130 | | | 55/130 | 55/130 | 55/130 | | 55/130 |
| Chromium Sulfate, water-soluble forms (Chromous Sulfate) <21> | All | 100/210 | 100/210 | 65/150 | 65/150 | 100/210 <24> | 100/210 | 100/210 | 65/150 | 80/180 |
| Citric Acid | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Cleaner (heavy-duty phenolic-based disinfectant cleaner) <14> | 100 | | | 40/100 | | | 40/100 | | | |
| Cleaner, liquid (biodegradable, all purpose) <14> | | 40/100 | | 40/100 | | | 40/100 | | | |
| Clopidol <4> | All | | | | | 40/100 | | 40/100 | | |
| Cobalt Chloride <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Cobalt Chloride reactor (Hydrochloric Acid/Sulfuric Acid) <10> | 40 | | 95/200 | | | | | | | |
| Cobalt Citrate | 12 | 80/180 | 80/180 | | | 80/180 | | | | 50/120 |
| Cobalt Nitrate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Cocamidopropyl Betaine | 100 | 50/120 | | 50/120 | | | 50/120 | | | |
| Cocamidopropyl Dimethylamine | 100 | 50/120 | | 50/120 | | | 50/120 | | | |
| Coconut Oil <18> | 100 | 80/180 | 95/200 | 80/180 | 80/180 | 95/200 | 80/180 | 95/200 | 80/180 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Cod Liver Oil <18> | 100 | 40/100 | 40/100 | | | | | | 40/100 | |
| Copper Acetate | All | 70/160 | | 80/180 | | | 70/160 | | | |
| Copper Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Copper Chloride/Ammonium Chloride/Ammonium Hydroxide, see Ammonium Hydroxide | 26:5:2 | | | | | | | | | |
| Copper Cyanide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Copper Cyanide Plating Solution (10.5% Copper, 14% Sodium Cyanides, 6% Rochelle Salts) | | 70/160 | 70/160 | 80/180 | 80/180 | 70/160 | 70/160 | 70/160 | 80/180 | 70/160 |
| Copper Cyanide/Potassium Cyanide/Potassium Hydroxide <1> | 7:2.5:2 | 65/150 | 40/100 | | | 25/80 | 65/150 | 25/80 | | |
| Copper Matte Dipping Bath (30% Iron Chloride, 19% Hydrochloric Acid) <8,9,13> | | 80/180 | 95/200 | 95/200 | 95/200 | 95/200 | 95/200 | 95/200 | | 80/180 |
| Copper Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Copper Plating Solution (45% Cu(BF ₄) ₂ , 19% Copper Sulfate, 8% Sulfuric Acid) <1> | | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Copper Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Copper Sulfate, ammoniated <21> | All | | | 90/195 | 90/195 | | 90/195 | | 90/195 | |
| Corn Oil <18> | 100 | 80/180 | 100/210 | 95/200 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 65/150 |
| Corn Starch <18> | Slurry | 100/210 | 100/210 | 105/220 | 100/210 | | 100/210 | | 100/210 | |
| Corn Sugar/Syrup (Glucose) <18> | All | 80/180 | 80/180 | | | | | | | |
| Cottonseed Oil <18> | 100 | 100/210 | 100/210 | 95/200 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Crude Oil, sweet and sour | 100 | 100/210 | 120/250 | | | 120/250 | 100/210 | 120/250 | - | 65/150 |
| Cumene | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | 25/80 |
| Cumene/Toluene/Xylene | All | 25/80 | 40/100 | | | 50/120 | 25/80 | 50/120 | | NR |
| Cupric Chloride, see Copper Chloride | | | | | | | | | | |
| Cyanide Disposal (reacts with Hypo to form Sodium Thiosulfite) | | | 40/100 | | | 40/100 | | | | |
| Cyanuric Acid | All | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | |
| Cyanuric Chloride <4> | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Cyclohexane | 100 | 50/120 | 65/150 | 65/150 | 65/150 | 65/150 | 50/120 | 65/150 | 65/150 | |
| Cyclohexane (no condensation, no coalescence) | Fumes | 80/180 | | 80/180 | | | 80/180 | | | |
| Cyclohexylamine | 100 | | LS | | | 40/100 | | LS | | |
| Cyclopentane | 100 | 40/100 | 45/110 | | | 50/120 | 40/100 | 45/110 | | |
| Dalapon/Sodium Salt (2,2-Dichloropropionic Acid and Sodium Salt) | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Decanoic Acid <4> | > 0.5 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Decanol | 100 | 50/120 | 65/150 | | | 80/180 | 50/120 | 65/150 | | |
| Deionized Water <2> | 100 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Deminerlized Water <2> | 100 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Detergent, dishwashing liquid (biodegradable) <14> | 100 | 40/100 | | 40/100 | | | 40/100 | | | |
| Detergents, sulfated <21> | 1-50 | 100/210 | | 105/220 | 80/180 | | 100/210 | | 80/180 | |
| Detergents, sulfonated | 100 | 100/210 | | 105/220 | | | 100/210 | | | |
| De-waxed Paraffin Distillate | 100 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Di (2-Ethylhexyl) Phosphoric Acid (DEHPA) in Kerosene | 20 | 50/120 | | 65/150 | | | 50/120 | | 80/180 | |
| Diacetone Alcohol | 10 | | 40/100 | | | 50/120 | 40/100 | 50/120 | | |
| Diacetone Alcohol | 100 | NR | NR | | | LS | NR | NR | | NR |
| Diallyl Phthalate | All | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 65/150 |
| Diammonium Phosphate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Dibasic Acid (51-61% Glutaric Acid/18-28% Succinic Acid/15-25% Adipic Acid/2% Nitric Acid) | > 0.5-50 | 80/180 | 95/200 | | | 95/200 | 80/180 | 95/200 | | 80/180 |
| Dibromonitrilo-Propionamide | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Dibromophenol | 100 | NR | 40/100 | | | 40/100 | NR | 40/100 | | NR |
| Dibromopropane | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Dibromopropanol | 100 | | | NR | | 40/100 | NR | | | |
| Dibutyl Carbitol (Diethylene Glycol Dibutyl Ether) | 100 | 25/80 | 40/100 | | | 40/100 | 25/80 | 40/100 | | |
| Dibutyl Ether | 100 | 25/80 | 50/120 | 50/120 | 50/120 | 80/180 | 25/80 | 65/150 | 50/120 | |
| Dibutyl Phthalate | 100 | 80/180 | 80/180 | 95/200 | 95/200 | 100/210 | 65/150 | 80/180 | 95/200 | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|--------|---------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Dibutyl Sebacate | 100 | 50/120 | 65/150 | 100/210 | | 65/150 | 100/210 | 65/150 | 65/150 | |
| Dichloroacetic Acid, see Chloroacetic Acid | | | | | | | | | | |
| Dichlorobenzene (ortho and para) | 100 | NR | 40/100 | 40/100 | | 50/120 | NR | 40/100 | | NR |
| Dichloroethane | 100 | NR | NR | NR | NR | 25/80 | NR | NR | NR | NR |
| Dichloroethylene | 100 | NR | NR | | | LS | NR | NR | | NR |
| Dichloromethane (Methylene Chloride) | 100 | NR | NR | | | LS | NR | NR | | NR |
| Dichlorophenol (DCP) | 100 | NR | | | | | NR | | | |
| 2,4-Dichlorophenoxyacetic Acid (acid, salt, ester formulations) <4> | | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Dichloropropane | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Dichloropropane/Dichloropropene mixture | | NR | | NR | NR | | NR | | | |
| Dichloropropene | 100 | NR | NR | NR | NR | 25/80 | NR | NR | NR | NR |
| Dichloropropene/Dichloropropane mixture | | NR | | NR | NR | | NR | | | |
| Dichloropropionic Acid | 100 | NR | 25/80 | NR | NR | 40/100 | NR | 25/80 | NR | NR |
| Dichlorotoluene | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | NR |
| Dicoco Dimethyl Ammonium Chloride <21> | All | 50/120 | | 50/120 | | | 50/120 | | | |
| Diesel Fuel | 100 | 80/180 | 100/210 | 95/200 | 95/200 | 100/210 | 80/180 | 100/210 | 95/200 | 65/150 |
| Diethanolamine | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | 50/120 | 50/120 | 50/120 | |
| Diethanolamine/Ethanolamine | 80:20 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Diethyl Carbonate | 100 | NR | 25/80 | NR | | 40/100 | NR | 25/80 | 25/80 | NR |
| Diethyl Ether | 100 | NR | NR | | | NR | NR | NR | | NR |
| Diethyl Formamide | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |
| Diethyl Formamide | 100 | NR | LS | | | 40/100 | NR | LS | | NR |
| Diethyl Hydroxylamine | 100 | NR | NR | | | LS | NR | NR | | |
| Diethyl Ketone | 20 | 40/100 | 45/110 | | | 50/120 | 40/100 | 40/100 | | 40/100 |
| Diethyl Ketone | 100 | NR | NR | NR | 25/80 | 25/80 | NR | NR | 25/80 | NR |
| Diethyl Sulfate | 100 | 40/100 | 50/120 | 40/100 | 40/100 | 50/120 | 40/100 | 50/120 | 40/100 | |
| Diethylamine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|---------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Diethylamine | 100 | NR | NR | NR | | LS | NR | NR | | NR |
| Diethylaminoethanol | 100 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 40/100 |
| Diethylbenzene | 100 | 40/100 | 65/150 | 50/120 | 65/150 | 65/150 | 40/100 | 65/150 | 65/150 | NR |
| Diethylene Glycol | 100 | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 80/180 |
| Diethylene Glycol Dimethyl Ether | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |
| Diethylene Glycol Dimethyl Ether | 100 | NR | NR | | | 25/80 | NR | NR | | NR |
| Diethylene Glycol Butyl Ether (2-(2-Butoxyethoxy)ethanol) | 100 | 40/100 | 40/100 | 30/90 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | NR |
| Diethylene Glycol Monomethyl Ether | 100 | NR | NR | | | LS | NR | NR | | NR |
| Diethylene Triamine Pentaacetic Acid | All | 40/100 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Diethylene Triamine Pentaacetic Acid/Sodium Salt | 40 | 40/100 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Di-2-Ethylhexyl Phosphoric Acid (DEHPA) in Kerosene | 20 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Diglycolamine (Aminoethoxyethanol) | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Diglycolamine (Aminoethoxyethanol) | 50 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Diglycolamine (Aminoethoxyethanol) | 100 | NR | NR | | | LS | NR | NR | | NR |
| Diisobutyl Ketone | 100 | NR | 50/120 | | | 50/120 | NR | 50/120 | | NR |
| Diisobutyl Phthalate | 100 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | |
| Diisobutylene | 100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 25/80 |
| Diisonoyl Phthalate | 100 | 65/150 | 100/210 | | | 100/210 | 65/150 | 100/210 | | 65/150 |
| Diisopropanolamine | 100 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | 50/120 | 50/120 | 50/120 | 40/100 |
| Dimethyl Acetamide | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |
| Dimethyl Acetamide | 100 | NR | NR | | | LS | NR | NR | | NR |
| Dimethyl Acetamide (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Dimethylamine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Dimethylamine | 40 | LS | LS | | | LS | LS | LS | | NR |
| 2,4-D Dimethylamine Salt | 67 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Dimethylammonium Hydrochloride (Dimethylamine HCl) | 70 | 40/100 | 40/100 | | | 50/120 <7> | 40/100 | 40/100 | | 40/100 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Dimethylaniline | 100 | NR | LS | | | 40/100 | NR | 25/80 | | LS |
| Dimethylcarbonate | 100 | NR | NR | | | NR | NR | NR | | NR |
| Dimethylethanolamine | 20 | 50/120 | 50/120 | | | 60/140 | | | | |
| Dimethylethanolamine | 100 | 25/80 | 30/85 | | | 40/100 | 25/80 | 30/85 | | NR |
| Dimethylformamide | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Dimethylformamide | 30 | NR | | | | | NR | | | |
| Dimethylformamide | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Dimethylformamide (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Dimethylformamide/Acetonitrile/Methanol | 26:9:7 | NR | NR | | | LS | NR | NR | | NR |
| Dimethylmorpholine | 100 | NR | 25/80 | 40/100 | | 50/120 | NR | 25/80 | 25/80 | NR |
| Dimethyl Phthalate | 100 | 65/150 | 80/180 | 65/150 | | 80/180 | 65/150 | 80/180 | 80/180 | |
| Dimethyl Sulfate | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Dimethyl Sulfate | 100 | NR | LS | | | LS | NR | NR | | NR |
| Dimethyl Sulfide | 100 | NR | LS | | | 25/80 | NR | 25/80 | | NR |
| Dimethyl Sulfoxide (DMSO) | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Dimethyl Sulfoxide (DMSO) | 100 | NR | LS | | | LS | NR | NR | | NR |
| 2,2-Dimethyl Thiazolidine | 1 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | |
| Dimethyltin Dichloride/Methyltin Trichloride (90/10) in aqueous solution <7> | 50 | | | | | 45/110 | | | | |
| Diocetyl Phthalate | 100 | 65/150 | 100/210 | 65/150 | 65/150 | 100/210 | 65/150 | 100/210 | 65/150 | 65/150 |
| Dioxane | 100 | NR | | NR | | | NR | | | |
| Diphenylmethane-4,4-Diisocyanate (MDI) | 100 | NR | NR | | | NR | NR | NR | | NR |
| Diphenyl Oxide (Diphenyl Ether, Phenyl Ether) | 100 | 25/80 | 40/100 | 50/120 | 50/120 | 50/120 | 25/80 | 50/120 | 50/120 | NR |
| Dipotassium Phosphate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Dipropylene Glycol | 100 | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 65/150 |
| Dipropylene Glycol Dibenzoate | 100 | 50/120 | | 50/120 | | | 50/120 | | | |
| Dipropylene Glycol Methyl Ether (2-(2-Methoxypropoxy)-1-Propanol) | 20 | 40/100 | 50/120 | | | 65/150 | 50/120 | 65/150 | | 40/100 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|--------|---------|--------|---------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Dipropylene Glycol Methyl Ether (2-(2-Methoxypropoxy)-1-Propanol) | 100 | NR | LS | | | 20/70 | NR | NR | | NR |
| Dishwashing Detergent in solution <14> | All | 80/180 | 80/180 | | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Distilled Water <2> | 100 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Divinylbenzene | 100 | 40/100 | 50/120 | 50/120 | | 50/120 | 40/100 | 50/120 | 50/120 | NR |
| Dodecane | 100 | 25/80 | | 50/120 | 50/120 | | 25/80 | | 50/120 | |
| Dodecanol (Lauryl Alcohol) | 100 | 65/150 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 | 80/180 | 80/180 | 50/120 |
| Dodecene | 100 | 65/150 | 80/180 | | 80/180 | 80/180 | 65/150 | 80/180 | 80/180 | 50/120 |
| Dodecylbenzene Sulfonic Acid <6> | 100 | 80/180 | 95/200 | 105/220 | | 100/210 | 100/210 | 100/210 | 95/200 | |
| Dodecylbenzene Sulfonic Acid/Sulfuric Acid/Water/Oil | 85:10:4:1 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Dodecyldimethylamine | 100 | 80/180 | 95/200 | | | 100/210 | 80/180 | 95/200 | | |
| Dodecylmercaptan | 100 | 80/180 | 95/200 | | | 100/210 | 80/180 | 95/200 | | |
| DOWTHERM® heat transfer agent | 100 | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | |
| Epichlorohydrin | 100 | LS | LS | NR | NR | 25/80 | NR | NR | | NR |
| Epoxidized Castor Oil | 100 | 40/100 | 40/100 | | | | | | | 40/100 |
| Epoxidized Soybean Oil | 100 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Esters/Fatty Acid | 100 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Ethanol (Ethyl Alcohol) | 10 | 50/120 | 50/120 | 65/150 | 65/150 | 65/150 | 50/120 | 50/120 | 65/150 | 50/120 |
| Ethanol (Ethyl Alcohol) | 50 | 40/100 | 40/100 | 65/150 | 65/150 | 65/150 | 40/100 | 40/100 | 65/150 | NR |
| Ethanol (Ethyl Alcohol) | 90–95 | 25/80 | 25/80 | 40/100 | 40/100 | 40/100 | 25/80 | 25/80 | 40/100 | NR |
| Ethanol (Ethyl Alcohol) | 100 | NR | LS | 40/100 | 40/100 | 40/100 | NR | 25/80 | 40/100 | NR |
| Ethanol (Ethyl Alcohol, no condensation, no coalescence) | Fumes | 65/150 | 65/150 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Ethanol/Ethylacetate/Methanol/DMF | 35:29:10:10 | NR | NR | | | LS | NR | NR | | NR |
| Ethanolamine | 20 | 40/100 | 45/110 | | | 50/120 | 40/100 | 50/120 | | |
| Ethanolamine | 100 | 25/80 | 30/90 | 30/90 | 25/80 | 40/100 | 25/80 | 30/90 | 25/80 | NR |
| Ethanolamine/Ethylene Glycol Monobutyl Ether (alkaline film stripper) | 30:57 | NR | | | | | NR | | | |
| Ethephon | 100 | | 40/100 | | | 40/100 | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|--------|--------|--------|--------|----------|--------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Ethoxy Acetic Acid | 10 | | 40/100 | | | 40/100 | | 40/100 | | |
| Ethoxy Acetic Acid | 100 | NR | NR | | | LS | NR | NR | | NR |
| Ethoxylated Alcohol, C12-C14 | 100 | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | |
| Ethoxylated Alkyl Amines, C12 and higher | 100 | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | |
| Ethoxylated Nonyl Phenol | 100 | NR | LS | | | 40/100 | NR | LS | | NR |
| Ethyl Acetate | 1 | | | NR | NR | | NR | | NR | |
| Ethyl Acetate | 100 | NR | LS | NR | NR | 25/80 | NR | LS | NR | NR |
| Ethyl Acetate (no condensation, no coalescence) | fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Ethyl Acetate/Sodium Hydroxide <1,2> | 4:0-50 | 50/120 | 50/120 | | | 40/100 | 50/120 | 40/100 | | |
| Ethyl Acrylate | 100 | NR | LS | NR | NR | 25/80 | NR | 20/70 | NR | NR |
| Ethyl Alcohol, see Ethanol | | | | | | | | | | |
| Ethyl Amine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Ethyl Amine | 70 | NR | NR | | | LS | NR | NR | | NR |
| Ethyl Benzene/Benzene | 2:3/1:3 vol | | | | | | | | 25/80 | |
| Ethyl Benzyl Chloride <2> | 100 | NR | NR | | | 40 | NR | NR | | NR |
| Ethyl Bromide | 100 | NR | LS | NR | NR | LS | NR | LS | NR | NR |
| Ethyl Chloride | 100 | NR | LS | NR | 25/80 | 25/80 | NR | 25/80 | 25/80 | NR |
| Ethyl Ether | 100 | NR | NR | | | NR | NR | NR | NR | NR |
| Ethyl Silicate | 100 | | | | | 40/100 | | | | |
| Ethyl Sulfate | 100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 |
| 2-Ethylhexyl Alcohol | 100 | 65/150 | 70/160 | | | 80/180 | 70/160 | 80/180 | | 50/120 |
| Ethyl-3-Ethoxy Propionate | 100 | NR | LS | | | 25/80 | NR | LS | | NR |
| Ethylbenzene | 100 | 25/80 | 40/100 | 40/100 | 50/120 | 50/120 | 25/80 | 40/100 | 40/100 | |
| Ethylbenzene/Benzene | 67:33 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Ethylene Chloride, see Dichloroethane | | | | | | | | | | |
| Ethylene Chlorohydrin | 20 | 40/100 | 50/120 | | | 65/150 | 50/120 | 65/150 | | 40/100 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Ethylene Chlorohydrin | 100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 | NR |
| Ethylene Diamine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Ethylene Diamine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Ethylene Dibromide | 100 | NR | NR | | | NR | NR | NR | NR | NR |
| Ethylene Dichloride, see Dichloroethane | | | | | | | | | | |
| Ethylene Dichloride/Ethylene Dibromide/Tetra Ethyl Lead (above water solubility) | 5:5:5 | NR | NR | | | LS | NR | NR | | NR |
| Ethylene Glycol | 100 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Ethylene Glycol based coolants | > 0.5 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Ethylene Glycol/Sulfuric Acid | 0-40:0-10 | 65/150 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Ethylene Glycol Monobutyl Ether (2-Butoxyethanol) | 20 | 40/100 | 50/120 | | | 65/150 | 50/120 | 65/150 | | 40/100 |
| Ethylene Glycol Monobutyl Ether (2-Butoxyethanol) | 100 | 40/100 | 40/100 | 40/100 | 40/100 | 65/150 | 40/100 | 40/100 | 40/100 | NR |
| Ethylene Glycol Monobutyl Ether/Ethanolamine (alkaline film stripper) | 57:30 | | | | | | NR | | | |
| Ethylene Oxide | 100 | NR | NR | | | NR | NR | NR | NR | NR |
| Ethylenediaminetetraacetic Acid (EDTA) | All | 80/180 | 80/180 | 30/90 | 40/100 | 80/180 | 80/180 | 80/180 | 40/100 | 80/180 |
| Ethylenesulfonic Acid/Sodium Salt <6> | All | 70/160 | 70/160 | | | 70/160 | 70/160 | 70/160 | | |
| Eucalyptus Oil <18> | 100 | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | |
| Fatty Acid/Sterol/Triglyceride | All | 100/210 | 120/250 | | | 120/250 | 100/210 | 120/250 | | 65/150 |
| Fatty Acid/Sulfuric Acid <10> | 5:2 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Fatty Acids | All | 100/210 | 120/250 | 105/220 | 120/250 | 120/250 | 100/210 | 120/250 | 120/250 | 65/150 |
| Ferric Acetate | All | 80/180 | 80/180 | 80/180 | | 80/180 | 80/180 | 80/180 | 80/180 | |
| Ferric Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ferric Chloride/Ferrous Chloride | 5:20 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Ferric Chloride/Ferrous Chloride/Hydrochloric Acid | 48:0.2:0.2 | 100/210 | 105/220 | | | 105/220 | 100/210 | 105/220 | | 80/180 |
| Ferric Chloride/ Hydrochloric Acid <2,8,9,12,13> | 0-29:1-20 | 80/180 | 105/220 | | | 105/220 | 80/180 | 105/220 | | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Ferric Nitrate <21> | All | | | 100/210 | 100/210 | | 100/210 | | 100/210 | |
| Ferric or Ferrous Sulfate/Sulfuric Acid | 0-40:0-25 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Ferric Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ferrous Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ferrous Chloride/Hydrochloric Acid <2,8,9,12,13> | 0-29:1-20 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 80/180 |
| Ferrous Chloride, Manganese Chloride, Ferric Chloride/ Hydrochloric Acid <2,8,9,12,13> | 1-60:0-20 | 80/180 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Ferrous Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Ferrous Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Fertilizer 32-0-0 (32% wt of total Nitrogen), Urea-Ammonium Nitrate solution | | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Fertilizer 8-8-8 (% wt of total Nitrogen, Phosphorus and Potassium) | | 65/150 | 65/150 | 65/150 | | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Fertilizer Solution, Grades N-P-K:10-34-0 | 100 | | | 65/150 | | | 65/150 | | | |
| Flue Gas, dry <16> | All | 165/325 | 175/350 | 175/350 | 175/350 | 205/400 | 160/320 | 160/320 | | |
| Flue Gas, wet | All | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 | 100/210 | | 80/180 |
| Fluoboric Acid <1,2> | 1-10 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Fluoboric Acid <1,2> | 11-100 | 100/210 | 100/210 | 95/200 | 95/200 | 100/210 | 100/210 | 100/210 | 95/200 | 65/150 |
| Fluoride Salts/Hydrochloric Acid <1,2> | 30:10 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Fluorine in flue gas, wet <1,2> | 2 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 80/180 |
| Fluosilicic Acid (Fluosilicic Acid, Hexafluorosilicic Acid) <1,2> | 1 | 80/180 | | 70/160 | 80/180 | 80/180 | 80/180 | | 80/180 | |
| Fluosilicic Acid (Fluosilicic Acid, Hexafluorosilicic Acid) <1,2> | 2-10 | 80/180 | 80/180 | 70/160 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Fluosilicic Acid (Fluosilicic Acid, Hexafluorosilicic Acid) <1,2> | 11-20 | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Fluosilicic Acid (Fluosilicic Acid, Hexafluorosilicic Acid) <1,2> | 21-35 | 40/100 | 40/100 | 40/100 | 50/120 | 40/100 | 40/100 | 40/100 | 40/100 | 50/120 |
| Fluosilicic Acid (Fluosilicic Acid, Hexafluorosilicic Acid) <1,2> | Sat'd | 40/100 | | 40/100 | 40/100 | | 40/100 | | 40/100 | |
| Fluosilicic Acid fumes <1,2> | All | 80/180 | 80/180 | | | 80/180 | 80/180 | | | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration % | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|--------------------|---|---------|------------|--------|---------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Fluosilicic Acid/Hydrofluoric Acid/Phosphoric Acid <1,2> | 22:5:5 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Fluozirconic Acid/Fluotitanic Acid/Ammonium Hydroxide <1,2> | 5:4:3 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Fly Ash Slurry | | 80/180 | 80/180 | | 65/150 | 80/180 | 80/180 | 80/180 | 65/150 | 80/180 |
| Formaldehyde | 38 | 50/120 | 65/150 | 65/150 | 65/150 | 65/150 | 50/120 | 65/150 | 65/150 | |
| Formaldehyde/Methanol | 0-37:0-15 | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | |
| Formamide | 20 | 40/100 | 50/120 | | | 65/150 | 50/120 | 65/150 | | 40/100 |
| Formamide | 100 | 20/70 | 20/70 | LS40/LS100 | 40/100 | 20/70 | 20/70 | 20/70 | 40/100 | |
| Formic Acid | 10 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Formic Acid | 25 | 50/120 | 65/150 | 50/120 | 50/120 | 65/150 | 50/120 | 65/150 | 50/120 | 50/120 |
| Formic Acid | 50 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | |
| Formic Acid <2> | 85 | 25/80 | 25/80 | 50/120 | 50/120 | 40/100 | 25/80 | 25/80 | 50/120 | |
| Formic Acid <2> | 100 | | | | 40/100 | 40/100 | | | 40/100 | |
| Fuel C (50:50 Isooctane/Toluene) | 100 | | | | | 50/120 | | | | |
| Fuel C/Methyl t-Butyl Ether (MTBE) (Fuel C is 50:50 Toluene/Isooctane) | 85:15 | | | | | 50/120 | | | | |
| Fuel Oil | 100 | 80/180 | 100/210 | 80/180 | 80/180 | 100/210 | 80/180 | 100/210 | | 65/150 |
| Furfural <11> | 0-10 | 40/100 | 50/120 | 65/150 | 65/150 | 50/120 | 40/100 | 50/120 | 65/150 | |
| Furfural <11> | 11-100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Furfural in organic solvent <4,6> | 0-20 | NR | 25/80 | | | 40/100 | NR | 40/100 | | |
| Furfural/Acetic Acid/Methanol | 30:10:5 | NR | NR | | | LS | NR | NR | | NR |
| Furfuryl Alcohol <2> | 20 | 40/100 | 50/120 | | | 65/150 | 40/100 | 50/120 | | 40/100 |
| Furfuryl Alcohol <2> | 100 | NR | NR | | | 25/80 | NR | NR | NR | NR |
| Gallic Acid | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Gasohol, 1-100% alcohol | 100 | | | | | 40/100 | | | | |
| Gasoline, no alcohol | 100 | | | | | 50/120 | | | | |
| Gluconic Acid | 50 | | | 50/120 | | | 40/100 | | | |
| Glucose <18> | All | 80/180 | 80/180 | | | | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Glutamic Acid <18> | 50 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Glutaraldehyde | 50 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Glutaric Acid | 50 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Glycerine | 100 | 100/210 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Glycine and derivatives | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Glycol | 100 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Glycolic Acid (Hydroxyacetic Acid) | 0-70 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | 50/120 | 65/150 | 50/120 | 50/120 |
| Glyconic Acid | 50 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Glyoxal | 40 | 40/100 | 40/100 | 25/80 | | 40/100 | 40/100 | 40/100 | 40/100 | |
| Glyoxylic Acid (Oxoacetic Acid) | 25 | NR | | NR | NR | | NR | | NR | |
| Glyphosate | All | | 40/100 | | | 40/100 | | 40/100 | | |
| Gold Plating Solution (23% Potassium Ferrocyanide, Potassium Gold Cyanide, Sodium Cyanide) | | 100/210 | 100/210 | 95/200 | 95/200 | 100/210 | 100/210 | 100/210 | 95/200 | 80/180 |
| Green Liquor <1,2> | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Gypsum Slurry, see also Calcium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Hard Chrome Plating Baths (with Sulfuric Acid—not recommended) | | 60/140 | 60/140 | | | | | | | |
| Heptane | 100 | 100/210 | 100/210 | 95/200 | 95/200 | 100/210 | 100/210 | 100/210 | 95/200 | 80/180 |
| Heptane (no condensation, no coalescence) | Fumes | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Hexachlorocyclopentadiene | 100 | | | 80/180 | | | 80/180 | | | |
| Hexachloroethane | 100 | LS | 40/100 | | | 50/120 | LS | 40/100 | | NR |
| Hexadecanol | 100 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | 50/120 |
| Hexafluorosilicic Acid, see Fluosilicic Acid | | | | | | | | | | |
| Hexamethylenetetramine | 40 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | |
| Hexane | 100 | 70/160 | 70/160 | 70/160 | 70/160 | 70/160 | 70/160 | 70/160 | 70/160 | |
| Hexanoic Acid | 100 | 25/80 | 50/120 | | | 50/120 | 25/80 | 50/120 | | 25/80 |
| Hot Stack Gas, see Flue Gas | | | | | | | | | | |
| Humid Air, trace sulfur fumes | | | | 95/200 | 95/200 | | 95/200 | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|----------------|----------|----------------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Hydraulic Fluid (glycols) <14> | 100 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | |
| Hydrazine | 20 | | LS | | | LS | LS | LS | | |
| Hydrazine | 70 | NR | | NR | NR | | NR | | NR | |
| Hydrazine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Hydrazine/Sodium Phosphate | 5:10 | | LS | | | LS | LS | LS | | |
| Hydriodic Acid (57% Hydrogen Iodide) | 40 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Hydriodic Acid (57% Hydrogen Iodide) | 100 | | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Hydrobromic Acid | 1–25 | 80/180 | 80/180 | 105/220 | 105/220 | 80/180 | 80/180 | 80/180 | 105/220 | 80/180 |
| Hydrobromic Acid | 48 | 65/150 | 65/150 | 70/160 | 70/160 | 65/150 | 65/150 | 65/150 | 70/160 | 65/150 |
| Hydrobromic Acid | 62 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Hydrobromic Acid/Bromine | 40:2 | | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Hydrochloric Acid <9,13> | 1–15 | 80/180 | 105/220 | 105/220 | 105/220 | 110/230 | 100/210 | 105/220 | 105/220 | 80/180 |
| Hydrochloric Acid <2,8,9,13> | 16–20 | 80/180 | 105/220 | 95/200 | 95/200 | 110/230 | 100/210 | 105/220 | 95/200 | 80/180 |
| Hydrochloric Acid <2,8,9,13> | 21–25 | 65/150 | 80/180 | 80/180 | 80/180 | 100/210 | 80/180 | 80/180 | 80/180 | 80/180 |
| Hydrochloric Acid <2,8,9,13> | 26–30 | 65/150 | 80/180 | | | 95/200 | 80/180 | 80/180 | | 80/180 |
| Hydrochloric Acid <2,8,9,13> | 31–32 | 65/150 | 70/160 | 65/150 | 65/150 | 80/180 <15> | 65/150 | 80/180 <15> | 65/150 | 65/150 |
| Hydrochloric Acid <2,8,9,13> | 33–34 | 50/120 | 50/120 | | | 70/160 <15> | 50/120 | 70/160 <15> | | 50/120 |
| Hydrochloric Acid <2,8,9,13> | 35–36 | 50/120 | 50/120 | 50/120 | 50/120 | 60/140 <15> | 50/120 | 60/140 <15> | 50/120 | 50/120 |
| Hydrochloric Acid <2,8,9,13> | 37 | 40/100 | 45/110 | 40/100 | 40/100 | 50/120 <15> | 40/100 | 50/120 <15> | 40/100 | |
| Hydrochloric Acid, fumes <2,8,9,13,16> | | 100/210 | 175/350 | | | 175/350 | 100/210 | 175/350 | | 80/180 |
| Hydrochloric Acid, fumes/free Chlorine, dry above 210 °F/100 °C <2,8,9,12,13,16> | | | 175/350 | | | 175/350 | | 175/350 | | |
| Hydrochloric Acid/Aluminum (reactor)/Aluminum Chloride <2,8,9,12,13> | < 15% HCl | 80/180 | 100/210 | | | | 80/180 | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration % | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|--------------------|---|---------|---------|---------|----------------|----------|----------------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Hydrochloric Acid/Aluminum Chloride <2,8,9,12> | 30:0-40 | 65/150 | 70/160 | | | 80/180 <15> | 65/150 | 80/180 <15> | | 65/150 |
| Hydrochloric Acid/Aluminum Chlorohydrate <2,8,9,12,13> | < 15:> 0.5 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 65/150 |
| Hydrochloric Acid/Bromine/Chlorine <2,8,9,12,13> | 22:0.1:0.1 | 65/150 | 80/180 | | | 100/210 | 80/180 | 80/180 | | 80/180 |
| Hydrochloric Acid/Calcium Chloride <2,8,9,12,13> | 27:15 | 65/150 | 80/180 | | | 95/200 | 80/180 | 80/180 | | 80/180 |
| Hydrochloric Acid/Chlorine <2,8,9,12,13> | 0.5-20% HCl | 80/180 | 90/195 | | | 100/210 | 80/180 | 100/210 | | 80/180 |
| Hydrochloric Acid/Diethylene Triamine (as Hydrochloride)/ Ammonium Chloride <2,8,9,12,13> | 33:10:10 | | | | | 65/150 | | | | |
| Hydrochloric Acid/Dissolved Organics <2,8,9,12,13> | 0-33% HCl | NR | | | | 65/150 <15> | | | | NR |
| Hydrochloric Acid/Ferric Chloride <2,8,9,12,13> | 1-20:0-29 | 80/180 | 105/220 | | | 105/220 | 80/180 | 105/220 | | 80/180 |
| Hydrochloric Acid/Ferric Chloride/Organics <2,8,9,12,13> | 28:35:1 | NR | NR | | | 65/150 | NR | NR | | NR |
| Hydrochloric Acid/Ferrous Chloride <2,8,9,12> | 1-20:0-29 | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 80/180 |
| Hydrochloric Acid/Formaldehyde <2,8,9,12,13> | 25:3 | NR | NR | | | 65/150 | NR | NR | | NR |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | 36:1 | | 40/100 | | | 40/100 <15> | | 40/100 <15> | | |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | Max total % = 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | 15:0.1-1 | 80/180 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | 25:6 | 40/100 | 45/110 | | | 50/120 | 40/100 | 50/120 | | |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | 0.5-20:0-1 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | |
| Hydrochloric Acid/Hydrofluoric Acid <1,2,8,12,13> | 30:15 | | | | | 40/100 | | | | |
| Hydrochloric Acid/Hydrofluoric Acid/Phosphoric Acid/ Nitrobenzene <1,2,8,12,13> | 15:1:1:0.5 | NR | LS | | | 40/100 | NR | LS | | NR |
| Hydrochloric Acid/Hydrofluoric Acid/Xylene <1,2,8,12,13> | 15:15:70 | | | | | NR | | | | |
| Hydrochloric Acid/Phosphorus Acid <2,8,9,12,13> | 2:70 | | | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Hydrochloric Acid/Sodium Chloride <2,8,9,12,13> | 5:Sat'd NaCl | | | 100/210 | 100/210 | | 100/210 | | 100/210 | |
| Hydrochloric Acid/Sulfuric Acid (iron and steel cleaning bath) <2,8,9,12,13> | 9:23 | | | 95/200 | 100/210 | | 95/200 | | 100/210 | |
| Hydrocyanic Acid | All | 100/210 | 100/210 | 65/150 | 65/150 | 100/210 | 100/210 | 100/210 | 65/150 | 80/180 |
| Hydrofluoric Acid <1,2,13> | 1 | 65/150 | | 65/150 | 65/150 | | 65/150 | | 65/150 | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|-----------|-----------|---------|----------|---------|-----------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Hydrofluoric Acid <1,2,13> | 5 | 65/150 | | 50/120 | 50/120 | | 50/120 | | 50/120 | |
| Hydrofluoric Acid <1,2,13> | 10 | 65/150 | | 40/100 | 40/100 | 65/150 | 65/150 | 65/150 | 40/100 | 65/150 |
| Hydrofluoric Acid <1,2,13> | 15 | | | 30/90 | 30/90 | 40/100 | 40/100 | 40/100 | 30/90 | |
| Hydrofluoric Acid <1,2,13> | 20 | 40/100 | 40/100 | LS30/LS90 | LS30/LS90 | 40/100 | 40/100 | 40/100 | LS30/LS90 | 40/100 |
| Hydrofluoric Acid/Nitric Acid <1,2,13> | 15:15 | | | | | 40/100 | | 40/100 | | |
| Hydrofluoric Acid/Nitric Acid <1,2,13> | 6:20 | 50/120 | 50/120 | | | 60/140 | 55/130 | 60/140 | | 40/100 |
| Hydrofluoric Acid/Nitric Acid <1,2,13> | 3–5:30–35 | NR | NR | | | LS | NR | LS | | NR |
| Hydrofluoric Acid/Nitric Acid/Sulfuric Acid <1,2,13> | 8:20:2 | | | | | 60/140 | | 60/140 | | |
| Hydrofluosilicic Acid, see Fluosilicic Acid | | | | | | | | | | |
| Hydrofluosilicic Acid/Polyaluminum Chloride (Poly(aluminum hydroxy)chloride) <1,2> | 1–22:1–35 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Hydrofluosilicic Acid/Zinc Chloride <1,2> | 20:All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Hydrogen Bromide, dry gas | 100 | 80/180 | 80/180 | 80/180 | 80/180 | 100/210 | 80/180 | 100/210 | 80/180 | 80/180 |
| Hydrogen Bromide, wet gas | 100 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Hydrogen Chloride, dry gas <6,16> | 100 | 100/210 | 175/350 | 105/220 | 120/250 | 175/350 | 100/210 | 175/350 | 120/250 | 80/180 |
| Hydrogen Chloride, wet gas | 100 | 100/210 | 110/230 | 105/220 | 105/220 | 110/230 | 100/210 | 110/230 | 105/220 | 80/180 |
| Hydrogen Fluoride, dry gas/vapor (if wet, max. 40 °C/100 °F) <1,2,6> | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Hydrogen Peroxide <2,3,6> | 5 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Hydrogen Peroxide <2,3,6> | 30 | 40/100 | 40/100 | 40/100 | 65/150 | 65/165 | 40/100 | 65/150 | 65/150 | 40/100 |
| Hydrogen Peroxide <2,3,6> | 35 | 25/80 | 30/90 | | | 40/100 | 30/90 | 40/100 | | NR |
| Hydrogen Peroxide <2,3,6> | 50 | NR | NR | | | LS | NR | NR | | NR |
| Hydrogen Sulfide <6,16> | 5 | 100/210 | 175/350 | | | 175/350 | 100/210 | 175/350 | | 80/180 |
| Hydrogen Sulfide, aqueous | All | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Hydrogen Sulfide, dry gas | 100 | 100/210 | 110/230 | 100/210 | 100/210 | 110/230 | 100/210 | 110/230 | 100/210 | 80/180 |
| Hydrogen Sulfide, sewer gas | | 30/90 | | 30/90 | | | 30/90 | | | |
| Hydrogenated Tallow Alkyl Amine (C8–C18) | 100 | 40/100 | 40/100 | | | | | | | |
| Hydrosulfite Bleach, aqueous solution containing 5% Zinc Hydrosulfite and 2.5% Tripolyphosphate <5> | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|--------|--------|---------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Hydroxyacetic Acid (Glycolic Acid) | 0-70 | 50/120 | 50/120 | 50/120 | 50/120 | 65/150 | 50/120 | 65/150 | 50/120 | 50/120 |
| Hydroxylamine Acid Sulfate (Hydroxylammonium Acid Sulfate (HAS)), reaction of Hydroxylamine Acid Disulfate with steam to form HAS, Sulfuric Acid, Ammonium Sulfate <21> | All | | 100/210 | | | 100/210 | | | | |
| Hypophosphorous Acid | 0-50 | 50/120 | 50/120 | 30/90 | 30/90 | 50/120 | 50/120 | 50/120 | 30/90 | 50/120 |
| Imidazoline Acetate/Solvent <2,4> | 20 | 40/100 | 45/110 | | | 50/120 | 40/100 | 45/110 | | NR |
| Imidazoline Acetate/Solvent <2,4> | 60 | NR | LS | | | 40/100 | NR | NR | | NR |
| Incinerator Gases, see Flue Gas | | | | | | | | | | |
| Iodine, crystals | 100 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Iodine, vapor | 100 | 65/150 | 65/150 | | | 80/180 | 65/150 | 65/150 | 65/150 | 65/150 |
| Ion Exchange Resin, fine mesh resins | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Iron and Steel Cleaning Bath (9% Hydrochloric Acid/ 23% Sulfuric Acid) | | 80/180 | 100/210 | | | 100/210 | 80/180 | 100/210 | | 80/180 |
| Iron Plating Solution (45% FeCl ₂ , 15% CaCl ₂ , 20% FeSO ₄ , 11% (NH ₄) ₂ SO ₄) | | 80/180 | 100/210 | 80/180 | 80/180 | 100/210 | 80/180 | 100/210 | 80/180 | 80/180 |
| Iron Perchloride, see Ferric Chloride | | | | | | | | | | |
| Isoamyl Alcohol | 20 | 65/150 | 65/150 | | | 80/180 | 65/150 | 65/150 | | 65/150 |
| Isoamyl Alcohol | 100 | 50/120 | 60/140 | 50/120 | 50/120 | 65/150 | 50/120 | 60/140 | 50/120 | 50/120 |
| Isobutyl Alcohol | 20 | 65/150 | 65/150 | | | 80/180 | 65/150 | 65/150 | | 40/100 |
| Isobutyl Alcohol | 100 | 50/120 | 50/120 | | | 65/150 | 50/120 | 50/120 | | NR |
| Isodecanol | 100 | 50/120 | 65/150 | 80/180 | 80/180 | 80/180 | 50/120 | 65/150 | 50/120 | 50/120 |
| Isononyl Alcohol | 100 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 40/100 |
| Isooctyl Adipate | 100 | 50/120 | 50/120 | | | 65/150 | 50/120 | | | 40/100 |
| Isooctyl Alcohol | 100 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 50/120 |
| Isopropanol Amine | 100 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | NR |
| Isopropyl Alcohol (Isopropanol) | 100 | 50/120 | 50/120 | 40/100 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | NR |
| Isopropyl Amine | 0.5-50 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Isopropyl Amine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Isopropyl Myristate | 100 | 100/210 | 110/230 | | | 110/230 | | 110/230 | | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Isopropyl Palmitate | 100 | 100/210 | 110/230 | 105/220 | | 110/230 | 100/210 | 110/230 | 110/230 | 65/150 |
| Itaconic Acid | 0.5–40 | 60/140 | 60/140 | 100/210 | 100/210 | 60/140 | 60/140 | 60/140 | 100/210 | 60/140 |
| Jet Fuel, general <6> | 100 | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Kerosene | 100 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Kraft Recovery Boiler Breaching, see Flue Gas | | | | | | | | | | |
| Lactic Acid | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Latex (emulsion in water), for specific latices see under chemical/polymer name | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Latex Paint, acrylic binders | 100 | | | 40/100 | 50/120 | | 40/100 | | 50/120 | |
| Latex Paint, dispersion in water | 100 | | | 40/100 | 50/120 | | 40/100 | | 50/120 | |
| Latex Paint, vinyl binders | 100 | | | 40/100 | 50/120 | | 40/100 | | 50/120 | |
| Lauric Acid | All | | | 100/210 | | | 100/210 | | | |
| Lauroyl Chloride | 100 | 40/100 | 50/120 | | | 50/120 | | 50/120 | | |
| Lauryl Alcohol | 100 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | 50/120 |
| Lauryl Chloride | 100 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Lauryl Mercaptan | 100 | 80/180 | 95/200 | | | 100/210 | 80/180 | 95/200 | 65/150 | |
| Lead Acetate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | |
| Lead (II) Nitrate <21> | All | 100/210 | | 100/210 | 100/210 | 100/210 <24> | 100/210 | | 100/210 | |
| Lead Plating Solution (acidic process, 8% Lead with Fluoboric Acid and Boric Acid) <1> | | | | 95/200 | | | 95/200 | | | |
| Lead Plating Solution (alkaline process, 8% Lead Acetate, 20% Sodium Hydroxide) | | | | 80/180 | | | 80/180 | | | |
| Levulinic Acid <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | |
| Lignin Sulfonate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Lime Slurry, see Calcium Hydroxide | | | | | | | | | | |
| Limestone Slurry, see Calcium Carbonate | | | | | | | | | | |
| Linseed Oil | 100 | 100/210 | 110/230 | 105/220 | 105/220 | 110/230 | 100/210 | 110/230 | 105/220 | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|--------------|---------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Liquid Petroleum Gas (LPG) | 100 | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Lithium Bromide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | | 100/210 | 80/180 |
| Lithium Carbonate <1> | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Lithium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Lithium Hydroxide <1> | All | 80/180 | 80/180 | 65/150 | | 40/100 | 80/180 | 80/180 | 80/180 | 80/180 |
| Lithium Hypochlorite <2,3,5,9> | All | 80/180 | 80/180 | | | 40/100 | 80/180 | 80/180 | | 80/180 |
| Lithium Sulfate <21> | All | | | 100/210 | 100/210 | 100/210 <24> | 100/210 | | 100/210 | |
| Magnesium Bisulfite <21> | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 <24> | 100/210 | 100/210 | 80/180 | 80/180 |
| Magnesium Carbonate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Magnesium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Magnesium Fluosilicate <1> | All | 80/180 | 80/180 | | | 80/180 | | 80/180 | | 80/180 |
| Magnesium Hydroxide <21> | All | 100/210 | 100/210 | | | 80/180 | 100/210 | 100/210 | | 80/180 |
| Magnesium Nitrate | All | 100/210 | 100/210 | 70/160 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Magnesium Phosphate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Magnesium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Magnesium Sulfate/Phosphoric Acid | 1-40:0-36 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 100/210 |
| MAGNIFLOC Flocculant MW>40.000, Cationic Polyamine <6> | All | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Maleic Acid <21> | All | 80/180 | 100/210 | 80/180 | 100/210 | 100/210 <24> | 80/180 | 100/210 | 100/210 | 80/180 |
| Maleic Anhydride | 100 | | | 65/150 | | | 65/150 | | | |
| Malic Acid | All | | | | | 100/210 <24> | | | 100/210 <24> | |
| Manganese Chloride (Manganous Chloride) <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Manganese Nitrate (Manganous Nitrate) <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Manganese Sulfate (Manganous Sulfate) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|-----------------------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Manganous Sulfate/Ammonium Sulfate/Sulfuric Acid (concentrations in g/l) | up to 15:up to 150:up to 40 | | | 50/120 | 50/120 | | 50/120 | | | |
| MDI, see Diphenylmethane-4,4-Diisocyanate | | | | | | | | | | |
| Melamine Formaldehyde Resin | All | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Mercaptoacetic Acid | All | NR | 25/80 | 40/100 | | 40/100 | NR | 25/80 | | NR |
| Mercaptoethanol | 10 | | 80/180 | | | 80/180 | | 80/180 | | |
| Mercaptopropionic (3-) Acid | 100 | | | | | | NR | | | |
| Mercury | 100 | 100/210 | 120/250 | 105/220 | | 120/250 | 100/210 | 120/250 | 120/250 | 65/150 |
| Mercury(I) Chloride (Mercurous Chloride) <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Mercury(II) Chloride (Mercuric Chloride) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Metal Pickling Solutions (Sulfuric Acid/Hydrochloric Acid/ and/or Phosphoric Acid) <9> | 0.5–15 total | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Methacrylic Acid <7> | 25 | 40/100 | 40/100 | | | 50/120 | 40/100 | 40/100 | | 40/100 |
| Methacrylic Acid | 100 | NR | NR | | | LS | NR | NR | | NR |
| Methanamide, see Formamide | | | | | | | | | | |
| Methane/Nitrogen | 70:30 | 60/140 | 80/180 | | | 95/200 | 80/180 | 95/200 | | 60/140 |
| Methane Sulfonic Acid <6> | 0–70 | NR | LS | | | 40/100 | NR | NR | | NR |
| Methanol (Methyl Alcohol) | 5 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Methanol (Methyl Alcohol) | 20 | NR | 30/90 | | | 40/100 | NR | 40/100 | | NR |
| Methanol (Methyl Alcohol) | 40–100 | NR | LS | 40/100 | 40/100 | 40/100 | NR | NR | 40/100 | NR |
| Methanol (no condensation, no coalescence) | Fumes | | 65/150 | | | 80/180 | 80/180 | 80/180 | | |
| Methanol/Ethanolamine | 0–60:0–20 | NR | LS | | | 40/100 | NR | NR | | NR |
| Methanol/Formaldehyde/Sulfuric Acid | 60:20:2 | NR | LS | | | 40/100 | NR | NR | | NR |
| Methanol/Formaldehyde | 0–15:0–37 | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | |
| Methanol/Formaldehyde | 35:4 | NR | NR | | | 40/100 | NR | NR | | |
| 1-Methoxy-2-Propanol | 100 | NR | LS | | | 20/70 | NR | NR | | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|--------|--------|--------|--------|----------|--------|-------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Methyl Acetate | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Methyl Acetate | 100 | NR | NR | | | LS | NR | LS | | NR |
| Methyl Alcohol, see Methanol | | | | | | | | | | |
| Methylamine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Methylamine | 40 | LS | LS | | | LS | LS | LS | | NR |
| Methylamine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Methyl Bromide | 10 | 25/80 | 25/80 | | | 25/80 | 25/80 | 25/80 | | NR |
| Methyl Bromide | 100 | NR | NR | | | LS | NR | NR | | NR |
| 2-Methyl-3-Butenenitrile | All | 25/80 | 40/100 | | | 40/100 | 25/80 | 40/100 | | |
| Methyl Butyl Ketone (MBK), includes Methyl t-Butyl Ketone (MTBK) and other isomers | 100 | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | NR |
| Methyl Chloride (no condensation, no coalescence) | Fumes | 40/100 | 65/150 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | | |
| Methyl Chloroform (also 1,1,1-Trichloroethane inhibited) | 100 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | NR |
| Methyl Chloroform/Perchloroethylene | 75:25 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | |
| Methyl Distearyl Ammonium Chloride/Isopropanol | 75:25 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Methyl Ethyl Ketone | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Methyl Ethyl Ketone | 100 | LS | LS | NR | NR | 20/70 | LS | LS | NR | NR |
| Methyl Ethyl Ketone/2-Butanol/Triethylamine/2-Butoxy Ethanol | < 25 total | LS | 25/80 | | | 40/100 | LS | 25/80 | | NR |
| Methyl Formate | 5 | 40/100 | 45/110 | | | 50/120 | 45/110 | 50/120 | | |
| Methyl Isobutyl Ketone (MIBK) | 100 | 25/80 | 40/100 | NR | NR | 50/120 | 25/80 | 40/100 | NR | NR |
| Methyl Mercaptan, gas | All | 40/100 | 65/150 | | | 65/150 | 40/100 | 65/150 | | NR |
| Methyl Methacrylate | All | NR | LS | | | 25/80 | NR | 20/70 | | NR |
| N-Methyl-2-Pyrrolidone | 10 | | | | | LS | | | | |
| N-Methyl-2-Pyrrolidone | 100 | NR | NR | | | LS | NR | NR | | NR |
| Methyl Sulfate, see Dimethyl Sulfate | | | | | | | | | | |
| Methyldiethanolamine | 20 | 50/120 | 65/150 | | | 80/180 | 50/120 | 65/150 | | 40/100 |
| Methyldiethanolamine | 100 | 50/120 | 50/120 | | | 65/150 | 50/120 | 50/120 | | |
| Methylene Chloride (Dichloromethane) | 100 | NR | NR | | NR | LS | NR | NR | NR | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Methylene Chloride (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Methylene Chloride/Methanol/Water | 1:4:95 | 40/100 | 40/100 | | | 50/120 | 40/100 | 40/100 | | 40/100 |
| Methylstyrene (alpha) | 100 | 25/80 | 40/100 | NR | NR | 50/120 | 25/80 | 40/100 | NR | NR |
| Methyl t-Butyl Ether (MTBE) | 100 | NR | 25/80 | 25/80 | | 25/80 | NR | 25/80 | | NR |
| Methyl t-Butyl Ether (MTBE)/Fuel C (Fuel C is 50% Toluene and 50% Isooctane) | 15:85 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | NR |
| Methyl t-Butyl Ether (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Methyl Tin Trichloride/Dimethyl Tin Dichloride (10/90) in aqueous solution <7> | 50 | | | | | 45/110 | | | | |
| Metolachlor | 100 | | | 40/100 | | | | | | |
| Mineral Oils, aliphatic | 100 | 100/210 | 120/250 | 100/210 | 120/250 | 120/250 | 100/210 | 120/250 | 120/250 | 65/150 |
| Mineral Spirits | 100 | 105/220 | | 105/220 | 120/250 | | 105/220 | | 120/250 | |
| Molasses | 100 | 80/180 | 80/180 | | | | | | | |
| Monochloroacetic Acid, see Chloroacetic Acid | | | | | | | | | | |
| Monochlorobenzene, see Chlorobenzene | | | | | | | | | | |
| Monoethanolamine, see Ethanolamine | | | | | | | | | | |
| Monohydroxysuccinic Acid, see Malic Acid | | | | | | | | | | |
| Monomethylhydrazine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Morpholine <2> | 20 | 40/100 | 45/110 | | | 50/120 | 45/110 | 50/120 | | 40/100 |
| Morpholine <2> | 100 | NR | NR | | | 25/80 | NR | NR | | NR |
| Morpholine/Cyclohexylamine | All | NR | NR | | | 25/80 | NR | NR | | NR |
| Motor Oil | 100 | 100/210 | 120/250 | 105/220 | 105/220 | 120/250 | 100/210 | 120/250 | 105/220 | 65/150 |
| Muriatic Acid, see Hydrochloric Acid | | | | | | | | | | |
| Myristic Acid | 100 | 100/210 | 120/250 | 105/220 | 120/250 | 120/250 | 100/210 | 120/250 | 120/250 | 65/150 |
| Naphtha | 100 | 80/180 | 100/210 | 95/200 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 80/180 |
| Naphtha, heavy aromatic | 100 | | 50/120 | | | 50/120 | | 50/120 | | |
| Naphthalene | 100 | 100/210 | 100/210 | 95/200 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Neutralizer & Desmut | All | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Nickel Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Nickel Nitrate | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Nickel Plating Solution #1 (11% Nickel Sulfate, 2% Nickel Chloride, 1% Boric Acid) | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Nickel Plating Solution #2 (44% Nickel Sulfate, 4% Ammonium Chloride, 4% Boric Acid) | | 80/180 | 80/180 | 95/200 | 95/200 | 80/180 | 80/180 | 80/180 | 95/200 | 80/180 |
| Nickel Plating Solution #3 (15% Nickel Sulfate, 5% Nickel Chloride, 3% Boric Acid) | | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Nickel Sulfamate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Nickel Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Nitric Acid | 1 | 100/210 | | 100/210 | 80/180 | | 100/210 | | 80/180 | |
| Nitric Acid | 2-5 | 65/150 | 80/180 | 70/160 | 80/180 | 80/180 | 65/150 | 80/180 | 80/180 | 65/150 |
| Nitric Acid | 6-10 | 65/150 | 65/150 | 60/140 | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 | 50/120 |
| Nitric Acid | 11-20 | 50/120 | 50/120 | 65/150 | 65/150 | 65/150 | 50/120 | 65/150 | 65/150 | 50/120 |
| Nitric Acid <2,13> | 21-29 | 40/100 | 40/100 | 55/130 | 65/150 | 50/120 | 40/100 | 50/120 | | 40/100 |
| Nitric Acid <2,13> | 30-35 | 25/80 | 30/90 | 50/120 | | 40/100 | 30/90 | 40/100 | | NR |
| Nitric Acid <2,13> | 36-40 | NR | NR | NR | NR | 40/100 | NR | 25/80 | NR | NR |
| Nitric Acid <2,13> | 50 | | | NR | NR | | NR | | NR | |
| Nitric Acid <2,13> | 70 | NR | NR | | | LS | NR | NR | | NR |
| Nitric Acid, fumes (no condensation, no coalescence) <2> | < 60 (soln.) | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Nitric Acid, fumes (no condensation, no coalescence) <2> | > 60 (soln.) | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Nitric Acid/Hexavalent Chrome (Chromic Acid) <2,13> | 10:5 | 40/100 | 50/120 | | | 65/150 | 40/100 | 40/100 | | 40/100 |
| Nitric Acid/Hydrogen Peroxide/Hydrofluoric Acid <1,2,3,13> | 30:5:0.5 | 25/80 | 30/90 | | | 40/100 | 30/90 | 40/100 | | NR |
| Nitric Acid/Hydrofluoric Acid <1,2,13> | 25:3 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Nitric Acid/Hydrofluoric Acid <1,2,13> | 15:15 | | | | | 40/100 | | 40/100 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration % | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|--------------------|---|---------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Nitric Acid/Hydrofluoric Acid <1,2,13> | 20:6 | 50/120 | 50/120 | | | 60/140 | 55/130 | 60/140 | | 40/100 |
| Nitric Acid/Hydrofluoric Acid <1,2,13> | 30-35:3-5 | NR | NR | | | LS | NR | LS | | NR |
| Nitric Acid/Hydrofluoric Acid/Sulfuric Acid <1,2,13> | 20:8:2 | | | | | 60/140 | | 60/140 | | |
| Nitric Acid/Phosphoric Acid <2,13> | 5:5 | 65/150 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Nitric Acid/ Phosphoric Acid <2,13> | 24:23 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Nitric Acid/Sulfuric Acid <2,13> | 20:20 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Nitric Acid/Sulfuric Acid/Phosphoric Acid <2,13> | 20:5:2 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Nitrobenzene | 100 | NR | 25/80 | NR | NR | 40/100 | NR | 25/80 | NR | NR |
| Nitromethane (tris, Hydroxymethyl), traces of Formaldehyde, pH 3 | 51 | 50/120 | | 50/120 | | | 50/120 | | | |
| Nitrophenol <11> | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| N-Methyl-2-Pyrrolidone | 10 | | | | | LS | | | | |
| N-Methyl-2-Pyrrolidone | 100 | NR | NR | | | LS | NR | NR | | NR |
| Non-condensable Blow-Down Gases, see Flue Gas or Blow Down | | | | | | | | | | |
| Nonyl Phenol (Monononyl Phenol) | 100 | 45/110 | | 45/110 | 45/110 | | 45/110 | | | |
| Octanoic Acid | | 80/180 | 100/210 | 95/200 | 95/200 | 100/210 | 80/180 | 100/210 | 100/210 | |
| Oil, sweet and sour, crude | | 100/210 | 120/250 | 100/210 | 100/210 | 120/250 | 100/210 | 120/250 | 100/210 | 65/150 |
| Oil, lubricating, see Motor Oil | | | | | | | | | | |
| Oleic Acid | | 100/210 | 100/210 | 100/210 | 100/210 | 95/200 | 95/200 | | 100/210 | |
| Oleum (fuming Sulfuric Acid) | | NR | NR | | | LS | NR | NR | | NR |
| Olive Oil <18> | 100 | 100/210 | 120/250 | | | 120/250 | | | | |
| Organic Oil (animal, plants), see also the specific oil name; for example, Peanut Oil | 100 | | | 95/200 | 95/200 | | 95/200 | | 95/200 | |
| Ortho-Dichlorobenzene, see Dichlorobenzene | | | | | | | | | | |
| Oxalic Acid <18> | All | 50/120 | 50/120 | 80/180 | 80/180 | 50/120 | 50/120 | 50/120 | 80/180 | |
| Ozone in solution <6> | 2 mg/l | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Palladium suspensions in Ammonium Hydroxide, see Ammonium Hydroxide | | | | | | | | | | |
| Palladium suspensions in Hydrochloric Acid, see Hydrochloric Acid | | | | | | | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|---------|----------|--------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Palmitic Acid (n-Hexadecanoic Acid) <18> | 100 | 100/210 | 120/250 | 105/220 | 120/250 | 120/250 | 100/210 | | 120/250 | |
| Paper Mill Effluent, see Sulfite/Sulfate liquors (pulp mill) | | | | | | | | | | |
| Para-dichlorobenzene, see Dichlorobenzene | | | | | | | | | | |
| Peanut Oil <18> | 100 | 80/180 | 80/180 | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Pentabromo Diphenyl Oxide | 100 | 25/80 | 45/110 | | | 50/120 | 25/80 | 50/120 | | NR |
| Pentachlorophenol <4> | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Pentanedioic Acid, see Glutaric Acid | | | | | | | | | | |
| Peracetic Acid <1,2,3,6,13> | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Peracetic Acid <1,2,3,6,13> | 35 | NR | NR | | | LS | NR | NR | | NR |
| Perchloric Acid | 5 | 80/180 | | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Perchloric Acid | 10 | 65/150 | 65/150 | 65/150 | | 65/150 | 65/150 | 65/150 | 65/150 | 65/150 |
| Perchloric Acid | 30 | 40/100 | 40/100 | 25/80 | | 40/100 | 40/100 | 40/100 | 40/100 | 40/100 |
| Perchloroethylene | 100 | 25/80 | 50/120 | 40/100 | 40/100 | 50/120 | 25/80 | 50/120 | 40/100 | NR |
| Perchloroethylene/Methyl Chloroform | 75:25 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | |
| Petroleum, see Oil, crude | | | | | | | | | | |
| Petroleum Ether, see specific alkane hydrocarbon; for example, Hexane | | | | | | | | | | |
| Phenol (Carbolic Acid) <2,13> | 0-2 | 25/80 | 40/100 | 40/100 | 40/100 | 50/120 | 25/80 | 40/100 | 40/100 | NR |
| Phenol (Carbolic Acid) <2,3,13> | 5 | NR | 25/80 | 25/80 | 25/80 | 50/120 | NR | 25/80 | 25/80 | NR |
| Phenol (Carbolic Acid) <2,3,13> | 10 | NR | LS | | | 50/120 | NR | LS | | NR |
| Phenol (Carbolic Acid) <2,3,13> | 15 | NR | LS | NR | NR | 30/90 | NR | LS | NR | NR |
| Phenol (Carbolic Acid) <2,3,13> | 85 | NR | | | | | NR | | | |
| Phenol (Carbolic Acid) <2,3,13> | 88 | NR | NR | | | 20/70 | NR | NR | | NR |
| Phenol (Carbolic Acid) <2,3,13> | 100 | | | NR | NR | | NR | | NR | |
| Phenol Formaldehyde Resin | All | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Phenol Sulfonic Acid <6> | All | 25/80 | 25/80 | NR | NR | 25/80 | 25/80 | 25/80 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Phenol/Methanol/Anionic Detergent | 15:10:20 | NR | NR | | | LS | NR | NR | | NR |
| Phenolic Resin/Phenol <2> | 80:20 | | | | | 25/80 | | | | |
| Phenolic Resin/Phenol <2> | 90:10 | | | | | 50/120 | | | | |
| Phenyl Carbinol, see Benzyl Alcohol | | | | | | | | | | |
| Phosphoric Acid | 0.5–85 | 100/210 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Phosphoric Acid | 85–100 | 100/210 | 100/210 | 105/220 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 80/180 |
| Phosphoric Acid (Polyphosphoric Acid) | 115 | 100/210 | 100/210 | | | 105/220 | 100/210 | 100/210 | | 80/180 |
| Phosphoric Acid (Superphosphoric Acid, 76% P ₂ O ₅) | 105 | 100/210 | 100/210 | 105/220 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 80/180 |
| Phosphoric Acid/Gypsum | 61:39 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Phosphoric Acid/Hydrochloric Acid, sat'd with Chlorine <8,9,12> | 15:9 | 100/210 | 100/210 | | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | |
| Phosphoric Acid/Phosphorous Pentoxide/Hydrochloric Acid/ Sulfuric Dioxide (no condensation, no coalescence) | Fumes | 100/210 | 110/230 | | | 110/230 | 100/210 | 110/230 | | 80/180 |
| Phosphoric Acid/Sulfuric Acid <2,12> | 0–25:0–25 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Phosphoric Acid/Sulfuric Acid/Hydrofluoric Acid <1,2,12> | 0–75:1:0–3 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Phosphoric Acid/Tributyl Phosphate (vapor phase, condensation) | 85:0.5 | 50/120 | 60/140 | | | 60/140 | 50/120 | 60/140 | | 40/100 |
| Phosphoric Acid/Tributyl Phosphate/Hydrofluoric Acid (no condensation of TBP) | 88:0.1:0.03 | 80/180 | 80/180 | | | 100/210 | 80/180 | 80/180 | | |
| Phosphoric Acid, vapor <6> | All | 100/210 | 120/250 | | | 120/250 | 100/210 | 120/250 | | 80/180 |
| Phosphoric Acid/Zinc Chloride | 0–100:0.5–70 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Phosphorous Acid | 70 | 100/210 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Phosphorous Acid/Hydrochloric Acid <2,8,9,12,15> | 0–70:1–5 | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 | 100/210 | 100/210 | 80/180 | 80/180 |
| Phosphorus Oxychloride <15> | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Phosphorus Trichloride <15> | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Phthalic Acid <4> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | |
| Phthalic Anhydride | Sat'd | 100/210 | | 105/220 | | | 100/210 | | | |
| Picric Acid, alcoholic <4> | 10 | NR | LS | | | 40/100 | NR | NR | | NR |
| Pine Oil | 100 | 90/195 | 90/195 | | | 90/195 | 90/195 | 90/195 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Polyacrylamide | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Polyacrylic Acid | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Polyelectrolytes, anionic | 100 | 55/130 | | 55/130 | 55/130 | | 55/130 | | 55/130 | |
| Polyethylene Glycol | 100 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Polyethylene Glycols and Methoxypolyethylene Glycols | 100 | 40/100 | | 50/120 | | | 40/100 | | | |
| Polyethyleneimine | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Polyphosphoric Acid 115% H ₃ PO ₄ , see Phosphoric Acid | | | | | | | | | | |
| Polyvinyl Acetate adhesives | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Polyvinyl Acetate emulsion | | 100/210 | | 100/210 | | | 100/210 | | | |
| Polyvinyl Alcohol | 10 | 80/180 | | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Polyvinyl Alcohol | 100 | 80/180 | 80/180 | 50/120 | 50/120 | 80/180 | 80/180 | 80/180 | 50/120 | |
| Polyvinyl Chloride latex with 35 parts Dioctyl Phthalate <6> | All | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | |
| Potassium Aluminum Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Bicarbonate | All | 80/180 | 80/180 | 70/160 | 65/150 | 80/180 | 70/160 | 80/180 | 65/150 | 80/180 |
| Potassium Bromide <21> | All | 100/210 | 100/210 | 70/160 | 70/160 | 100/210 <24> | 100/210 | 100/210 | 70/160 | 80/180 |
| Potassium Carbonate <1> | 0-50 | 80/180 | 65/150 | 65/150 | 40/100 | 40/100 | 80/180 | 40/100 | | |
| Potassium Carbonate/Boric Acid/Potassium Metavanadate <1> | 20:4:1 | 80/180 | 80/180 | | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Potassium Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Dichromate <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Ferricyanide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Ferrocyanide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------------------|---|---------|---------|---------|-----------------|----------|---------|---------|---------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Potassium Fluoride <1> | All | 80/180 | 80/180 | 65/150 | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Potassium Gold Cyanide | 12 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Potassium Hydroxide <1,2> | 0-45 | 65/150 | 40/100 | 65/150 | NR | 25/80 | 65/150 | 25/80 | NR | |
| Potassium Hydroxide <1,2> | 50 | 65/150 | | 65/150 | NR | | 65/150 | | NR | |
| Potassium Hydroxide/Potassium Cyanide/Copper Cyanide <1,2> | 2:3:8 oz/gal; 2:2.5:7% | 65/150 | 40/100 | | | 25/80 | 65/150 | 25/80 | | |
| Potassium Hypochlorite/Potassium Hydroxide/Potassium Metasilicate <2,3,9> | 50:40:10 | 50/120 | | | | | | | | |
| Potassium Iodide | All | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 100/210 |
| Potassium Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Oxalate | All | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Potassium Permanganate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Persulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Potassium Pyrophosphate (Tetrapotassium Diphosphate) | 0-60 | 55/130 | 65/150 | 40/100 | 65/150 | 65/150 | 55/130 | 65/150 | 65/150 | 55/130 |
| Potassium Silicofluoride <1> | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Potassium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Propane | 100 | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Propanol (n-) | 100 | 40/100 | 40/100 | | | 50/120 | 40/100 | 40/100 | | NR |
| Propanol (n-) (no condensation, no coalescence) | Fumes | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Propenoic Acid, see Acrylic Acid | | | | | | | | | | |
| Propionic Acid | 0-20 | 100/210 | 100/210 | 80/180 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Propionic Acid | 21-50 | 80/180 | 80/180 | 65/150 | 100/210 | 80/180 | 80/180 | 80/180 | 100/210 | |
| Propionic Acid | 100 | NR | 25/80 | | | 40/100 | NR | 25/80 | 25/80 | NR |
| Propionyl Chloride | 100 | NR | NR | | | LS | NR | NR | | NR |
| Propyl Acetate | 100 | NR | LS | | | 25/80 | NR | NR | | NR |
| Propyl Bromide | 100 | NR | LS | | | 25/80 | NR | LS | | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Propyl Chloride | 100 | NR | LS | | | 25/80 | NR | LS | | NR |
| Propylene Dichloride | 100 | NR | | NR | NR | | NR | | NR | |
| Propylene Glycol | 100 | 100/210 | 100/210 | 105/220 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | |
| Propylene Glycol Monomethyl Ether (1-Methoxy-2-Propanol) | 100 | NR | LS | | | 20/70 | NR | NR | | NR |
| Propylene Glycol Methyl Ether Acetate <2> | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Propylene Glycol Monomethyl Ether Acetate <2> | 100 | NR | LS | | | 20/70 | NR | NR | | NR |
| Propylene Glycol/Ethoxylated Fatty Alcohol/Diethylene Glycol n-Butyl Ether | 60:20:20 | 40/100 | 45/110 | | | 50/120 | 40/100 | 50/120 | | NR |
| Propylene Glycol/Monoethanolamine | 0-99:1 | 25/80 | 30/90 | | | 40/100 | 25/80 | 30/90 | | NR |
| Propylene Oxide | 100 | NR | NR | | | NR | NR | NR | | NR |
| Propylene Oxide (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Pulp Paper Mill Blow Down (non-condensable gases), see Blow Down | | | | | | | | | | |
| Pyridine | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |
| Pyridine | 100 | NR | NR | | | LS | NR | NR | | NR |
| Quaternary Amine Salts | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Quaternary Ammonium Salts | All | 80/180 | | 80/180 | 80/180 | | 80/180 | | 80/180 | |
| Quinoline | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Quinoline | 100 | | | | | LS | | | | |
| Rayon Spin Bath | | | | | | 60/140 | | | | |
| Rayon Spinning (no condensation, no coalescence) | Fumes | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | |
| Recovery Boiler Gases, see Flue Gas | | | | | | | | | | |
| Red Liquor | All | 80/180 | 80/180 | 75/165 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Salicylic Acid | All | 70/160 | 70/160 | 70/160 | | | 70/160 | | 60/140 | |
| Salt Brine, see Brine, salt | | | | | | | | | | |
| Scrubbing Low MW Amines with 10% Sulfuric Acid, see Amine Salts | | | | | | | | | | |
| Sea Water | | 100/210 | 100/210 | 100/210 | 95/200 | 100/210 | 100/210 | 100/210 | 95/200 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Selenious Acid <21> | All | 100/210 | 100/210 | 100/210 | 50/120 | 100/210 | 100/210 | 100/210 | 50/120 | 80/180 |
| Sewage Gas, Hydrogen Sulfide, see Hydrogen Sulfide | | | | | | | | | | |
| Silicon Tetrafluoride/Hydrofluoric Acid/Sulfuric Acid <1,2> | < 10 total | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Silver Cyanide | 100 | 100/210 | | 100/210 | | | 100/210 | | | |
| Silver Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Silver Plating Solution (4% Silver, 7% Potassium Cyanide, 5% Sodium Cyanide, 2% Potassium Carbonate) <1> | | 80/180 | 80/180 | 95/200 | 80/180 | 65/150 | 80/180 | 65/150 | 80/180 | |
| Sodium Acetate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | |
| Sodium Acid Sulfite, see Sodium Bisulfite | | | | | | | | | | |
| Sodium Alkyd Aryl Sulfonates | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Sodium Alkyl Xanthate | All | 65/150 | | 65/150 | | | 65/150 | | | |
| Sodium Aluminate <1> | All | 70/160 | 70/160 | 70/160 | | 50/120 | 70/160 | 50/120 | | 50/120 |
| Sodium Benzoate <21> | All | 80/180 | 80/180 | 100/210 | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Sodium Bicarbonate | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Sodium Bicarbonate/Sodium Carbonate <1> | 15:20 | 80/180 | 80/180 | | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Sodium Bichromate, see Sodium Dichromate | | | | | | | | | | |
| Sodium Bifluoride <1> | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Sodium Bisulfate (Sodium Hydrogen Sulfate) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Bisulfide (Sodium Hydrosulfide) | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Sodium Bisulfite (Sodium Hydrogen Sulfite) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Borate (Borax, Sodium Tetraborate) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Bromate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Bromide <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|--------------------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sodium Carbonate <1> | All | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 | 80/180 | 65/150 | 80/180 | 80/180 |
| Sodium Carbonate/Sodium Bicarbonate <1> | 20:15 | 80/180 | 80/180 | | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Sodium Chlorate, stable <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Chlorate/Sodium Chloride <21> | 34:20 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Chloride (Brine, salt) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Chloride saturated solution, see Brine, salt | | | | | | | | | | |
| Sodium Chloride with Chlorine, see Brine, chlorinated | | | | | | | | | | |
| Sodium Chloride/Ethyl Vanillin | 0.1-25:1 | 50/120 | 50/120 | | | | | | | |
| Sodium Chloride/Hydrochloric Acid <2,8,9,12> | Sat'd. NaCl:5 | 100/210 | | 100/210 | 100/210 | | 100/210 | | 100/210 | |
| Sodium Chloride/Magnesium Oxide/Lime | 0.5-26:0.1-20: 0.1-10 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sodium Chloride/Sodium Hydroxide <1,2> | 0.5-10:0.1-2 | 80/180 | 65/150 | | | 40/100 | 80/180 | 65/150 | | 50/120 |
| Sodium Chloride/Sodium Chlorate | 20:34 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Sodium Chlorite, pH < 6, see Chlorine Dioxide | | | | | | | | | | |
| Sodium Chlorite, stable, pH > 6, <5,21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sodium Chlorite/Sodium Hypochlorite, pH > 11, <2,3,9> | 0.1-25:0.1-15 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Sodium Chromate | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Cyanide <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | 100/210 | |
| Sodium Dichromate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Dichromate/Sulfuric Acid | up to 3:up to 30 | NR | | | | | NR | | | |
| Sodium Dimethyldithiocarbamate/Disodium Ethylene Bisdithiocarbamate | 0.1-15:0.1-15 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Sodium Diphosphate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Dodecylbenzenesulfonate | All | 70/160 | 70/160 | | | 70/160 | 70/160 | 70/160 | | |
| Sodium Ferricyanide <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------------------|---|---------|---------|--------|-----------------|-----------------------------------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sodium Ferrocyanide <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Fluoride <1> | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Sodium Fluoroborate <1,21> | All | 95/200 | 95/200 | | | 95/200 | | | | |
| Sodium Fluorosilicate <1> | All | 50/120 | 50/120 | 65/150 | | 50/120 | 50/120 | 50/120 | | 50/120 |
| Sodium Gluconate <21> | All | 80/180 | 95/200 | | | 100/210 <24> | 95/200 | 100/210 | | 65/150 |
| Sodium Glycolate <21> | All | 80/180 | 95/200 | | | 100/210 <24> | 80/180 | 95/200 | | 65/150 |
| Sodium Hexametaphosphate | All | 80/180 | 80/180 | 65/150 | 65/150 | 80/180 | 80/180 | 80/180 | 65/150 | 80/180 |
| Sodium Hydrosulfide (Sodium Bisulfide) | All | 80/180 | 80/180 | 60/140 | 60/140 | 80/180 | 80/180 | 80/180 | 60/140 | 80/180 |
| Sodium Hydrosulfide/Sodium Hydroxide | 15:15 | 60/140 | | 60/140 | | | 60/140 | | | |
| Sodium Hydrosulfite | All | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Sodium Hydroxide <1,2,7> | 0.5 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 |
| Sodium Hydroxide <1,2,7> | 1 | 80/180 | 80/180 | 80/180 | 70/160 | 80/180 | 80/180 | 80/180 | 70/160 | 65/150 |
| Sodium Hydroxide <1,2> | 5 | 80/180 | 60/140 | 70/160 | | 40/100 | 70/160 | 40/100 | | |
| Sodium Hydroxide <1,2> | 10 | 65/150 | 50/120 | 60/140 | | | 65/150 | | | |
| Sodium Hydroxide <1,2> | 25 | 65/150 | 50/120 | 50/120 | | | 65/150 | | | |
| Sodium Hydroxide <1,2> | 50 | 80/180 | 65/150 | 65/150 | | | 80/180 | | | |
| Sodium Hydroxide/Sodium Bisulfite <1,2> | All | 80/180 | 65/150 | | | 40/100 | 80/180 | 65/150 | | 65/150 |
| Sodium Hydroxide/Sodium Chloride/Sodium Sulfate/Sodium Hypochlorite (active Chlorine) <2,3,5,9> | "1-20:1-15:1-8 : 0-15" | 50/120 | | | NR | | 510A/B: 65/150 510C: 50/120 | | NR | |
| Sodium Hydroxide/Organics (within solubility limits; i.e., no phase separation or coalescence) <1,2> | 8:Traces | 80/180 | 65/150 | | | | | | | |
| Sodium Hydroxide/Sodium Hydrosulfide <1,2> | 15:15 | 60/140 | | 60/140 | | | 60/140 | | | |
| Sodium Hydroxide/Sodium Hypochlorite (active Chlorine) <1,2> | 0-20:0-0.1 | 80/180 | | | | | | | | |
| Sodium Hypochlorite (stable, alkaline pH > 11) <2,3,5,9> | 2 | 65/150 <19> | 50/120 | 65/150 | 50/120 | 40/100 | 65/150 | 40/100 | 50/120 | 65/150 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-----------------|-----------------------------------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sodium Hypochlorite (stable, alkaline pH > 11), <2,3,5,9> | 5.25 | 65/150 <19> | 50/120 | 65/150 | 50/120 | 40/100 | 65/150 | 40/100 | 50/120 | 65/150 |
| Sodium Hypochlorite (stable, alkaline pH > 11) <2,3,5,9,19> | 10 | 50/120 | <6> | | | | 510A/B: 65/150 510C: 50/120 | | | |
| Sodium Hypochlorite (stable, alkaline pH > 11) <2,3,5,9,19> | 11–17 | 50/120 | <6> | | NR | | 510A/B: 65/150 510C: 50/120 | | NR | |
| Sodium Hypochlorite (stable, alkaline pH > 11) <2,3,5,9> | 18–25 | | | | | | 510A: 40/100 | | | |
| Sodium Lauryl Sulfate | All | 70/160 | 70/160 | 80/180 | 70/160 | 70/160 | 70/160 | 70/160 | 70/160 | |
| Sodium Metabisulfite <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Methylthiocarbamate | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Sodium Monophosphate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Myristyl Sulfate | All | 70/160 | 70/160 | | | 70/160 | 70/160 | 70/160 | | |
| Sodium Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Nitrite <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Oxalate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Perchlorate | 60 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | 40/100 |
| Sodium Persulfate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Phosphate, mono-, di-, tribasic <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Polyacrylate | All | 80/180 | 80/180 | 65/150 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | |
| Sodium Salt o-Phenylphenate, antimicrobial | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Sodium Sarcosinate | 40 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Sodium Silicate <1> | All | 80/180 | 80/180 | 80/180 | 80/180 | 65/150 | 80/180 | 65/150 | 80/180 | 80/180 |
| Sodium Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sodium Sulfate/Sodium Sulfite <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Sulfhydrate, see Sodium Hydrosulfide | | | | | | | | | | |
| Sodium Sulfide <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Sulfite <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Sulfite/Sodium Hydroxide/Toluene | 22:10:5 | 25/80 | 40/100 | | | 40/100 | 25/80 | 40/100 | | NR |
| Sodium Tartrate <21> | All | 100/210 | 100/210 | | | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Sodium Tetraborate (Borax, Sodium Borate) <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Thiocyanate <21> | All | 80/180 | 80/180 | 95/200 | 95/200 | 80/180 | 80/180 | 80/180 | 95/200 | 80/180 |
| Sodium Thiosulfate | All | 80/180 | 80/180 | 50/120 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Sodium Tridecylbenzene Sulfonate | All | 50/120 | | 50/120 | | | 50/120 | | | |
| Sodium Tripolyphosphate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sodium Xylene Sulfonate | All | 70/160 | 70/160 | 100/210 | | 70/160 | 70/160 | 70/160 | | |
| Soil | | 30/90 | | 30/90 | | | 30/90 | | | |
| Solvent Extraction Solutions (3% Isodecanol, 6% Amines tri-C8-C10-alkyl, 91% Kerosene) | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 65/150 |
| Solvent Extraction Solutions (4% Trioctylphosphine Oxide (TOPO), 4% Di 2-Ethylhexyl Phosphoric Acid (DEHPA), 92% Kerosene) | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Sorbitol Solutions | All | 70/160 | 70/160 | 65/150 | 65/150 | 80/180 | 70/160 | 70/160 | 65/150 | |
| Sour Crude Oil, see Crude Oil | | | | | | | | | | |
| Soy (Soya) Sauce <18> | | 70/160 | 70/160 | | | | 100/210 | | | |
| Soya Oil <18> | 100 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Soybean Oil | 100 | 80/180 | | 80/180 | 100/210 | | 80/180 | | 100/210 | |
| Soybean Oil, epoxidized (ESO) | 100 | 50/120 | | 65/150 | 100/210 | | 50/120 | | 65/150 | |
| Spearmint Oil <18> | 100 | 40/100 | 40/100 | | | | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|--------------------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Stannic Chloride | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 | 100/210 | 100/210 | 80/180 | 80/180 |
| Stannous Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Steam, dry (no condensation) | | 100/210 | 105/220 | 105/220 | 105/220 | 105/220 | 100/210 | 105/220 | 105/220 | 80/180 |
| Steam, wet (condensation) | | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Stearic Acid | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| Styrene | 100 | NR | 40/100 | 25/80 | 25/80 | 50/120 | NR | 40/100 | 25/80 | NR |
| Styrene Acrylic Emulsion | All | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Styrene-Butadiene Latex | All | 60/140 | 60/140 | | | 60/140 | 60/140 | 60/140 | | 60/140 |
| Succinonitrile, aqueous | All | 25/80 | 40/100 | 40/100 | 40/100 | 40/100 | 25/80 | 40/100 | 40/100 | NR |
| Sugar/Sucrose <18> | All | 100/210 | 100/210 | | | | | | | |
| Sugar Beet, liquor <18> | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | | 80/180 | |
| Sugar Cane, liquor and sweetwater <18> | All | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | | 80/180 | |
| Sulfamic Acid | 0.5-10 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sulfamic Acid | 11-15 | 80/180 | 80/180 | 100/210 | 100/210 | 80/180 | 80/180 | 80/180 | 100/210 | 65/150 |
| Sulfamic Acid | 16-25 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Sulfamic Acid/Boric Acid/Glycolic Acid | 0.5-25:0.5-30: 0.5-10 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | |
| Sulfanilic Acid (meta, para) <4,6,21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Sulfate process non-condensable gases, see Flue Gas | | | | | | | | | | |
| Sulfated Detergents, see Sulfonated Detergents | | | | | | | | | | |
| Sulfated Tall Oil Fatty Acid, see Tall Oil | | | | | | | | | | |
| Sulfides scrubbing with caustic, see Sodium Hydroxide | | | | | | | | | | |
| Sulfite/Sulfate Liquors, pulp mill | | 95/200 | 95/200 | 105/220 | 105/220 | 95/200 | 95/200 | 95/200 | 105/220 | 80/180 |
| Sulfonated Detergents | 100 | 70/160 | 80/180 | | | 80/180 | 70/160 | 80/180 | | 70/160 |
| Sulfur, molten, dry <16> | 100 | | 120/250 | | | 150/300 | | 120/250 | | |
| Sulfur, molten (traces of Hydrogen Sulfide, Sulfur Dioxide, Sulfur Trioxide, Water) | 100 | NR | | | | | NR | | | |
| Sulfur, wettable, fungicide <4> | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|-----------------------------|---|---------|---------|---------|---------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sulfur Chloride | 100 | NR | NR | NR | NR | LS | NR | NR | NR | NR |
| Sulfur Chloride (no condensation, no coalescence) | Fumes | 95/200 | 95/200 | | | 95/200 | 95/200 | 95/200 | | 80/180 |
| Sulfur Dichloride (no condensation, no coalescence) | Fumes | | | NR | NR | | NR | | NR | |
| Sulfur Dioxide, see Flue Gas | | | | | | | | | | |
| Sulfur Trioxide, dry (no condensation, no coalescence) <6> | Fumes | 100/210 | | 105/220 | | | 100/210 | | | |
| Sulfur Trioxide, wet, see Sulfuric Acid <6> | | | | | | | | | | |
| Sulfuric Acid <2,13> | 0.5–25 | 100/210 | 105/220 | 105/220 | 105/220 | 105/220 | 100/210 | 105/220 | 105/220 | 80/180 |
| Sulfuric Acid <2,13> | 26–50 | 100/210 | 100/210 | 95/200 | 95/200 | 100/210 | 100/210 | 100/210 | 95/200 | 80/180 |
| Sulfuric Acid <2,13,15> | 51–70 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Sulfuric Acid <2,13,15> | 71–75 | 40/100 | 50/120 | 50/120 | 50/120 | 80/180 | 40/100 | 50/120 | 50/120 | 40/100 |
| Sulfuric Acid <2,13,15> | 76–80 | 40/100 | 40/100 | NR | NR | 50/120 | 40/100 | 40/100 | NR | |
| Sulfuric Acid <2,13,15> | > 80 | NR | NR | | | LS | NR | LS | | NR |
| Sulfuric Acid/Ammonium Bifluoride <1> | 0–75:0.1–3 | 40/100 | 50/120 | | | 65/150 | 40/100 | 50/120 | | |
| Sulfuric Acid/Ammonium Sulfate/Manganous Sulfate (concentrations in g/l) | Up to 40:up to 150:up to 15 | | | 50/120 | 50/120 | | 50/120 | | | |
| Sulfuric Acid/Benzenesulfonic Acid/Water <2,12> | 7:88:5 | 60/140 | | 60/140 | | | 60/140 | | | |
| Sulfuric Acid/Chromic Acid <2,12> | 20:20 | NR | | | | | NR | | | |
| Sulfuric Acid/Chromic Acid mixture (Maximum total concentration 10%) <2,12> | | 50/120 | 65/150 | | | 65/150 | 50/120 | 65/150 | | 50/120 |
| Sulfuric Acid/Copper Salts, see Sulfuric Acid | | | | | | | | | | |
| Sulfuric Acid/Copper Sulfate <2,12> | 0–25:1–35 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | |
| Sulfuric Acid/Copper Sulfate/Sodium Persulfate/EDTA <2,12> | 13:12:1:1 | 55/130 | 55/130 | | | 55/130 | 55/130 | 55/130 | | 55/130 |
| Sulfuric Acid/Hydriodic Acid <2,12> | 60:20 | 40/100 | 40/100 | | | 50/120 | 40/100 | 40/100 | | |
| Sulfuric Acid/Hydrochloric Acid, iron and steel cleaning bath <2,8,9,12> | 23:9 | 95/200 | | 95/200 | 100/210 | | 95/200 | | 100/210 | |
| Sulfuric Acid/Hydrochloric Acid <2,8,9,12> | 1–25:1–10 | 80/180 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sulfuric Acid/Hydrochloric Acid <2,8,9,12> | 50:15 | 40/100 | 45/110 | | | 50/120 | 40/100 | 50/120 | | |
| Sulfuric Acid/Hydrochloric Acid/Hydrofluoric Acid/Phosphoric Acid/Chlorinated Solvents <1,2,8,12> | 40:20:5:35:1 | NR | NR | | | LS | NR | LS | | NR |
| Sulfuric Acid/ Hydrofluoric Acid <1,2,12> | 1–20:3–6 | 55/130 | 55/130 | | | 60/140 | 55/130 | 60/140 | | 40/100 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|----------------|---|---------|--------|--------|---------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Sulfuric Acid/Hydrofluoric Acid <1,2,12> | 10:10 | 40/100 | 50/120 | | | 65/150 | 40/100 | 40/100 | | |
| Sulfuric Acid/Hydrofluoric Acid <1,2,12> | 25:10 | 40/100 | 45/110 | | | 50/120 | 40/100 | 40/100 | | |
| Sulfuric Acid/Hydrofluoric Acid <1,2,12> | 30-35:3-5 | LS | LS | | | LS | LS | LS | | LS |
| Sulfuric Acid/Hydrofluosilicic Acid/ MIBK <1,2,12> | 25:1:2 | LS | 40/100 | | | 50/120 | LS | 40/100 | | |
| Sulfuric Acid/Hydrogen Peroxide <2,3,12> | 1-20:1-10 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | |
| Sulfuric Acid/Hydrogen Peroxide/Ammonium Sulfate/ Copper Sulfate <2,3,12> | 10:5:5:5 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | |
| Sulfuric Acid/Hydrogen Sulfide <2,12> | 1-50:0-10 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sulfuric Acid/Inorganic Salts <2,12> | 0.5-20:0.5-50 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Sulfuric Acid/Inorganic Salts <2,12> | 21-50:0.5-20 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Sulfuric Acid/Lactic Acid/Sodium Sulfate <2,12> | 50:20:0-10 | 40/100 | 50/120 | | | 65/150 | 40/100 | 50/120 | | 40/100 |
| Sulfuric Acid/Methanol <2,12> | 30:5 | | 40/100 | | | 50/120 | | | | |
| Sulfuric Acid/Nitric Acid <2,12> | 20:5 | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | 65/150 |
| Sulfuric Acid/Nitric Acid/Phosphoric Acid | 0-13:0-11:0-30 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | |
| Sulfuric Acid/Phosphoric Acid <2,12> | 0-25:0-25 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Sulfuric Acid vapor, see Sulfuric Acid | | | | | | | | | | |
| Sulfuric Acid/Sodium Dichromate, see Sulfuric Acid/Chromic Acid mixture | | | | | | | | | | |
| Sulfuric Acid/Sulfate Salts, max. total concentration 80%, see Sulfuric Acid | | | | | | | | | | |
| Sulfurous Acid | 10 | 50/120 | 50/120 | 40/100 | 40/100 | 50/120 | 50/120 | 50/120 | 40/100 | 50/120 |
| Superphosphoric Acid (76% P ₂ O ₅), see Phosphoric Acid | | | | | | | | | | |
| Surfactant, see specific chemical name <6,14> | | | | | | | | | | |
| Surfactant, anionic | All | 40/100 | 50/120 | | | 50/120 | 40/100 | 40/100 | | |
| Tall Oil, storage <6> | 100 | 95/200 | 105/220 | 65/150 | 65/150 | 105/220 | 95/200 | 105/220 | 65/150 | |
| Tall Oil, reactor <6> | | 100/210 | 105/220 | | | 105/220 | 100/210 | 105/220 | | |
| Tallow/Sulfuric Acid | 99:1 | 80/180 | 80/180 | | | | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Tannic Acid <21> | All | 100/210 | 100/210 | 100/210 | | 100/210 <24> | 100/210 | 100/210 | | 65/150 |
| Tap Water, hard <2> | All | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Tap Water, soft <2> | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Tar Camphor, see Naphthalene | | | | | | | | | | |
| Tartaric Acid | > 0.5 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 65/150 |
| t-Butyl Methyl Ether (MTBE) | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 30/90 |
| t-Butyl Methyl Ether (MTBE) | 100 | NR | 25/80 | | | 25/80 | NR | 25/80 | | NR |
| Tetrabutyltin | 100 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | |
| Tetrachloroethane | 100 | 40/100 | 50/120 | | | 55/130 | 40/100 | 50/120 | | NR |
| Tetrachloroethylene (Perchloroethylene) | 100 | 25/80 | 50/120 | 40/100 | 40/100 | 50/120 | 25/80 | 50/120 | 40/100 | NR |
| Tetrachloropyridine | 100 | 25/80 | 50/120 | 50/120 | | 50/120 | 25/80 | 50/120 | | NR |
| Tetraethyl Orthosilicate | 100 | | | | | 40/100 | | | | |
| Tetrahydrofuran | 0–5 | 40/100 | 40/100 | | | 50/120 | 40/100 | 50/120 | | |
| Tetrahydrofuran | 10–100 | NR | NR | | | LS | NR | NR | | NR |
| Tetrahydrofuran (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Tetramethyl Ammonium Hydroxide <1> | 0–10 | 50/120 | 40/100 | | | | 50/120 | 40/100 | | |
| Tetra-n-Butylammonium Hydroxide <1,2> | 40 | 40/100 | 40/100 | | | | 40/100 | 40/100 | | |
| Tetra-n-Butylphosphonium Hydroxide <1,2> | 40 | 40/100 | 40/100 | | | | 40/100 | 40/100 | | |
| Tetrapotassium Diphosphate (Potassium Pyrophosphate) | 0–60 | 55/130 | 65/150 | 40/100 | 65/150 | 65/150 | 55/130 | 65/150 | 65/150 | 55/130 |
| Tetrasodium Ethylenediaminetetraacetic Acid (Tetrasodium salt of EDTA) | All | 80/180 | 80/180 | | | 65/150 | 80/180 | 65/150 | | 80/180 |
| Tetrasodium Pyrophosphate (Sodium Pyrophosphate) <21> | All | 40/100 | | 40/100 | | | 40/100 | | | |
| Thermal Oxidizer (HCl absorption), see Flue Gas, wet | | | | | | | | | | |
| Thioglycolic Acid, see Mercaptoacetic Acid | | | | | | | | | | |
| Thionyl Chloride | 100 | NR | NR | | | LS | NR | NR | | NR |
| Thiourea | 0–50 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Tin Fluoborate Plating Solution (18% Stannous Fluoborate, 7% Tin, 9% Fluoboric Acid, 2% Boric Acid) <1> | | 100/210 | 100/210 | 95/200 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------|---|---------|---------|---------|-----------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Titanium Dioxide | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Titanium Dioxide/Sulfuric Acid | 0-30:30 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 80/180 |
| Titanium Tetrachloride | All | 65/150 | 80/180 | | | 80/180 | 65/150 | 80/180 | | |
| Tobias Acid (2-Naphthylamine-1-Sulfonic Acid) <6> | 100 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 | | |
| Toluene | 100 | 25/80 | 40/100 | 50/120 | 40/100 | 50/120 | 25/80 | 40/100 | 50/120 | NR |
| Toluene/Acetone <2> | 50:50 | NR | | NR | NR | | NR | | | |
| Toluene (no condensation, no coalescence) | Fumes | | 65/150 | | | 80/180 | 80/180 | 80/180 | | |
| Toluene Diisocyanate (TDI) <2> | 100 | NR | NR | 25/80 | | 30/85 <6> | NR | NR | | NR |
| Toluenesulfonic Acid <6,21> | All | 80/180 | 95/200 | 100/210 | 100/210 | 100/210 <24> | 95/200 | 100/210 | 100/210 | |
| Toluidine (o-, p-, m-) | 100 | NR | NR | | | 20/70 | NR | NR | | NR |
| Tomato Sauce <18> | All | 90/195 | 90/195 | | | | | | | |
| Transformer Oils, ester types | 100 | 50/120 | 65/150 | | | 65/150 | | 65/150 | | |
| Transformer Oils, Silicone and Mineral Oils <16> | 100 | 100/210 | 120/250 | 100/210 | 100/210 | 150/300 | 110/230 | 120/250 | 100/210 | |
| Tributyl Phosphate | 100 | 50/120 | 60/140 | 65/150 | 65/150 | 60/140 | 50/120 | 60/140 | 65/150 | 40/100 |
| Trichloroacetic Acid | 50 | 100/210 | | 100/210 | 100/210 | | 100/210 | | 100/210 | |
| Trichloroacetic Acid | 85 | 25/80 | 40/100 | | | 50/120 | 25/80 | 40/100 | | 25/80 |
| Trichlorobenzene | 100 | NR | | | | | NR | | | |
| Trichloroethane | 100 | 40/100 | 50/120 | 25/80 | 25/80 | 50/120 | 40/100 | 50/120 | | NR |
| Trichloroethane (1,1,2-) (Vinyl Trichloride) | 100 | | | 25/80 | 25/80 | | | | | |
| Trichloroethylene <15> | 100 | NR | NR | NR | NR | LS | NR | NR | | NR |
| Tricresyl Phosphate | 100 | 70/160 | 70/160 | 50/120 | 50/120 | 70/160 | 70/160 | 70/160 | 50/120 | |
| Triethanolamine | 100 | 50/120 | 50/120 | 65/150 | 65/150 | 65/150 | 50/120 | 50/120 | 65/150 | NR |
| Triethylamine | All | 50/120 | 50/120 | 65/150 | 50/120 | 50/120 | 50/120 | 50/120 | 50/120 | NR |
| Triethylamine/Triethylamine Hydrochloride/Hydrochloric Acid <2,8,12> | 50:20:5 | 50/120 | 50/120 | | | 50/120 | 50/120 | 50/120 | | NR |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|--------|--------|-----------------|----------|---------|--------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Triethylene Glycol, see Ethylene Glycol | | | | | | | | | | |
| Trifluoroacetic Acid, see Chloroacetic Acid | | | | | | | | | | |
| Trihydroxybenzoic Acid, see Gallic Acid | | | | | | | | | | |
| Trimethyl Carbinol, see Butyl Alcohol | | | | | | | | | | |
| Trimethylamine | 20 | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | NR |
| Trimethylamine | 100 | 25/80 | 25/80 | | | 40/100 | 25/80 | 25/80 | | |
| Trimethylamine (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Trimethylamine Hydrochloride (pH 3-4) | 100 | | | 55/130 | | | 55/130 | | | |
| Trimethylammonium Chloride (Trimethylamine HCl, TMA-HCl) | 70 | 40/100 | 40/100 | | | 50/120 <7> | 40/100 | 40/100 | | 40/100 |
| Trimethylbenzene | 100 | 25/80 | 40/100 | | | 50/120 | 25/80 | 50/120 | | NR |
| Trimethylene Chlorobromide | | NR | 25/80 | | | 40/100 | NR | 25/80 | | NR |
| Trioctyl Phosphate | 100 | 70/160 | 70/160 | | | 80/180 | 70/160 | 70/160 | | 40/100 |
| Trioctyl Phosphine Oxide/Di-2-Ethylhexyl Phosphoric Acid (DEHPA)/Kerosene | 4:4:92 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | |
| Triphenyl Phosphite | 100 | 40/100 | | 40/100 | 40/100 | | 40/100 | | 40/100 | |
| Tripropylene Glycol, see Ethylene Glycol | | | | | | | | | | |
| Trisodium Phosphate <21> | All | 100/210 | 100/210 | 80/180 | 80/180 | 100/210 <24> | 100/210 | 100/210 | 80/180 | 80/180 |
| Turpentine | 100 | 65/150 | 100/210 | | | 100/210 | 65/150 | 100/210 | | 40/100 |
| Turpentine, crude sulfate | 100 | 40/100 | | 40/100 | | | 40/100 | | | |
| Turpentine, pure gum | 100 | 30/90 | | 40/100 | 80/180 | | 30/90 | | | |
| Uranium <6> | | | | | | | | | | |
| Uranium Extraction, see Kerosene | | | | | | | | | | |
| Urea | All | 70/160 | 70/160 | 80/180 | 80/180 | 70/160 | 70/160 | 70/160 | 80/180 | 65/150 |
| Urea/Ammonium Nitrate/Water | 35:44:20 | 65/150 | 65/150 | | | 65/150 | 65/150 | 65/150 | | 65/150 |
| Urea Formaldehyde Resin | All | 40/100 | 50/120 | | | 50/120 | 40/100 | 50/120 | | 40/100 |
| Urine, see Urea | | | | | | | | | | |
| Urotropine, see Hexamethylenetetramine | | | | | | | | | | |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|--|---------------------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Vanillin Black Liquor <18> | | 50/120 | 50/120 | | | | | | | |
| Vinegar <18> | 100 | 100/210 | 100/210 | | | 100/210 | 100/210 | 100/210 | | 65/150 |
| Vinyl Acetate | 20 | 40/100 | 40/100 | | | 40/100 | 40/100 | 40/100 | | NR |
| Vinyl Acetate | 100 | NR | NR | | | LS | NR | NR | | NR |
| Vinyl Chloride | 100 | NR | NR | | | LS | NR | NR | | NR |
| Vinyl Chloride (no condensation, no coalescence) | Fumes | | | | | 80/180 | 80/180 | 80/180 | | |
| Vinyl Toluene | 100 | 25/80 | 50/120 | 25/80 | 25/80 | 50/120 | 25/80 | 50/120 | 25/80 | NR |
| Water, deionized <2,6,22> | 100 | 80/180 | 80/180 | 95/200 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Water, distilled <2,6,22> | 100 | 80/180 | 80/180 | 95/200 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Water/Phenol, see Phenol | | | | | | | | | | |
| Water, sea, desalination | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Water, steam condensate <2> | 100 | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Water, tap, hard <2,22> | 100 | 100/210 | 100/210 | 105/220 | 105/220 | 100/210 | 100/210 | 100/210 | 105/220 | 80/180 |
| Water, tap, soft <2,22> | 100 | 80/180 | 80/180 | 95/200 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 | 80/180 |
| Water/Urea/Ammonium Nitrate (fertilizer) | Up to 40:up to 30:balance | 50/120 | | | | | 50/120 | | - | |
| Water Vapor (no condensation, no coalescence), see Flue Gas, dry | | | | | | | | | | |
| Water Vapor, wet <2> | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Whey | All | 65/150 | 65/150 | | | | | | | |
| White Liquor (pulp mill) <1,2> | All | 80/180 | 80/180 | 65/150 | 80/180 | 40/100 | 80/180 | 80/180 | 80/180 | 80/180 |
| White Spirit, see Mineral Spirit | | | | | | | | | | |
| Xylene | 100 | 25/80 | 40/100 | 50/120 | 40/100 | 50/120 | 25/80 | 50/120 | | NR |
| Xylene/Amyl Acetate | 70:30 | | | 50/120 | | | | | | |
| Xylene (no condensation, no coalescence) | Fumes | | 65/150 | | | 80/180 | 80/180 | 80/180 | | |
| Xylene/Methyl Ethyl Ketone/Butyl Acetate/Methyl Acetate | 50:20:20:10 | NR | NR | | | LS | NR | NR | | NR |
| Zinc Chloride <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | | 100/210 | 100/210 | 80/180 |

CHEMICAL RESISTANCE TABLE (continued)

Maximum service temperatures for Derakane™, Derakane™ Momentum™ and Derakane™ Signia™ resins

| chemical environment | concentration | Derakane™, Derakane™ Momentum™ or Derakane™ Signia™ resin | | | | | | | | |
|---|---------------|---|---------|---------|---------|--------------|----------|---------|---------|--------|
| | | 411 | 441 | 451 | 455 | 470 | 510A/B/C | 510N | 515 | 8084 |
| | % | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F | °C/°F |
| Zinc Cyanide Plating Solution (9% Zinc Cyanide, 4% Sodium Cyanide, 9% Sodium Hydroxide) <1,2> | | 80/180 | 80/180 | | | 40/100 | 80/180 | 80/180 | | 80/180 |
| Zinc Electrolyte (Zinc Sulfate, 35g/l Sulfuric Acid), see Sulfuric Acid | | | | | | | | | | |
| Zinc Fluoborate Plating Bath, 49% Zinc Fluoborate; 5% Ammonium Chloride, 6% Ammonium Fluoborate <1> | | 95/200 | 95/200 | 70/160 | | 95/200 | 95/200 | 95/200 | | 80/180 |
| Zinc Fluoborate <1> | 50 | 100/210 | | 100/210 | 100/210 | | 100/210 | | 100/210 | |
| Zinc Nitrate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | 100/210 | 80/180 |
| Zinc Phosphate, slurry | All | 80/180 | 80/180 | | | 80/180 | 80/180 | 80/180 | | 80/180 |
| Zinc Sulfate <21> | All | 100/210 | 100/210 | 100/210 | 100/210 | 100/210 <24> | 100/210 | 100/210 | | 80/180 |
| Zinc Sulfite | All | 80/180 | | 80/180 | 80/180 | | 80/180 | | 80/180 | |

GLOBAL PRESENCE

Global Headquarters INEOS Composites

North America

Dublin, OH USA
Tel: +1 614 790 9299
Americascustomer.composites@INEOS.com

Regional Centers

Asia Pacific

Shanghai, P.R. China
Tel: +86 21 2402 4688
ASIACustomer.composites@INEOS.com

Europe

Barcelona, Spain
Tel: +34 93 206 5120
EMEAcustomer.composites@INEOS.com

India

Navi Mumbai
Tel: +91 22 6148 9696
EMEAcustomer.composites@INEOS.com

Latin America

Araçariquama, São Paulo, Brazil
Tel: +55 11 4136 6477
Americascustomer.composites@INEOS.com

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