

		<b>Flowchem VE</b> <b>Corrosion Resistance Guide</b>
Chemical Environment		Recommended Temperature Limit °C
<b>WATER</b>		<b>100</b>
<b>ACIDS</b>	<b>INORGANIC</b>	<b>100</b>
	<b>ORGANIC</b>	<b>100</b>
	<b>OXIDISING</b>	<b>65</b>
<b>ALKALINE</b>	<b>INORGANIC</b>	<b>70</b>
	<b>ORGANIC</b>	<b>50</b>
<b>SALTS</b>	<b>INORGANIC</b>	<b>100</b>
	<b>ORGANIC</b>	<b>50</b>
<b>SOLVENTS</b>	<b>ALKYL, &gt;C6</b>	<b>80</b>
	<b>AROMATIC</b>	<b>25</b>
	<b>ALCOHOLS</b>	<b>65</b>
	<b>AMINES</b>	<b>25</b>
	<b>HALOGENS</b>	<b>25</b>
	<b>KETONES</b>	<b>NR</b>

**NOTES:**

1. General overview, exceptions within each group are possible. However increasing the molecular weight of chemicals will generally increase the service temperature.
2. This information is just a global grouping. Service temperature within one family can vary between different chemicals.
3. All temperatures are given for aqueous solutions. In case of concentrated mixtures service temperatures are generally lower.
4. Discoloration/ staining is not classified as chemical attack if hardness is unchanged.
5. Higher temperatures will reduce the chemical resistance shown in the performance table.
6. Some chemicals may concentrate due to evaporation and become more aggressive.
7. Mixtures of chemicals can be more aggressive than might be expected from the individual components alone.

**Note:**

The data contained herein is based on laboratory tests performed under carefully controlled conditions. No warranty can be expressed or implied regarding the accuracy of this information, as it will apply to actual operational use. Plant operations vary widely, and the individual results obtained are affected by the specific conditions encountered, which are beyond our control.

**Important:**

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*Any suggested practices or installation specifications for the composite floor or wall system (as opposed to individual product performance specifications) included in this communication (or any other) from Flowcrete UK Ltd constitute potential options only and do not constitute nor replace professional advice in such regard. Flowcrete UK Ltd recommends any customer seek independent advice from a qualified consultant prior to reaching any decision on design, installation or otherwise.*

Chemical Environment	Concentration %	Recommended Temperature Limit °C
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**A**

Acetaldehyde	100	
Acetic Acid	10	
Acetic Acid	25	100
Acetic Acid	50	80
Acetic Acid	75	65
Acetic Acid	85	
Acetic Acid, Glacial	100	40
Acetic Anhydride	All	
Acetic Anhydride	100	40
Acetone	10	80
Acetone	100	NR
Acetonitrile	All	
Acetyl Chloride	All	
Acid Cleaner - 31% hydrochloric acid		90
Acrylamide (*7)	50	40
Acrylic Acid (*7)	All	
Acrylic Acid (*7)	25	40
Acrylic Latex		50 *6
Acrylonitrile (*7) Latex dispersior	2	30
Acrylonitrile	100	
Activated Carbon Beds, Water Treatment		100
Adipic Acid (1.5 g sol. in water at 25°C, sol. hot water)	25	80
Adiponitrile		
Agricultural Chemicals, Spray Operation (*6)		50
Air One Sided (Uninsulated) Air Temp		230 *6
Immersion		180 *6
ALAMINE amines		80
Alcohol, Amyl	All	100
Alcohol, Butyl	All	50
Alcohol, Ethyl	95	40
Alcohol, Isodecyl	All	50 *7
Alkaline Cleaner - see Sodium & Potassium Hydroxides		
Alkaline Solutions - see Sodium, Potassium, Ammonium Hydroxides, and Carbonate		
Alkyl Amino Polyglycoether		
Alkyl Benzene Sulfonic Acid	92	80
Alkyl Benzene Ammonium Salt		
Alkyl Naphtaol Polyglycoether		
Alkyl Sulfonate		
Alkylarryl Ammonium Salt		
Alkylaryl Sulphonic Acid		
Alkylolalkoxylate		
Alkylol Ether Phosphate		
Alkylol Sulphates & Salts		
Alkylol Ether Sulphate		
Alkyl Phenol Glycoether		
Allyl Alcohol (*11)	100	30
Allyl Chloride	All	30
Allyl Toly Trimethyl Ammonium Chloride		50
Alpha Methyl Styrene	100	50
Alpha Oleum Sulphates	100	50
Alum	All	120
Alumina Hydrate (*6)		

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Aluminium Chloride	All	120
Aluminium Chlorohydrate	All	100
Aluminium Chlorohydroxide	50	100
Aluminium Citrate	All	
Aluminium Fluoride (*1, *7)	All	30
Aluminium Hydroxide	All	
Aluminium Hydroxide	100	95
Aluminium Nitrate	10	80
Aluminium Nitrate	100	80
Aluminium Potassium Sulphate	All	120
Aluminium Sulphate	All	120
Aluminium Sulphate / Acetic Acid		
AMBITROL (**) Ethylene Glycol		100
Amino Acids	All	40
Amino Sulphonic Acids		
Ammonia	Liquefied Gas	NR
Ammonia (*6)	Gas	40 *7
Ammonia, Aqueous - See Ammonium Hydroxide		
Ammonium Acetate	65	30
Ammonium Benzoate	All	
Ammonium Bicarbonate	10	70
Ammonium Bicarbonate	50	70
Ammonium Bicarbonate	Sat'd	
Ammonium Bifluoride	100	65
Ammonium Bisulphite black liquor		80
Ammonium Bisulphite cooking liquor		65
Ammonium Bromate	43	70
Ammonium Bromide	43	70
Ammonium Carbonate	All	65
Ammonium Chloride	All	100
Ammonium Citrate	All	65
Ammonium Fluoride (*1)	All	65
Ammonium Fluoride	10	
Ammonium Fluoride	20	
Ammonium Hydroxide (*1)	5	80 *6
Ammonium Hydroxide (*1)	10	65 *6
Ammonium Hydroxide (*1)	20	65 *6
Ammonium Hydroxide (*1)	29	40 *6
Ammonium Lauryl Sulphate	30	50
Ammonium Ligno Sulphonate	50	80
Ammonium Molybdate	All	
Ammonium Nitrate	All	120
Ammonium Oxalate	All	
Ammonium Pentaborate	12	
Ammonium Persulphate	All	80
Ammonium Phosphate, dibasic	All	100
Ammonium Phosphate, monobasic	All	100
Ammonium Polysulphide	Sat'd	65
Ammonium Sulphate	All	120
Ammonium Sulphate	Sat'd	
Ammonium Sulphide (Bisulphide)	Sat'd	50
Ammonium Sulphite	Sat'd	65
Ammonium Thiocyanate	20	100
Ammonium Thiocyanate	50	40 *7

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Ammonium Thioglycolate	7½	
Ammonium Thiosulphate	All	
Ammonium Thiosulphate	60	40
Amyl Acetate	All	50 *7
Amyl Alcohol	All	100
Amyl Alcohol, Vapour		100
Amyl Chloride		
Amyl Chloride	100	50 *7
Aniline	100	20
Aniline Hydrochloride	All	80
Aniline Sulphate	All	100
Anodize (15% Sulphuric)		100
Antimony Pentachloride	All	
Antimony Trichloride	100	
Aqua Regia	All	- *6
Arcton 11 Fluocarbor		
ARMEEN H.T. Amines		- *6
Arsenic Acid	All	40
Arsenic Acid	80	
Arsenious Acid	20°Be	80
<b>B</b>		
Barium Acetate	All	80
Barium Acetate	Sat'd	
Barium Bromide	All	100
Barium Carbonate	All	120
Barium Chloride	All	100
Barium Cyanide	All	65
Barium Hydroxide	All	65
Barium Hydroxide	Sat'd	
Barium Sulphate	All	120
Barium Sulphate	Sat'd	
Barium Sulphide	All	80
Barley Solution		
Beer		
Beet Sugar Liquor		
Benzaldehyde	100	20
Benzalkonium Chloride	Dilute	
Benzene	100	40
Benzene, Ethyl Benzene (*11)	1/3:2/3	40
Benzene, Hydrochloric Acid (Wet) (*11)		40
Benzene, Vapour (*11)		50
Benzene Sulphonic Acid	All	
Benzene Sulphonic Acid	50	65
Benzoic Acid	Sat'd	100
Benzoquinones	All	
o-benzoyl Benzoic Acid	All	100
Benzyl Alcohol	All	40
Benzyl Chloride	All	
Benzyl Chloride (*11)	100	30
Benzyltrimethylammonium Chloride	60	40
Bisulphite in Scrubber	Gases	180
Black Liquor (Pulp Mill)	All	80

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Black Liquor (Pulp Mill) Thick	All	105
Black Liquor (Kraft)	Thin	80
Black Liquor (Kraft)	Thick	105
Black Liquor Recovery, (*6) furnace gases		205 *7
<b>Bleach Solutions</b>		
Calcium Hypochlorite (*1, *2, *3)	All	80
Calcium Hypochlorite	20	
Chlorine Dioxide, Wet (*1, *2, *3)	Sat'd	90
Chlorine Water (*1, *2, *3)	Sat'd	100
Chlorite		
Hydrosulphite		
Lithium Hypochlorite	All	80
Lithium Hypochlorite		
Peroxides Dilute		100
Sodium Hypochlorite (*1, *2, *3, *6)	5¼	80
	15	
	18	80
TEXTONE Liquid		100
Blood Sugar	All	120
Blow Down (Non-Condensable Gases) (*8)		120
Borax	100	100
Borax	Sat'd	
Boric Acid	All	100
Boric Acid	Sat'd	
Boric Acid	40% Sat'd	
Brake Fluid HD 557		50 *7
Brass PLating Solution		80
3% Copper: 1% Zinc and 5.6% Sodium Cyanides		
3% Sodium Carbonate (*1)		
Brine	All	100
Brine Chlorinated (*6)	Sat'd	
Brine (Salt)	Sat'd	120
Brominated Phosphate Ester	All	50
Bromine, Dry Gas		40
Bromine, Liquid	100	NR
Bromine, Wet Gas	100	40
Bromine water	5	
Brown Stock		80
Bunker C Fuel Oil	100	105
Butanol (See Butyl Alcohol)		
2-Butoxyethanol	100	40
2,2-Butoxyetoxyethanol	100	40
Butyl Acetate	All	
Butyl Acetate	100	30
Butyl Acrylate (*11)	100	30
Butyl Alcohol	All	50 *7
Butyl Amine-n	35	
Butyl Amine-n	50	
Butyl Amine	All	
Butyl Benzoate	70	40
Butyl Benzyl Phthalate	100	100
Butyl CARBITOL diethylene glycol	100	40
Butyl CELLOSOLVE Solvent	100	40
Butyl Hypochlorite	98	NR

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Butyl Stearate (5% in Mineral Spirits)	100	40 *6
Butylene Glycol	100	80
Butylene Oxide	100	NR
Butyraldehyde	100	40
Butyric Acid	25	100
Butyric Acid	50	100
Butyric Acid	85	
Butyric Acid	100	50
<b>C</b>		
Cadmium Chloride	All	80
Cadmium Cyanide Plating Bath, (3% Cadmium Oxide;10% Sodium Cyanide; 1.2% Sodium Hydroxide)		80
Calcium Bisulphite	All	80
Calcium Bromide	All	100
Calcium Carbonate	All	
Calcium Chlorate	All	120
Calcium Chloride	All	120
Calcium Chloride	Sat'd	
Calcium Hydroxide (*1)	15	65 *6
Calcium Hydroxide (*1)	25	80 *6
Calcium Hydroxide (*1)	100	100
Calcium Hydroxide	Sat'd	
Calcium Hypochloride		
Calcium Hypochlorite	10	
Calcium Hypochlorite	20	
Calcium Hypochlorite (*1, *2, *3, *5)	All	80 *6
Calcium Nitrate	All	100
Calcium Sulphate	All	120
Calcium Sulphite		80
CALGON (Product E) sodium hexametaphosphate		
Cane Sugar Liquor & Sweetwater	All	80
Capric Acid	All	50
Caproic Acid	100	50
Caprylic Acid (See Octanoic Acid)	All	100
Caramel		
Carbolic Acid	10	
Carbon Dioxide Gas		180
Carbon Disulphide	100	NR
Carbon Disulphide	Fumes	65
Carbon Monoxide Gas (*6)		205 *7
Carbon Tetrachloride	100	80
Carbon Tetrachloride, vapor		95
Carbinic Acid	Sat'd	
CARBOWAX Polyethylene Glyco	100	80
Carboxy Ethyl Cellulose	10	65
CASCADE Detergent in Solutior		80
Cashew Nut Oil	100	65 *7
Castor Oil	100	70 *7
Caustic (see Sodium Hydroxide)		
Cereclor 42, S-52	100	
Chlorinated Pulp		95

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Chlorinated Solvent Recovery (see specific solvents)		
Chlorinated Wax	All	80
Chlorination Washer, Hoods & Vent Systems		95
Chlorine - Hydrochloric Acid, Wet	8-10	180
Chlorine Dioxide	All	93
Chlorine Dioxide, Wet (*1, *2, *3)	Sat'd	93
Chlorine Dioxide Generator Effluent, R2 System		80
Chlorine Water (*1, *2, *3)	Sat'd	100
Chlorine Liquid	100	NR
Chlorine, dry gas (*8)	100	120
Chlorine, wet gas (*8)	100	120
N-Chloro O TolyI (insecticide emulsion)	10	50
Chloroacetic Acid (*6)	25	50
Chloroacetic Acid (*6)	50	40
Chloroacetic Acid (*6)	80	NR
Chloroacetic Acid - Concentrated	-	NR
Chlorobenzene	100	40
Chlorocholinchloride	75	
Chloroform	100	NR
Chloroparaffin	100	
Chloro Propionic Acid	All	
2-Chloro Propionic Acid	50	
Chloropyridine (tetra)	100	50
Chlorosulphonic Acid	10	NR
CHLOROTHENE(**) NU 1,1,1 Trichloroethane	100	50 *7
Chlorotoluene	100	40
Chrome Bath, 19% Chromic Acid with Sodium Fluorosilicate and Sulphate (*1)		65
Chromic Acid (*10)	5	65
Chromic Acid (*10)	10	65
Chromic Acid (*10)	20	65
Chromic Acid	30	NR
Chromic Acid	40	
Chromic Acid	50	
Chromic Acid: Sulphuric Acid Mix (max.total conc. 10%)	10	65
Chromium Plate		55
Chromium Sulphate	All	80
Chromium Sulphate	Sat'd	80
Chromous Sulphate	Sat'd	-
Cinnamaldehyde	100	
Citric Acid	All	100
Cobalt Chloride	All	80
Cobalt Citrate	12	80
Cobalt Nitrate	15	50 *7
Coconut Fatty Acid	100	
Coconut Oil	All	95
Coconut Oil	100	95
Cod-liver Oil	100	
CONTINUE ETCH Solvent		40
Copper Acetate	All	
Copper Acetate	Sat'd	80
Copper Ammonium Chloride	All	
Copper Chloride	All	120

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Copper Cyanide	All	100
Copper Cyanide Plating Bath (10.5% Copper & 14% Sodium Cyanides; 6% Rochelle Salts)		70
Copper Cyanide, Potassium Cyanide Potassium Hydroxide (*1)	7:2:5:2%	80
Copper Matte Dipping Bath, 30% FeCl3 19%; Hydrochloric		95
Copper Nitrate	All	100
Copper Plating Solution ( 45% Cu(BF4)2 19% Copper Sulphate; 8% Sulphonic )(1*)		80
Copper Sulphate	All	120
Corn Oil	100	100
Corn Steep Liquor - concentrated	100	
Corn Starch - Slurry	All	100
Corn Sugar	All	100 *7
Corn Syrup - concentrated	100	
Cottonseed Oil		100
Cresol		
Cresylic Acid	All	
Crude Oil, Sour	100	120
Crude Oil, Sweet	100	120
Crude Oil, Salt Water	100	
Cumene		50
Cyanide Disposal (Hypo)		40
Cyclohexane	100	65 *7
Cyclohexanol	100	
Cyclohexanone	100	
Cyclohexylamine		
<b>D</b>		
DMA 4 Weed Killer 2,4-D (Dimethylamine)		65
DMA 6 Weed Killer		50 *7
DALAPON grass killer		30
Decalin (Tetrahydronaphtalene)	100	
Decanoic Acid	All	40
Decanol	100	80
Deionized Water	100	80
Demineralized Water	100	80
Detergents, Organic pH 9 - 12	All	95
Detergents, Organic pH 12	100	80
Detergents, Sulphonated (*6)	All	80
Diallyl phthalate	All	100
Di-ammonium Phosphate	65	100
Dibromo Phenol		40
Dibromo Propane	100	40
Dibromo Propanol	100	40 *7
Dibutyl Carbitol	100	40
Dibutyl Ether	100	100
Dibutyl Sebacate	All	65
Dibutylphthalate	100	
Dibutylphthalate	All	100
Dichloroacetic Acid	80	
Dichlorobenzene	100	50



Chemical Environment	Concentration %	Recommended Temperature Limit °C
Dichloroethane (*11)	100	30
Dichloroethylene	100	NR
Dichloromethane (Methylene Chloride)	100	NR
2, 4-Dichlorophenoxyacetic Acid (Acid, Salts, Esters and Formulations) (*4)		50
Dichloropropane	100	40
Dichloropropene (*11)	100	30
Dichloropropionic Acid	100	30
Dichlorotoluene	100	50
Diesel Fuel	100	100
Diethanol Amine	100	50 *7
Di 2-ethyl hexyl H <sub>3</sub> PO <sub>4</sub> (in Kerosene)	20	100
Diethyl Amine	All	NR
Diethyl Aniline		
Diethyl Benzene	100	65
Diethyl Carbonate	100	40
Diethyl Ether	100	NR
Diethyl Formamide	-	NR
Diethyl Ketone	100	30
Diethyl Maleate	All	
Diethyl Phthalate	100	
Diethyl Sulphate	100	50
Diethylene Glycol	100	100
Diethylene Glycol Dimethyl Ether		
Diethylene Triamine		
DOWANOL(**) DB Diethylene Glycol n-butyl ether (See also Butyl CARBITOL)	100	40
Diethylhexyl Phosphoric acid (in kerosene)	20	80
Diisobutyl Ketone		50
Diisobutyl Phthalate	100	65
Diisobutylene	100	40
Diisopropanol Amine	100	65
Diisopropyl Amine		
Dimethyl Acetamide		
Dimethyl Aniline		
Dimethyl Formamide	100	NR
Dimethyl Morpholine	100	50
Dimethyl Phthalate	100	80
Dimethyl Sulphide	100	30
Dimethyl Sulphate	100	
Dimethyl Sulphoxide	100	45
Dimethyl Sulphoxide - Water Solution	20	20
2,2-Dimethyl Thiazolidine	1	80
Di-n-Butyl Amine	50	
Di-n-Propylamine	50	
Dinonylphthalate	100	
Diocetyl Phthalate	100	100
Diocetyl Sulfosuccinate	All	
Dioxane	All	NR
Diphenyl Ether	100	50 *6
Diphenyl Oxide (Diphenyl Ether, Phenyl Ether)	100	50 *7
Dipiperazine Sulphate Solution	All	40
Dipotassium Phosphate	50	40
Dipropylene Glycol	100	100

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Distilled Water	100	80
Divinyl Benzene	100	50 *7
Dodecanol (Lauryl Alcohol)	100	80
Dodecene	100	80
Dodecyl Alcohol	100	80
Dodecyl Benzene Sulphonic Acid: Sulphuric Acid: Water: Oil	85:10:4:1	65
Dodecyl Benzene Sulphonic Acid	100	50
Dodecyl Benzene Sulphonic Acid	All	93
Dodecyl Guanidine Hydrochloride	All	
DOWANOL DB Glycol Ether (*11)	100	40
DOWANOL EB Glycol Ether (Ethylene Glycol n-butyl ether)	100	40
DOWANOL PM Glycol Ether	100	20
DOWCLENE(**) Solvent	100	50
DOWCLENE EC Solvent	100	50
DOWEX(**) 50WX4 Ion Exchange Resin		100
DOWFAX(**) 2AO Solution Surfactant	40% Solution	50
DOWFAX 2A1 Surfactant	45% Solution	50
DOWICIDE(**) Antimicrobial		50
DOWTHERM(**) Heat Transfer Agent	100	65

## E

ELECTROSOL Anti-static Agent	5	65
Embalming Fluid	100	60 *6
ENDURA-ETCH Solution	100	30
Epichlorohydrin	100	30
Epoxidized Castor Oil	100	
Epoxidized Soybean Oil	100	65
Epoxidized Vegetable Oil	100	65
Epoxy Resin - Epikote(**) 828	100	-
ESTERON 245 Herbicide	100	65
ESTERON Herbicide	100	65
Esters, Fatty Acid	100	80
Ethanol (Ethyl Alcohol)	100	40
Ethanol (Ethyl Alcohol)	50	65
Ethanol (Ethyl Alcohol)	10	65
Ethanol Amine - mono (*11)	100	30
Ethyl Acetate (*11)		20
Ethyl Acrylate	100	NR *6
Ethyl Alcohol (See Ethanol)		
Ethyl Alcohol	10	
Ethyl Amine	35	
Ethyl Aniline		
Ethyl Benzene	100	50
Ethyl Benzene: Benzene	2/3:1/3	40
Ethyl Bromide	100	NR
Ethyl Chloride	100	30
Ethyl Chlorohydrin		
Ethyl Ether	100	NR
Ethyl Sulphate	100	40
Ethylene Chloroformate	100	
Ethylene Chloride	100	

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Ethylene Chlorohydrin	100	40
Ethylene Diamine		
Ethylene Diaminetra Acetic Acid	100	
Ethylene Dibromide	100	NR
Ethylene Dichloride (See Dichloroethane)	100	30
Ethylene Glycol	All	100
Ethylene Glycol Monobutyl Ether	100	40
Ethylenediamine Tetraacetic Acid (EDTA) (see VERSENE(**) 100)		40
Ethylene Oxide	100	NR
Ethylhexanol	100	
Eucalyptus Oil	100	60
2-Ethyl Hexyl Acrylate		
<b>F</b>		
Fatty Acids	All	120
Fatty Acids Esters	100	
Ferric Acetate	Sat'd	80
Ferric Chloride	All	100
Ferric Chloride: Ferrous Chloride	05:20	110
Ferric Chloride: 48 Ferrous Chloride: 0.2 / Hydrochloric Acid: 0.1		110
Ferric Chloride: Hydrochloric Acid	29:18.5	110
Ferric Nitrate	All	100
Ferric Sulphate	All	100
Ferrous Chloride	All	100
Ferrous Chloride: Ferric Chloride	20:05	110
Ferrous Nitrate	All	100
Ferrous Sulphate	All	100
Fertilizer, URAN Urea Ammonium Nitrate composition: 43.3% Ammonium nitrate, 35.4% Urea, 20.3% Water		65
8-8-8 Fertilizer composition: (Parts by wt. - 30 Phosphoric Acid, 28 Ammonia, 104.3 Water, 10.4 Uran, 26.0 Potash, 3.0 Borax pH 8.2)	-	65
Fixative Bath Photo	100	
Flour		
Flue Gas (*6)		205 *7
Flue Gas, Wet	All	100
Fluoboric Acid (*1)	All	100
Fluoboric Acid	Sat'd	100
Fluoboric Acid	25	100
Fluoboric Acid	15	100
Fluoboric Acid	10	100
Fluoride Salts : Hydrochloric Acid (*1)	30:10	50
Fluorine Gas (*1)		30
Fluorocarbon 11	100	
Fluosilicic Acid (*1)	All	
Fluosilicic Acid (*1)	10	80
Fluosilicic Acid (*1)	25	40
Fluosilicic Acid (*1)	35	40
Fluosilicic Acid Fumes (*1)		80
Fly Ash Slurry		65

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Formaldehyde	20	
Formaldehyde	37	
Formaldehyde	50	
Formaldehyde (*5)	All	65
Formamide	100	25
Formic Acid	10	80
Formic Acid	30	
Formic Acid	50	50
Formic Acid	85	
Formic Acid	100	40
FOSTERGE Products		40
FREON 11 Solvent		40
FREON (non polar)	100	
FREON Products (Call for Recommendation)		
Fuel C / Methyl t-Butyl Ether	85:15	27
Fuel is 50% Toluene & 50% Iso-Octane		
Fuel Oil	100	100
Furfural	100	NR
Furfural	20	-
Furfural	5	-
Furfural Alcohol (*11)	100	30
<b>G</b>		
GALECRON 4EC Insecticide	100	50
Gallic Acid	Sat'd	40
Gasoline, (w/ Benzene)		
Gasoline, Leaded	100	80
Gasohol (20% Methanol)	100	50
Gasohol (up to 10% Alcohol)		50
Gasohol (up to 20% Alcohol)		40
Gasoline, Aviation	100	80
Gasoline, Leaded		80
Gasoline, No Lead, No Methanol	100	65
Gluconic Acid	50	80
Glucose	100	120
Glutaraldehyde	50	50 *7
Gluteric Acid	50	50
Glycerine	100	100
Glycerine Triacetate	100	
Glycol	All	100
Glycolic Acid (Hydroxy acetic)	70	40
Glycolic Acid	35	60
Glyme		
Glyoxal	40	40
Gold Plating Solution (23% Potassium Ferrocyanide with Potassium Gold Cyanide and Sodium Cyanide)		40
Green Liquor ( pulp mill )		
Gypsum slurry; phosphoric acid; fluorine water		
<b>H</b>		
Heavy Aromatic Naphta (HAN)		

Chemical Environment	Concentration %	Recommended Temperature Limit °C
n-Heptane	100	100
Herbicides (*6)		50
Hexachlorocyclopentadiene	100	
Hexachloroethane (*11)	100	50
Hexamethylenetetramine	65	- *6
Hexamethylenetetramine	40	50
Hexane	100	70
Hexanediol	100	
Hexyleneglycol	100	
Hydraulic Fluid	100	80
Hydrazine	25	
Hydrazine	50	
Hydrazine	100	NR
Hydriodic Acid	40	65
Hydrobromic Acid	10	
Hydrobromic Acid	18	80
Hydrobromic Acid	25	80
Hydrobromic Acid	48	65
Hydrobromic Acid	62	40
Hydrocarbons (*6)		
Hydrochloric Acid (*9, *12)	10	110
Hydrochloric Acid (*9, *12)	15	110
Hydrochloric Acid (*9, *12)	18	110
Hydrochloric Acid (*9, *12)	25	-
Hydrochloric Acid (*9, *12)	37	80
Hydrochloric Acid & Organics (*6, *8)		65
Hydrochloric/ Sulphuric/ Acetic Acid	37/2/5	-
Hydrochloric Acid + Free Chlorine (*9)	All	110
Hydrochloric Acid, Fumes + Free Chlorine (*8)		180
Hydrochloric Acid Fumes (*9)		180
Hydrocyanic Acid	All	100
Hydrocyanic Acid	Sat'd	
Hydrofluoric Acid (*1)	1	-
Hydrofluoric Acid (*1)	10	65
Hydrofluoric Acid (*1)	20	40
Hydrofluosilic Acid (*1)	10	80
Hydrofluosilic Acid (*1)	25	40
Hydrofluosilic Acid (*1)	35	40
Hydrogen Bromide, wet gas	10	
Hydrogen Bromide, wet gas	47	
Hydrogen Bromide, wet gas	100	80
Hydrogen Chloride, dry gas	10	
Hydrogen Chloride, dry gas	35	
Hydrogen Chloride, dry gas (*6)	100	180
Hydrogen Chloride, wet gas (*6)	10	
Hydrogen Chloride, wet gas (*6)	47	
Hydrogen Chloride, wet gas (*6)	100	180
Hydrogen Fluoride, gas (*1)	10	
Hydrogen Fluoride, gas (*1)	47	
Hydrogen Fluoride, gas (*1)	100	80
Hydrogen Fluoride, vapour (*1)		80
Hydrogen Peroxide	5	
Hydrogen Peroxide	30	65 *6
Hydrogen Sulphide	5	180

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Hydrogen Sulphide	100	100
Hydrosulphite Bleach - aqueous solution containing 5% zinc hydrosulphite and 2.5% tripolyphosphate (*5)		80
Hydroxy Acetic Acid (Glycolic Acid)	70	40 *7
Hydroxy Ammonium Sulphate	10	
Hydroxy Benzene Sulphonic Acid	All	
Hypochlorous Acid (*6)		*1
Hypophosphorous Acid	50	50
<b>I</b>		
Incinerator Gases (*6)		180
Insecticides (*6)		50
Iodine, Crystals	100	65
Iodine, Vapour	100	80
Iron Plating Solution 45% FeCl <sub>2</sub> ; 15% CaCl <sub>2</sub> ; 20% FeSO <sub>4</sub> ; 11% (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	100	120
Iron and Steel Cleaning Bath 9% Hydrochloric; 23% Sulphuric		100
Isoamyl Alcohol	100	50
Isobutyl Alcohol	All	50
Isodecanol	100	50 *7
Isodecyl Alcohol	100	
Isononyl Alcohol	100	65
Isooctyl Adipate	100	65
Isooctyl Alcohol	100	65
Isopropyl Alcohol	All	50
Isopropyl Amine	100	50 *7
Isopropyl Myristate	100	110
Isopropyl Palmitate	100	110
Isopropyl Sulphate	All	
Itaconic Acid	25	50
Itaconic Acid	40	
<b>J</b>		
Jet Fuel	100	80

Chemical Environment	Concentration %	Recommended Temperature Limit °C
<b>K</b>		
Kerosene	100	80
Kerosene, Diethylhexyl Phosphoric Acid (DEPHA), Trioctyl Phosphine, Oxide (TOPO)		80
Kraft Recovery Boiler Breaching		180
<b>L</b>		
Lactic Acid	10	
Lactic Acid	80	
Lactic Acid	All	100
Lactic Acid aq. Alkaline		
LASSO Herbicide		50
Latex PVA emulsions	All	50 *7
Latex Paint emulsions	All	50 *7
Latex Rubber emulsions	All	50 *7
Lauric Acid	All	100
Lauroyl Alcohol	100	80
Lauroyl Chloride	100	50 *7
Lauryl Alcohol	100	
Lauryl Chloride	100	100
Lauryl Chloride, Crude, Acidic	100	100
Lauryl Ether Sulphate	100	
Lauryl Mercaptan	All	65
Lead Acetate	All	110
Lead Acetate	Sat'd	
Lead Chloride	Sat'd	
Lead Nitrate	All	
Lead Nitrate	Sat'd	
Levulinic Acid	100	110
Levulinic Acid	Sat'd	
Lignin Sulfonic Acid Sodium Sal	100	
Lignin Sulphate ph 3-7	All	
Linoleic Acid	100	
Linolenic Acid	100	
Linseed Oil	100	110
Liquid Sugar	100	
Lithium Bromide	All	
Lithium Bromide	Sat'd	120
Lithium Carbonate (*1)	All	
Lithium Carbonate (*1)	Sat'd	80
Lithium Chloride	All	
Lithium Chloride	Sat'd	100
Lithium Hydroxide (*1)	All	
Lithium Hydroxide (*1)	Sat'd	65 *6
Lithium Hypochlorite (*1, *2, *3)	All	80 *6
Lithium Sulphate	All	

Chemical Environment	Concentration %	Recommended Temperature Limit °C
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## M

Magnesium Bicarbonate	Sat'd	
Magnesium Bisulphite	All	80
Magnesium Bisulphite	Sat'd	
Magnesium Carbonate	15	
Magnesium Carbonate	All	80
Magnesium Carbonate	Sat'd	
Magnesium Chloride	All	120
Magnesium Chloride	Sat'd	
Magnesium Fluosilicate (*1)	All	100
Magnesium Hydroxide	100	100
Magnesium Hydroxide	Sat'd	
Magnesium Nitrate	All	100
Magnesium Silica Fluoride	37.5	
Magnesium Sulphate	All	120
Magnesium Sulphate	Sat'd	
MAGNIFLOC 500 Series Products		60
MAGNIFLOC 837A Products		65
Maleic Acid	100	120
Manganese Chloride (Magnanous Chloride)	All	100
Manganese Sulphate (Magnanous Sulphate)	All	100
Manganese Sulphate (H <sub>2</sub> SO <sub>4</sub> )	90/10	
Maple Syrup	All	
Melamine Formaldehyde Resin		50
2- Mercaptoacetic Acid	10	
Mercaptoacetic Acid	All	40
Mercuric Chloride	All	
Mercuric Chloride	100	100
Mercuric Chloride	Sat'd	
Mercurous Chloride	All	100
Mercurous Chloride	Sat'd	
Mercury	100	120
Methacrylic Acid	40	
Methoxy Ethyl Acetate		
Methyl Acrylate		
Methyl Alcohol (Methanol)	5	50
Methyl Alcohol (Methanol)	100	40
Methyl Amine	100	NR
Methyl Aniline		
Methyl Bromide (Gas)	10	30
Methyl Cellosolve		
Methyl Chloro Phenoxy Acetic Acid (MCPA)	100	
Methyl Chloro Phenoxy Propionic Acid (MCPA)	100	
Methyl Diethanol Amine		
Methyl Ethyl Ketone (*6, *11)	100	20
Methyl Isobutyl Ketone	100	NR
Methyl Methacrylate (MMA)	All	
Methyl-2-Pentenediol-2,4(Hexyleneglycol)	100	
2-Methyl Pentenediol, 2-Ethyl Hexanol	100	
Methyl Styrene (Alpha)	100	50
Methylene Blue Salts	All	
Methylene Bromide		
Methylene Chloride	100	NR



Chemical Environment	Concentration %	Recommended Temperature Limit °C
Methylene Chloride: Methanol: Water 1:4:95		40 *7
Milk	All	
Mineral Oils	100	120
Myristic Acid	100	
Molasses & Invert Molasses	-	45
Molybdic Acid	25	
Monochloroacetic Acid (*6)	80	NR
Monochloroacetic Acid (*6)	100	NR
Monochlorobenzene	100	40
Monoethanol Amine (See Ethanolamine)	100	30
Monomethylhydrazine	100	NR
Morpholine (*11)	100	30
Motor Oil	100	120
Muriatic Acid (See Hydrochloric Acid)		
Mustard		
Myristic Acid	All	120
<b>N</b>		
Naphtha	100	100
Naphtha, Heavy Aromatic (*11)	100	50
Naphthalene	100	100
Naphthanic Acid	100	
Neopentylglycol	100	
Neutralizer & Desmut		65
Nickel Chloride	All	100
Nickel Nitrate	All	100
Nickel Plating Solution #1 (11% Nickel Sulphate: 2% Nickel Chloride: 1% Boric Acid)		80
Nickel Plating Solution #2 (44% Nickel Sulphate: 4% Ammonium Chloride: 4% Boric Acid)		80
Nickel Sulphate	All	100
Nicotine Acid	All	45
Nitric Acid	2	100
Nitric Acid	5	80
Nitric Acid	15	
Nitric Acid	20	65
Nitric Acid	30	
Nitric Acid	40	30
Nitric Acid	50	
Nitric Acid Fumes		80
Nitric Acid / Hydrofluoric Acid (*1, *6)	8/5	60
Nitric Acid / HF	8/4	
Nitric Acid / HCL	8/2	
Nitric Acid / Chromic Acid	15/3	
Nitrobenzene	100	40
Nitrogen Tetroxide	100	NR
Nitrous Acid	10	
<b>O</b>		
OAKITE Rust Stripper		80
Octane	100	
Octanoic Acid (Caprylic Acid)	100	100

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Octene	100	
Octylamine, tertiary	100	
Oil, Sour Crude	100	120
Oil, Sweet Crude	100	120
Oils (Grease, Lube, Vegetable)	100	
Oleic Acid	All	95
Oleum (Fuming Sulphuric H <sub>2</sub> SO <sub>4</sub> )		NR
Olive Oils	100	120
Orange Oils	100	80
Oxalic Acid	All	
Oxalic Acid	Sat'd	50
Ozone		*6
<b>P</b>		
Palmitic Acid	100	120
Palmitic Oil	100	90
Palmioryl Chloride	100	
Paper Mill Effluent (*6)	100	
Paraffin	-	
Paraffin Wax	100	
Peanut Oil	100	
Pentanedioic Acid (See Gluteric Acid)	50	50
Pentasodium Triphosphate	10	
Pentoxide, HCL, H <sub>2</sub> S, SO <sub>2</sub>	Fumes	
Perchloric Acid	10	65
Perchloric Acid	30	40
Perchloric Acid	70	
Perchloroethylene	100	50
Peroxide Bleach		100
aqueous solution containing :		
2% sodium peroxide 96%, 0.025% epsom salts,		
5.0% sodium silicate 42°Be, 1.4% sulphuric acid 66°Be		
Phenol (Carbolic Acid)	5	50
Phenol	<1	
Phenol	5	
Phenol	10	-
Phenol	88	20
Phenol Formaldehyde Resin	All	50
Phenol Sulphonic Acid	65	30
Phenyl-2-Ethano	100	
Phosphoric Acid	50	
Phosphoric Acid	80	
Phosphoric Acid	95	
Phosphoric Acid	All	100
Phosphoric Acid		
Super-phosphoric acid ( 76% P <sub>2</sub> O <sub>5</sub> )		
	105	100
Phosphoric Acid (Polyphosphoric Acid)	115	100
Phosphoric Acid with Phosphorous Pentoxide		
Hydrochloric Acid and Sulphuric Dioxide		
	Fumes	110
Phosphoric Acid, vapour and condensate	100	120
Phosphoric Acid: Hydrochloric Acid Sat'd with Cl <sub>2</sub>	15:9	100
Phosphorous Acid	70	80

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Phosphorous Oxychloride		
Phosphorous Trichloride	100	NR
Phosphoryl Chloride		
Phossey Water		NR
Phtalic Acid	All	100
Phtalic Acid	Sat'd	100
Phtalic Acid Esters	100	
Phtalic Anhydride	Sat'd	
Picric Acid	All	
Picric Acid (alcoholic)	10	40 *7
Pine Oil (*7)	100	50
Piperazine monohydrochloride	All	*6
Plating Chemicals (*6)		*6
Plating Solution		
Cadmium cyanide		80
Chrome (*1)		65
Copper		80
Gold		40
Lead (*1)		-
Nickel		80
Platinum		80 *6
Silver		80
Tin (*1)		100
Zinc (*1)		95
Pluronic Surfactant 25R-2	100	
Polyacrylamide		40
Polyester Resins		
Polyethylene Glycol	100	
Polyethylene Imine	12	65
Polyoles	100	
Polyphosphoric Acid 115% H <sub>3</sub> PO <sub>4</sub>		100
Polyvinyl Acetate Adhesives	All	50
Polyvinyl Alcohol	All	50
Polyvinyl Chloride Latex with 35 parts DOF	All	50
Potassium Aluminium Sulphate	All	120
Potassium Aluminium Sulphate	Sat'd	
Potassium Amyl Xanthate	5	-
Potassium Bicarbonate (*1)	10	65
Potassium Bicarbonate (*1)	50	80
Potassium Bromide	All	50
Potassium Carbonate (*1)	10	65
Potassium Carbonate (*1)	25	65
Potassium Carbonate (*1)	50	80
Potassium Carbonate (*1)	Sat'd	
Potassium Chloride	All	100
Potassium Cyanide		
Potassium Dichromate	All	100
Potassium Ferricyanide	All	100
Potassium Ferrocyanide	All	100
Potassium Gold Cyanide	12	40
Potassium Hydroxide (*1)	10	65
Potassium Hydroxide (*1)	25	65
Potassium Hydroxide (*1)	45	80 *6
Potassium Hydroxide:Potassium Cyanide:		

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Copper Cyanide (*1)	2:2:5:7%	80 *6
Potassium iodide	All	65
Potassium Nitrate	All	100
Potassium Nitrate	Sat'd	
Potassium Oxalate	All	
Potassium Permanganate	All	100
Potassium Permanganate	Sat'd	
Potassium Persulphate	All	100
Potassium Persulphate	Sat'd	
Potassium Pyrophosphate	60	65
Potassium Silicofluoride (*1)	100	40
Potassium Sulphate	All	100
Propanol n or iso		
Propilamine n or iso		
Propionaldehyde		
Propionic Acid	40	
Propionic Acid	50	80
Propionic Acid	100	40
iso-Propyl Palmitate	-	
Propylene Glycol	All	100
Propylene Oxide	100	NR
Pulp Paper Mill Blow Down (Non Condensable Gases) (8*)		120
Pyridine	100	NR
<b>Q</b>		
Quaternary Amine Salts	25	
Quaternary Amine Salts	All	65
<b>R</b>		
Radiation Resistance (*6)		
Rayon Spin Bath		60
Rayon Spinning	Fumes	60
Recovery Boiler Gases		180
Renex (**) Detergents	All	
Rosin Sizes	100	
Rubber Latex Aqueous Disper		
<b>S</b>		
Salicyl Aldehyde	100	
Salicylic Acid	All	65
Salt Brine	< 5	
Salt Brine	30	120
Salt Brine	All	100
Sea Water		100
Selenious Acid	All	100
Silicone Oils or Greases	100	
SEPARAN(**) CP-7 Flocculant	38	
Sewage Municipal	100	
Silver Cyanide		
Silver Nitrate	All	100

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Silver Plating Solution, 4% Silver; 7% Potassium and 5% Sodium Cyanides; 2% Potassium Carbonate		80
Slimetrol		
Soaps	All	
Sodium Acetate	All	100
Sodium Alkyl Aryl Sulphonates	All	80
Sodium Aluminate	All	50
Sodium Aluminate	Sat'd	
Sodium Benzoate	100	80
Sodium Benzoate	Sat'd	
Sodium Bicarbonate (*1)	10	80
Sodium Bicarbonate (*1)	Sat'd	80
Sodium Bicarbonate: Sodium Carbonate (*1)	15:20	80
Sodium Bichromate	All	
Sodium Bifluoride (*1)	All	
Sodium Bisulphate	All	100
Sodium Bisulphate	Sat'd	
Sodium Bisulphite	All	
Sodium Bisulphite	Sat'd	100
Sodium Borate	All	
Sodium Borate	Sat'd	100
Sodium Borohydride / Sodium Hydroxide	12/48	
Sodium Bromate	5	65
Sodium Bromide	All	100
Sodium Bromide	Sat'd	
Sodium Bromide / Sodium Bromate	20/20	
Sodium Butyl Xanthate	5	
Sodium Carbonate (*1)	10	80
Sodium Carbonate (*1)	35	80
Sodium Chlorate	50	100
Sodium Chlorate	100	115
Sodium Chlorate: Sodium Chloride	3.2M:3.4M	100
Sodium Chloride	All	
Sodium Chloride, pH 5 - 10, Cl <sub>2</sub> Sat'd	Sat'd	95
Sodium Chloride	< Sat'd	100
Sodium Chloride	Sat'd	120
Sodium Chlorite	10	65
Sodium Chlorite	50	50
Sodium Chromate	50	100
Sodium Chromate	All	
Sodium Citrate	All	
Sodium Cyanide	5	
Sodium Cyanide	15	
Sodium Cyanide	All	100
Sodium Dichromate	50	
Sodium Dichromate	100	100
Sodium Dichromate	All	
Sodium Dihydrogen Phosphate	All	
Sodium Di-phosphate	100	100
Sodium Dodecyl Benzene sulphonate	All	70 *6
Sodium Ethyl Xanthate	5	
Sodium Ferricyanide	All	100
Sodium Ferrocyanide	All	100
Sodium Fluoride (*1)	All	80

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Sodium Fluosilicate (*1)	All	50
Sodium Hexametaphosphate	All	40
Sodium Hydrosulphide	All	80
Sodium Hydrosulphide (20% Alkalinity)	2	
Sodium Hydrosulphide	100	
Sodium Hydroxide (*1,*2)	5	65 *6
Sodium Hydroxide (*1,*2)	10	65 *6
Sodium Hydroxide (*1,*2)	25	80 *6
Sodium Hydroxide (*1,*2)	50	80 *6
Sodium Hydroxide - Chlorine Gas		
Sodium Hypochlorite (*1,*2,*3,*6)	5¼	
Sodium Hypochlorite (*1,*2,*3,*6)	15	80
Sodium Gluconate	100	
Sodium Lauryl Ether Ethoxylate	100	
Sodium Lauryl Sulphate	All	70
Sodium Lauryl Sulphate	60	
Sodium Methoxide		
Sodium Methylate		
Sodium Mono-phosphate	All	100
Sodium Nitrate	All	100
Sodium Nitrite	All	100
Sodium Orthophosphate (see Trisodium phosphate)		
Sodium Oxalate	All	
Sodium Oxalate	Sat'd	100
Sodium Persulphate	All	
Sodium Persulphate	Sat'd	
Sodium Phenolate		
Sodium Phosphate	10	100
Sodium Phosphate	All	
Sodium Phosphate Tri	All	100
Sodium Polyacrylate, pH 9 - 10.5	25	80
Sodium Polyacrylate	Sat'd	
Sodium Silicate	All	100
Sodium Sulphate	All	100
Sodium Sulphate	Sat'd	
Sodium Sulphydrate (See Sodium Hydrosulphide)		
Sodium Sulphydrate	20	
Sodium Sulphide	All	100
Sodium Sulphite	All	100
Sodium Tartrate	All	100
Sodium Tetraborate	Sat'd	80
Sodium Thiocyanate	57	80
Sodium Thiocyanate	All	
Sodium Thiosulphate	All	80
Sodium Tridecyl Sulphate	All	
Sodium Tripolyphosphate	All	
Sodium Tripolyphosphate	Sat'd	100
Sodium Tripolyphosphate	40	
Sodium Xylene Sulphonate	All	70
Solder Plate		65
Solvent Composite -		65
35% Xylene, 35% Kerosene, 30% di-2 ethyl hexyl phosphoric acid		
Solvent Extract Solutions		80
4% Trioctylphosphine oxide (TOPO)		

Chemical Environment	Concentration %	Recommended Temperature Limit °C
4% Diethyl Hexyl Phosphoric Acid (DEPHA) 92% Kerosene		
<b>Solvent Extraction Solutions</b>		80
3% Isodecanol; 6% ALAMINE 336; 91% Kerosene		
<b>Sorbitol Solutions</b>	All	80
<b>Sour Crude Oil</b>	100	120
<b>Soy Sauce</b>		
<b>Soya Oil</b>		100
<b>Span (**) Surfactant</b>	All	
<b>Spearmint Oil</b>	100	
<b>Stannic Chloride</b>	All	100
<b>Stannous Chloride</b>	All	100
<b>Stannous Sulphate</b>	All	
<b>Steam</b>		105
<b>Stearic Acid</b>	All	100
<b>Styrene</b>	100	50
<b>Styrene Acrylic Emulsion</b>		50
<b>Styrene Butadiene Latex</b>		
<b>Succinic Acid</b>	All	
<b>Succinonitrile, Aqueous</b>	All	
<b>Succinonitrile, Aqueous</b>		40
<b>Succinonitrile, Aqueous</b>	Sat'd	
<b>Sucrose</b>	All	100
<b>Sugar Beet, Liquor</b>		80
<b>Sugar, Cane, Liquor &amp; Sweetwater</b>	All	80
<b>Sugar / Sucrose</b>	All	100
<b>Sulphamic Acid</b>	10	100
<b>Sulphamic Acid</b>	25	65
<b>Sulphanilic Acid</b>	Sat'd	100
<b>Sulphate Process Non-Condensable Gases</b>		120
<b>Sulphated Detergents (*6)</b>	100	
<b>Sulphite/Sulphate Liquors (Pulp Mill)</b>		95
<b>Sulphonated Detergents</b>	All	80
<b>Sulphonyl Chloride, aromatic</b>		
<b>Sulphur Chloride</b>	Fumes	95
<b>Sulphur Dichloride</b>		
<b>Sulphur Dioxide (dry gas)</b>		120
<b>Sulphur Dioxide (wet gas)</b>		120
<b>Sulphur Dioxide (dry or wet gas)</b>	10	
<b>Sulphur Dioxide Burner, Wet Gas</b>		180
<b>Sulphur, Molten</b>		150
<b>Sulphur Trioxide - gas</b>	5	150
<b>Sulphur, Wettable, Fungicide (*4)</b>		80
<b>Sulphuric Acid</b>	1	
<b>Sulphuric Acid</b>	25	100
<b>Sulphuric Acid</b>	50	
<b>Sulphuric Acid</b>	70	80
<b>Sulphuric Acid</b>	75	80
<b>Sulphuric Acid</b>	80	50
<b>Sulphuric Acid</b>	93	NR
<b>Sulphuric Acid, Vapor</b>		180
<b>Sulphuric Acid: Chromic Acid Mix (max.total conc. 10%)</b>	10	65
<b>Sulphuric Acid: Ferrous Sulphate</b>	10:Sat'd	100
<b>Sulphuric Acid: Phosphoric Acid</b>	10:20	80

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Sulphurous Acid	10	50
Sulphurous Acid	All	45
Sulphuryl Chloride	100	
Superphosphoric Acid (76% P <sub>2</sub> O <sub>5</sub> ) ( 105% H <sub>3</sub> PO <sub>4</sub> )		100
Surfactant (*6)		
<b>T</b>		
T-Butyl Hydroperoxide (*6)	70	
Tall Oil Reactor (*6)	All	105
Tall Oil Storage	All	
Tannic Acid	All	100
Tartaric Acid	All	100
Tetrachloroethane	100	50
Tetrachloroethylene (Perchloroethylene)	100	50
Tetrachloropentane (*7)	100	40
Tetrachloropyridine		50
Tetrahydrofuran (THF)		
Tetrahydronaphtalene	100	
Tetrapotassium Pyrophosphate	60	65
Tetrapotassium Pyrophosphate	All	
Tetrasodium Pyrophosphate	5	
Tetrasodium Pyrophosphate	60	
Tetrasodium Pyrophosphate	All	
Tetrasodium Ethylenediaminetetracetic Acid (*1)	All	65
TEXTONE Liquid Product 50% aqueous solution of sodium chlorite		100
Thermal Oxidizer (HCl Absorption)		80
Thioglycolic Acid (Mercaptoacetic Acid)	10	
Thioglycolic Acid (Mercaptoacetic Acid)	All	40
Thionyl Chloride	100	NR
Tin Fluoborate Plating Bath 18% Stannous Fluoborate: 7% Tin, 9% Fluoboric Acid: 2% Boric Acid (*1)		100
Tobias Acid (2-naphthylamine - 1 Sulphonic)	All	100
Toluene	100	50
Toluene di-Isocyanate (TDI)	100	
Toluene Sulphonic Acid (*6)	All	100
Transformer Oil	100	150
Tributyl Phosphate	100	60
Trichloroacetic Acid	50	100
Trichloroacetaldehyde	100	NR *6
Trichlorobenzene		
Trichloroethane	100	50 *7
Trichloroethylene	100	*6
Trichloromonofluoromethane (*1)	100	40
Trichlorophenol	100	NR
2,4,5 Trichloromhenoxyacetic Acid (Acid, Salts, Esters and Formulations) (*4)		65
Tricresyl Phosphate	100	70
Tridecyl Benzene Sulphonate	All	
Triethanol Amine	100	50 *7
Triethanol Amine Lauryl Sulphate	All	



Chemical Environment	Concentration %	Recommended Temperature Limit °C
Triethyl Amine	All	50
Triethylene Glycol	100	80
Trimethyl Amine		
Trimethyl Amine Hydrochloride	Sat'd	-
Trimethylene Chlorobromide		NR
Trioctyl Phosphine Oxide, Diethyl Hexyl Phosphoric Acid; Kerosene 4/4/92		80
Tri-n-Butyl Amine		
Tri-n-Propyl Amine		
Tri-n-Tolyl Phosphate	100	
Tri-(2-Chlorethyl) Phosphate	100	
Triphenyl Phosphate	100	
Triphenyl Phosphite	100	
Tripropylene Glycol	100	65
Trisodium Phosphate	50	
Trisodium Phosphate	All	120
TRITON X-100 Wetting Agent		40
Tung Oil	100	
Turpentine	100	100
TWEEN (**) Surfactant	All	80
TYDEX(**) 12 Flocculant	12	65
<b>U</b>		
ULTRAWET (**) Surfactants	All	80
URAN Fertilizer Urea - Ammonium Nitrate Composition: 44.3% Ammonium Nitrate, 35.4% Urea, 20.3% Water		65
Uranium Extraction		80
Urea	50	65
Urea	All	
Urea: Ammonium Nitrate: Water	35:44:20	65
Urea Formaldehyde Resins Ph<7	100	50
Urine Sugar		115
<b>V</b>		
VAR SOL (**) Solvent		
Vegetable Oils	100	
VERSENE(**) Chelating Agents (*1)	2	
VERSENE(**) Chelating Agents (*1)	100	50
VERSENE(**) 100 Chelating Agents (*1)	All	65
VIDDEN(**) D Fumigant	-	30
Vinegar	10	
Vinegar	100	100
Vinegar, Grain Corn	10	
Vinyl Acetate	100	NR
Vinyl Chloride	100	NR
Vinyl Toluene	100	50
VORANOL(**) P-400 Polyol	100	50
<b>W</b>		

Chemical Environment	Concentration %	Recommended Temperature Limit °C
Waste, Organic, H <sub>2</sub> O, HCl, Cl <sub>2</sub>	Vapours	80 *6
Water, 50 ppm Phenol		50
Water, Deionized	100	80 *2
Water, Distilled	100	80 *2
Water, Sea		
Water, Sea, Desalination		80
Water, Steam Condensate	100	80
Whisky		
White Liquor (Pulp Mill)		80
Wine		
<b>X</b>		
Xylene	100	50 *7
<b>Z</b>		
Zeolite	All	
Zinc Chlorate	All	
Zinc Chloride	70	155
Zinc Chloride	All	
Zinc Chloride	Sat'd	
Zinc Cyanide		80
Zinc Cyanide Plating Bath, (*1) 9% Zinc and 4% Sodium Cyanides, 9% Sodium Hydroxide		80
Zinc Electrolyte		65
Zinc Fluoborate Plating Bath, (*1) 49% Zinc Fluoborate; 5% Ammonium Chloride; 6% Ammonium Fluoborate		93
Zinc Nitrate	All	120
Zinc Sulphate	All	120
Zinc Sulphite	All	

Chemical Environment	Concentration %	Recommended Temperature Limit °C
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## Appendix

Service recommendations given for a specific resin type pertain to all members of that resin, unless otherwise noted.

A blank space in the table indicates no data available at the time temperature ratings were assigned.

**Amb** : Ambient - Room Temperature = 20° C  
**NR** : Not Recommended

Drains, floorings, gratings and structural supports for walkways and stairways, where exposure is intermittent or is to fumes or spills only, may give good service in those chemical environments shown as NR ( not recommended ).

- \*1 Double synthetic veil should be used in inner layer.
  - \*2 Post-cure recommended to increase service life.
  - \*3 Benzoyl peroxide - DEA cure system recommended to increase service life.
  - \*4 Recommended provided that solvent used for dissolution is also recommended.
  - \*5 Satisfactory up to maximum stable temperature for product.
  - \*6 Check with corrosion technical service lab for specific recommendations.
  - \*7 Probably satisfactory at higher temperatures, but temperature shown is the highest for which information was available.
  - \*8 Double c-veil and 5 mm corrosion liner should be used.
  - \*9 Double c-veil.
  - \*10 Call for recommendations if Sulphuric Acid is present.
  - \*11 If service is marginal contact technical service lab.
  - \*12 Acid resistant glass should be used in the corrosion resistant liner and in the structural wall.
- (\*\*) Trademarks

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