



Maximum service temperature vs. chemical environment of DERA KANE 411 resins.

CHEMICAL ENVIRONMENT	% CONCENTRATION	MAXIMUM RECOMMENDED TEMP. °F/°C	CHEMICAL ENVIRONMENT	% CONCENTRATION	MAXIMUM RECOMMENDED TEMP. °F/°C
A			Aluminum Chlorohydrate	All	210/99
Acetaldehyde	100	NR	Aluminum Chlorohydroxide	50	210/99
Acetic Acid	10	210/99	Aluminum Fluoride ^{1,7}	All	80/27
•	15	210/99	Aluminum Hydroxide	100	180/82
•	25	210/99	Aluminum Nitrate	10	180/82
•	50	180/82	•	100	180/82
•	75	150/65	Aluminum Potassium Sulfate	All	210/99
Acetic Acid, Glacial	100	NR	Aluminum Sulfate	All	210/99
Acetic Anhydride	100	NR	AMBITROL* Ethylene Glycol		210/99
Acetone	10		Amino Acids		
•	100	NR	Ammonia	Liquified Gas	NR
Acid Cleaner – 31% hydrochloric acid		180/82	Ammonia ⁷	Gas	100/38
Acrylamide ⁷	50	80/27	Ammonia, Aqueous (See Ammonium Hydroxide)		
Acrylic Acid ⁷	25	100/38	Ammonium Acetate	65	80/27
Acrylic Latex		120/49	Ammonium Bicarbonate	10	160/71
Acrylonitrile ⁷ Latex dispersion	2	80/27	•	50	160/71
Activated Carbon Beds, Water Treatment		180/82	Ammonium Bifluoride	100	150/65
Adipic Acid (1.5 g sol. in water at 25°C, sol. hot water)	23	180/82	Ammonium Bisulfite black liquor		180/82
Agricultural Chemicals, Spray Operation ⁶		120/49	Ammonium Bisulfite cooking liquor		150/65
Air One Sided (Uninsulated) Air Temp Immersion		360/180 210/99	Ammonium Bromate	43	160/71
ALAMINE amines		150/65	Ammonium Bromide	43	160/71
Alcohol, Amyl	All	120/49	Ammonium Carbonate	All	150/65
Alcohol, Butyl	All	120/49	Ammonium Chloride	All	210/99
Alcohol, Ethyl	95	80/27	Ammonium Citrate	All	150/65
Alcohol, Isodecyl ⁷	All	120/49	Ammonium Fluoride ¹	All	150/65
Alkaline Cleaner – See sodium & potassium hydroxides			Ammonium Hydroxide ^{1,13}	5	180/82
Alkaline Solutions – See sodium, potassium, ammonium hydroxides, and carbonates			•	10	150/65
Alkyl Benzene Sulfonic Acid	92	120/49	•	20	150/65
Allyl Alcohol ¹¹	100	NR	•	29	100/38
Allyl Chloride	All	80/27	Ammonium Lauryl Sulfate	30	120/49
Alkyl Toly Trimethyl Ammonium Chloride	–	100/38	Ammonium Ligno Sulfonate	50	180/82
Alpha Methylstyrene	100	80/27	Ammonium Molybdate	All	150/65
Alpha Oleum Sulfates	100	120/49	Ammonium Nitrate	All	210/99
Alum	All	210/99	Ammonium Oxalate	All	150/65
Alumina Hydrate ⁶			Ammonium Pentaborate	12	120/49
Aluminum Chloride	All	210/99	Ammonium Perchlorate	15	170/77
			Ammonium Persulfate	All	180/82
			Ammonium Phosphate, dibasic	All	210/99
			Ammonium Phosphate, monobasic	All	210/99
			Ammonium Polysulfide	Sat'd	120/49

NR: Not recommended

- Should be used in inner layer.
- Post-cure recommended to increase service life.
- Benzoyl peroxide - DMA cure system recommended to increase service life.
- Recommended provided that solvent used for dissolution is also recommended.
- Satisfactory up to maximum stable temperature for product.
- Check with corrosion technical service lab for specific recommendations.

- Probably satisfactory at higher temperatures, but temperature shown is the highest for which information was available.
 - Double surfacing veil and 200-mil corrosion liner should be used.
 - Double surfacing veil.
 - If a DERA KANE 470 series resin is required, then use DERA KANE 470-45 resin.
 - If service is marginal, use DERA KANE 470-36 resin.
 - ECR Mal is recommended in the corrosion liner.
 - DERA KANE 411, 441-400 and 510C-350 resin series preferred.
- * Trademark of The Dow Chemical Company

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Ammonium Sulfate	All	210/99	Sodium Hypochlorite ^{1,2,3,5,6,13}	5 ¼	180/82
Ammonium Sulfide (Bisulfide)	Sat'd	120/49	•	10	180/82
Ammonium Sulfite	Sat'd	150/65	•	18	180/82
Ammonium Thiocyanate	20	210/99	TEXTONE Liquid		210/99
Ammonium Thioglycolate	7 ½	100/38	Blood Proteins	20	100/38
Ammonium Thiosulfate	60	100/38	Blood Sugar	All	210/99
Amyl Acetate	All	70/21	Blow Down (Non-Condensable Gases) ⁸		250/121
Amyl Alcohol	All	120/49	Borax	100	210/99
Amyl Alcohol, Vapor		120/49	Boric Acid	All	210/99
Amyl Chloride	100	120/49	Brake Fluid HD 557		120/49
Aniline	100	NR	Brass Plating Solution		180/82
Aniline Hydrochloride	All	180/82	3% Copper, 1% Zinc,		
Aniline Sulfate	All	210/99	5.6% Sodium Cyanides,		
Anodize (15% Sulfuric)			3.0% Sodium Carbonate ¹		
Aqua Regia ⁶			Brine	All	210/99
ARMEEN H.T. Amines		100/38	Brine Mixture		210/99
Arsenic Acid	All	100/38	(0.4% MgSO ₄ , 9.5% NaCl,		
Arsenious Acid	19°Be	180/82	5.0% Na ₂ SO ₄ , 2.0% K ₂ SO ₄ ,		
			7% CaSO ₄ ·2H ₂ O		
			3% Na ₂ SO ₄ ·9H ₂ O, pH 7)		
B			Brominated Phosphate Ester	All	
Barium Acetate	All	180/82	Bromine, Dry Gas		100/38
Barium Bromide	All	210/99	Bromine, Liquid	100	NR
Barium Carbonate	All	210/99	Bromine, Wet Gas	100	100/38
Barium Chloride	All	210/99	Brown Stock		200/93
Barium Cyanide	All	150/65	Bunker C Fuel Oil	100	210/99
Barium Hydroxide	All	150/65	Butanol (See Butyl Alcohol)		
Barium Sulfate	All	210/99	2-Butoxyethanol	100	100/38
Barium Sulfide	All	180/82	2,2-Butoxyethoxyethanol	100	100/38
Barley Solution		165/74	Butyl Acetate	100	NR
Beer		120/49	Butyl Acrylate ¹¹	100	NR
Beet Sugar Liquor		180/82	Butyl Alcohol	All	120/49
Benzaldehyde ¹¹	100	NR	Butyl Benzoate	70	
Benzalkonium Chloride	Dilute	100/38	Butyl Benzyl Phthalate	100	180/82
Benzene ¹¹	100	NR	Butyl Carbitol diethylene glycol	100	80/27
Benzene: Ethylbenzene ¹¹	⅓ - ⅔	NR	Butyl CELLOSOLVE Solvent	100	100/38
Benzene Hydrochloric Acid (Wet) ¹¹		NR	<i>t</i> -Butyl Hydroperoxide ⁶	70	
Benzene, Vapor ¹¹		80/27	Butyl Hypochlorite	98	NR
Benzene Sulfonic Acid	50	150/65	Butyl Stearate (5% in Mineral Spirits)		100/38
Benzoic Acid	Sat'd	210/99	Butylene Glycol	100	160/71
<i>o</i> -Benzoyl Benzoic Acid	All	210/99	Butylene Oxide	100	NR
Benzyl Alcohol	All	NR	Butyraldehyde	100	NR
Benzyl Chloride ¹¹	100	NR	Butyric Acid	25	210/99
Benzyltrimethylammonium Chloride	60	100/38	•	50	210/99
Bisulfite in Scrubber	Gases	180/82	•	100	80/27
Black Liquor (Pulp Mill)	All	180/82	C		
Black Liquor (Pulp Mill) Thick	All	200/93	Cadmium Chloride	All	180/82
Black Liquor (Kraft)	Thin	180/82	Cadmium Cyanide Plating Bath,		180/82
•	Thick	200/93	(3% Cadmium Oxide, 10% Sodium Cyanide,		
•			1.2% Sodium Hydroxide) ¹		
Black Liquor recovery ⁶ , furnace gases		325/163	Calcium Bisulfite	All	180/82
Bleaches			Calcium Bromide	All	210/99
Calcium Hypochlorite ^{1,2,3,5,6,13}	All	180/82	Calcium Carbonate	All	180/82
Chlorine Dioxide, Wet ⁶	Sat'd	200/93	Calcium Chlorate	All	210/99
Lithium Hypochlorite ^{1,2,3,5,6,13}	All	180/82	Calcium Chloride	All	210/99
Peroxides Dilute		210/99			

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Calcium Hydroxide ¹	15	180/82	Chromic Acid: Sulfuric Acid Mixture (Maximum Total Concentration 10%)	10	120/49
•	25	180/82	Chromium Plate		130/54
•	100	210/99	Chromium Sulfate	All	180/82
Calcium Hypochlorite ^{1,2,3,5,6,13}	All	180/82	Citric Acid	All	210/99
Calcium Nitrate	All	210/99	Cobalt Chloride	All	180/82
Calcium Sulfate	All	210/99	Cobalt Citrate	12	180/82
Calcium Sulfite	All	180/82	Cobalt Nitrate ⁷	15	120/49
CALGON (Product E) sodium hexametaphosphate		120/49	Coconut Oil	All	180/82
Cane Sugar Liquor & Sweetwater	All	180/82	Cod-liver Oil	100	100/38
Capric Acid	All	80/27	CONTINUE ETCH Solvent		100/38
Caproic Acid	100	80/27	Copper Chloride	All	210/99
Caprylic Acid (See Octanoic Acid)	All	180/82	Copper Cyanide	All	210/99
Caramel ⁷		120/49	Copper Cyanide Plating Bath (10.5% Copper and 14% Sodium Cyanides; 6% Rochelle Salts)	8:3:2	160/71
Carbon Dioxide Gas		210/99	Copper Cyanide, Potassium Cyanide, Potassium Hydroxide ¹	oz/gal	180/82
Carbon Disulfide	100	NR	Copper Matte Dipping Bath, 30% FeCl ₃ ; 19% Hydrochloric		180/82
•	Fumes	100/38	Copper Nitrate	All	210/99
Carbon Monoxide Gas ⁶		210/99	Copper Plating Solution (45% Cu(BF ₄) ₂ ; 19% Copper Sulfate; 8% Sulfonic) ¹		180/82
Carbon Tetrachloride	100	150/65	Copper Sulfate	All	210/99
Carbon Tetrachloride, vapor		175/79	Corn Oil		180/82
CARBOWAX Polyethylene Glycol	100	150/65	Corn Starch	Slurry	210/99
Carboxyethyl Cellulose	10	150/65	Corn Sugar	All	230/110
CASCADE Detergent in Solution		180/82	Cottonseed Oil		210/99
Cashew Nut Oil	100	150/65	Crude Oil, Sour	100	210/99
Castor Oil	100	160/71 ⁷	Crude Oil, Sweet	100	210/99
Caustic (See Sodium Hydroxide)			Cryogenic Temperatures ⁶		
Chlorinated Pulp		180/82	Cumene	100	80/27
Chlorinated Solvent Recovery (See specific solvents)			Cyanide Disposal (Hypo)		
Chlorinated Wax	All	180/82	Cyclohexane	100	120/49 ⁷
Chlorination Washer, Hoods & Vent Systems		180/82			
Chlorine-Hydrochloric Acid, Wet	8-10	210/99	D		
Chlorine Dioxide ⁶	All	200/93	DMA 4 Weed Killer 2,4-D (Dimethylamine)		120/49
Chlorine Dioxide, Wet ⁶	Sat'd	200/93	DMA 6 Weed Killer		120/49
Chlorine Dioxide Generator Effluent, R2 System		150/65	Dalapon Grass Killer		
Chlorine Water ⁶	Sat'd	200/93	Decanoic Acid	All	100/38
Chlorine, dry gas ⁸	100	210/99	Decanol	100	120/49
Chlorine, wet gas ⁸	100	210/99	Deionized Water	100	180/82
N-Chloro- <i>o</i> -Tolyl (insecticide emulsion)	10	120/49	Demineralized Water	100	180/82
Chloroacetic Acid ⁶	25	120/49	Desmut ¹	10	80/27
•	50	100/38	Detergents, Organic pH 9,11	All	180/82
•	Conc.	NR	Detergents, Organic pH 12	100	150/65
Chlorobenzene	100	NR	Detergents, Sulfonated	100	160/71
Chloroform	100	NR	Diallylphthalate	All	180/82
Chloropyridine (tetra)	100	120/49	Diammonium Phosphate	65	210/99
Chlorosulfonic Acid	10	NR	Dibromopropane	100	NR
CHLOROTHENE [®] SM 1,1,1-Trichloroethane inhibited	100	100/38	Dibromophenol		NR
Chlorotoluene	10	80/27	Dibromopropanol	100	
Chrome Bath, 19% Chromic Acid with Sodium Fluorosilicate and Sulfate ¹		120/49	Dibromonitrilo-Propionamide	100	NR
Chromic Acid	10	150/65	Dibutyl Carbitol	100	80/27
•	20	120/49	Dibutyl Ether	100	180/82
•	30	NR			

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Dibutylphthalate	All	180/82	E				
Dichlorobenzene	100	NR		ECR-34	100	120/49	
Dichloroethane ¹¹	100	NR		ELECTROSOL Antistatic Agent	5	150/65	
Dichloroethylene	100	NR		ENDURA-ETCH Solution	100	90/32	
Dichloromethane (Methylene Chloride)	100	NR		Epichlorohydrin	100	NR	
2,4-Dichlorophenoxyacetic Acid (Acid, Salts, Esters and Formulations) ⁴		120/49		Epoxidized Castor Oil	100	100/38	
Dichloropropane	100	NR		Epoxidized Soybean Oil	100	150/65	
Dichloropropene ¹¹	100	NR		ESTERON* 245 Herbicide	100	120/49	
Dichloropropionic Acid	100	NR		ESTERON Herbicide	100	120/49	
Dichlorotoluene	100	80/27		Esters, Fatty Acid	100	180/82	
Diesel Fuel	100	180/82		Ethanol	95	80/27	
Diethanolamine	100	120/49 ⁷			50	100/38	
Diethylbenzene	100	100/38		Ethanol (Ethyl Alcohol)	10	120/49	
Diethyl Carbonate	100	NR		Ethanolamine ¹¹	100	NR	
Diethyl Ether	100	NR		Ethyl Acetate ¹¹	100	NR	
Diethyl Formamide	100	NR		Ethyl Acrylate	100	NR	
Diethyl Ketone	100	NR		Ethylbenzene	100	80/27	
Diethyl Sulfate	100	100/38		Ethylbenzene: Benzene	⅔:⅓	NR	
Diethyl Glycol	100	180/82		Ethyl Bromide		NR	
Diethylhexyl Phosphoric acid (in kerosene)	20	180/82		Ethyl Chloride	100	NR	
Diisobutyl Ketone		NR		Ethylene Chloride	100	NR	
Diisobutyl Phthalate	100	150/65		Ethylene Dibromide	100	NR	
Diisobutylene	100	100/38		Ethyl Ether	100	NR	
Diisopropanolamine	100	120/49		Ethylene Oxide	100	NR	
Dimethyl Formamide	100	NR		Ethyl Sulfate	100	100/38	
Dimethyl Morpholine	100	NR		Ethylene Chlorohydrin	100	100/38	
Dimethyl Phthalate	100	150/65		Ethylene Dichloride (See Dichloroethane)	100	NR	
Dimethyl Sulfide	100	NR		Ethylene Glycol	All	210/99	
2,2-Dimethyl Thiazolidine	1	150/65		Ethylene Glycol Monobutyl Ether	100	100/38	
Dioctyl Phthalate	100	150/65		Ethylenediaminetetraacetic Acid		100/38	
Diphenyl Oxide (Diphenyl Ether, Phenyl Ether)	100	80/27		Eucalyptus Oil	100	140/60	
Dipotassium phosphate	50	100/38		F			
Dipropylene Glycol	100	180/82			Fatty Acids	All	210/99
Distilled Water	100	180/82			Ferric Acetate	Sat'd	180/82
Divinylbenzene	100	100/38			Ferric Chloride	All	210/99
Dodecanol (Lauryl Alcohol)	100	150/65			Ferric Chloride: Ferrous Chloride	5:20	210/99
Dodecene	100	150/65			Ferric Chloride: Ferrous Chloride: Hydrochloric Acid	48:0.2:0.2	180/82
Dodecyl Benzene Sulfonic Acid: Sulfuric Acid: Water: Oil	85:10:4:1	150/65			Ferric Chloride: Hydrochloric Acid	29:18:5	180/82
Dodecyl Benzene Sulfonic Acid	100	120/49	Ferrous Nitrate		All	210/99	
DOWANOL* DB Diethylene Glycol <i>n</i> -Butyl Ether (see also Butyl CARBITOL)	100	80/27	Ferric Sulfate		All	210/99	
DOWANOL DB Glycol Ether ¹¹	100	80/27	Ferrous Chloride		All	210/99	
DOWANOL EB Glycol Ether (Ethylene Glycol <i>n</i> -butyl ether)	100	100/38	Ferrous Nitrate		All	210/99	
DOWANOL PM Glycol Ether	100	NR	Ferrous Sulfate		All	210/99	
DOWCLENÉ* Solvent	100	120/49	Fertilizer. URAN			120/49	
DOWCLENÉ EC Solvent		100/38	Ureaammonium nitrate composition: 43.4% Ammonium Nitrate. 35.4% Urea, 20.3% Water				
DOWEX* 50WX4 Ion Exchange Resin		210/99	8-8-8 Fertilizer Composition (Parts by wt. - 30 Phosphoric Acid; 29 Ammonia, 104.3 Water, 10.4 Uran, 26.0 Potash, 3.0 Borax pH 8.2)			120/49	
DOWFAX* 2A0 Solution Surfactant	40% Solution	120/49					
DOWFAX 2A1 Surfactant	45% Solution	120/49					
DOWICIDE* Antimicrobial		120/49					
DOWTHERM* Heat Transfer Agent	100	120/49					

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Flue Gas ⁶		325/163	Hexane	100	160/71
Flue Gas, Wet	All	180/82	Hot Stack Gas ⁶		
Fluoboric Acid ¹	All	210/99	Hydraulic Fluid	100	180/82
Fluoride Salts + Hydrochloric Acid ¹	30:10	120/49	Hydrazine	100	NR
Fluorine Gas ¹		80/27	Hydriodic Acid	40	150/65
Fluosilicic Acid ¹	10	180/82	Hydrobromic Acid	18	180/82
• •	25	100/38	• •	25	180/82
• •	35	100/38	• •	48	150/65
Fluosilicic Acid Fumes ¹		180/82	• •	62	100/38
Fly Ash Slurry		150/65	Hydrocarbons ⁶		
Formaldehyde ⁵	All	150/65	Hydrochloric Acid ⁹	10	180/82
Formic Acid	10	180/82	• •	15	180/82
• •	98		• • ^{*8,12}	20	180/82
FOSTERGE Products		100/38	• • ^{*8,12}	37	150/65
FREON 11	100	80/27	Hydrochloric Acid & Organics ^{6,8,12}		NR
FREON 12		80/27	Hydrochloric Acid + Free Chlorine ^{9,12}	All	180/82
FREON 113 Solvent		100/38	Hydrochloric Acid, Fumes + Free Chlorine ^{9,12}		
FREON Products (Call for Recommendation)			Hydrochloric Acid, Fumes ⁹		210/99
Fuel Oil	100	180/82	Hydrocyanic Acid	All	210/99
Furfural	100	NR	Hydrofluoric Acid ¹	10	150/65
Furfural Alcohol ¹¹	100	NR	• •	20	100/38
G			Hydrofluosilic Acid ¹	10	180/82
GALECRON 4EC Insecticide	100	80/27	• •	25	100/38
Gallic Acid	Sat'd		• •	35	100/38
Gasohol (5% MEOH)	100	120/49	Hydrogen Bromide, wet gas	100	180/82
Gasohol (Up to 10% Alcohol)		100/38	Hydrogen Chloride, dry gas ⁶	100	210/99
Gasohol (10-100% Alcohol)		NR	Hydrogen Chloride, wet gas ⁶	100	210/99
Gasoline, Leaded	100	180/82	Hydrogen Fluoride, vapor ¹		180/82
Gasoline, Aviation	100	180/82	Hydrogen Peroxide	30	150/65
Gasoline, No Lead, No Methanol	100	120/49	Hydrogen Sulfide	5	180/82
Glyconic Acid	50	180/82	Hydrogen Sulfide	100	180/82
Glucose	100	210/99	Hydrosulfite Bleach - Aqueous Solution containing 5% Zinc Hydrosulfite and 2.5% Triphosphosphate ⁵		180/82
Glutaraldehyde	50	120/49 ⁷	Hydroxyacetic Acid (Glycolic Acid)	70	100/38
Glutaric Acid	50	120/49	Hypochlorous Acid ⁶		
Glycerine	100	210/99	Hypophosphorous Acid	50	120/49
Glycol	All	210/99	I		
Glycolic Acid (Hydroxyacetic)	70	100/38	Incinerator Gases ⁶		
Glyoxal	40	100/38	Insecticides ⁶		120/49
Gold Plating Solution (23% Potassium Ferrocyanide with Potassium Gold Cyanide and Sodium Cyanide)		100/38	Iodine, Crystals	100	150/65
GOODRITE K702 Product		100/38	Iodine, Vapor	100	150/65
GOODRITE K732 Product		100/38	Iron Plating Solution 45% FeCl ₂ ; 15% CaCl ₂ ; 20% FeSO ₄ ; 11% (NH ₄) ₂ SO ₄	100	180/82
Green Liquor	All	180/82	Iron and Steel Cleaning Bath, 9% Hydrochloric, 23% Sulfuric		180/82
H			Isoamyl Alcohol	100	120/49
Hard Chrome Plating Baths		140/60	Isobutyl Alcohol	100	120/49
n-Heptane	100	210/99	Isodecanol		120/49 ⁷
Herbicides ⁶		120/49	Isononyl Alcohol	100	150/65
Hexachloroethane ¹¹	100	NR	Isooctyl Adipate	100	120/49
Hexamethylenetetramine	40	100/38	Isoocetyl Alcohol	100	150/65
			Isopropyl Alcohol	All	120/49

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Isopropyl Amine	100	120/49	Methyl Bromide (Gas)	10	80/27
Isopropyl Myristate	100	210/99	Methyl Ethyl Ketone ^{6,11}	100	NR
Isopropyl Palmitate	100	210/99	α-Methylstyrene	100	80/27
Itaconic Acid	25	120/49	Methylamine	100	NR
J			Methylene Chloride	100	NR
Jet Fuel (JP-4)	100	180/82	Methylene Chloride: Methanol: Water 1:4:95		100/38
K			Milk	100	210/99
Kerosene	100	180/82	Mineral Oils	100	210/99
Kerosene, Diethylhexyl Phosphoric Acid (DEHPA), Trioctyl Phosphine Oxide (TOPO)		180/82	Molasses	100	120/49
Kraft Recovery Boiler Breaching			Molybdenum Disulfide (Manufacturing)		200/93
L			Monochloroacetic Acid ⁶	80	NR
Lactic Acid	All	210/99	•	100	NR
LASSO Herbicide			Monochlorobenzene	100	NR
Latex		120/49	Monoethanolamine (See Ethanolamine)		
Lauroyl Chloride		100/38	Monomethylhydrazine	100	NR
Lauryl Alcohol	100	150/65	Morpholine ¹¹	100	NR
Lauryl Chloride	100	210/99	Motor Oil		210/99
Lauryl Chloride, Crude, Acidic	100	210/99	Muriatic Acid (See Hydrochloric Acid)		
Lauryl Mercaptain	All		Myristic Acid	100	210/99
Lead Acetate	All	210/99	N		
Levulinic Acid	All	210/99	Naphtha	100	180/82
Linseed Oil	100	210/99	Naphtha, Heavy Aromatic ¹¹		
Lithium Bromide	Sat'd	210/99	Naphthalene	100	210/99
Lithium Carbonate ¹	Sat'd	180/82	Neutralizer & Desmut		150/65
Lithium Chloride	Sat'd	210/99	Nickel Chloride	All	210/99
Lithium Hydroxide ¹	Sat'd	180/82	Nickel Nitrate	All	210/99
Lithium Hypochlorite ^{1, 2, 3, 5, 6, 13}	All	180/82	Nickel Plating Solution #1 (11% Nickel Sulfate; 2% Nickel Chloride; 1% Boric Acid)		180/82
M			Nickel Plating Solution #2 (44% Nickel Sulfate; 4% Ammonium Chloride; 4% Boric Acid)		180/82
Magnesium Bisulfite	All	180/82	Nickel Sulfate	All	210/99
Magnesium Carbonate	All	180/82	Nitric Acid	5	150/65
Magnesium Chloride	All	210/99	•	20	120/49
Magnesium Fluosilicate ¹	All	180/82	•	40	NR
Magnesium Hydroxide	100	210/99	Nitric Acid Fumes		180/82
Magnesium Nitrate	All	210/99	Nitric/Hydrofluoric Acid ^{1, 6}	20/6	130/54
Magnesium Phosphate	All	120/49	Nitrobenzene	100	NR
Magnesium Sulfate	All	210/99	Noncondensable Blow-Horn Gases ⁶		
MAGNIFLOC 500 Series Products	All	140/60	O		
MAGNIFLOC 837A Products	All	150/65	OAKITE Rust Stripper		180/82
Maleic Acid	100	210/99	Octanoic Acid (Caprylic Acid)	100	180/82
Manganese Chloride (Manganous Chloride)	All	210/99	Oil, Sour Crude	100	210/99
Manganese Sulfate (Manganous Sulfate)	All	210/99	Oil, Sweet Crude	100	210/99
Melamine Formaldehyde Resin	100	100/38	Oleic Acid	All	210/99
Mercaptoacetic Acid	All	NR	Oleum (Fuming Sulfuric)		NR
Mercuric Chloride	100	210/99	Olive Oils	100	210/99
Mercurous Chloride	All	210/99	Oxalic Acid	Sat	120/49
Mercury	100	210/99	Ozone	5	140/60
Methanol	5	120/49			
Methyl Alcohol (Methanol)	100	NR			

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P			Potassium Hydroxide:	2.3.8 oz/gal	180/82
Palmitic Acid	100	210/99	Potassium Cyanide:		
Paper Mill Effluent*		180/82	Copper Cyanide ¹		
Peanut Oil	100	180/82	Potassium Iodide	All	120/49
Pentanedioic Acid (See Glutaric Acid)	50	120/49	Potassium Nitrate	All	210/99
Perchloric Acid	10	150/65	Potassium Oxalate	All	150/65
•	30	100/38	Potassium Permanganate	All	210/99
Perchloroethylene	100	80/27	Potassium Persulfate	All	210/99
Peroxide Bleach -		210/99	Potassium Pyrophosphate	60	130/54
Aqueous Solution Containing: 2% Sodium			Potassium Silicofluoride ¹		100/38
Peroxide 96%, 0.025% Epsom Salts, 5.0%			Potassium Sulfate	All	210/99
Sodium Silicate 42°Be, 1.4% Sulfuric Acid 66°Be			Propionic Acid	50	180/82
Phenol (Carbolic Acid)	5		•	100	NR
Phenol	88	NR	Propylene Glycol	All	210/99
Phenol Formaldehyde Resin	All	100/38	Propylene Oxide	100	NR
Phenol Sulfonic Acid	65	NR	Pulp Paper Mill Blow Down		210/99
Phosphoric Acid	85	210/99	(Noncondensable Gases) ⁸		
•	100	210/99	PURIFLOC® C-41 Flocculant		100/38
Phosphoric Acid (Superphosphoric Acid	105	210/99	Pyridine	100	NR
76% P ₂ O ₅)			Q		
Phosphoric Acid (Polyphosphoric Acid)	115	210/99	Quaternary Amine Salts		120/49
Phosphoric Acid with Phosphorous Pentoxide,	Fumes	210/99	R		
Hydrochloric Acid and Sulfuric Dioxide			Radiation Resistance ⁶		
Phosphoric Acid, vapor and condensate	100	210/99	Rayon Spin Bath		
Phosphoric Acid: Hydrochloric Acid,	15:9	210/99	Rayon Spinning	Fumes	140/60
Sat'd with Cl ₂			Recovery Boiler Gases		
Phosphorous Acid	70	100/38	Red Liquor	All	180/82
Phosphorous Trichloride		NR	S		
Phthalic Acid	All	210/99	Salicylic Acid	100	140/60
Picric Acid (Alcoholic)	10	NR	Salt Brine	30	210/99
Pine Oil ⁷	100	NR	Sea Water		180/82
Plating Chemicals ⁶			Selenious Acid	All	210/99
Platinum Plating Solution		180/82	SEPARAN® CP-7 Flocculant		100/38
Polyacrylamide			Silver Nitrate	All	210/99
Polyethyleneimine	12	150/65	Silver Plating Solution, 4% Silver;		180/82
Polyphosphoric Acid 115% H3PO4		210/99	7% Potassium and 5% Sodium Cyanides;		
Polyvinyl Acetate Adhesives		120/49	2% Potassium Carbonate		
Polyvinyl Alcohol	All	100/38	Sodium Acetate	All	210/99
Polyvinyl Chloride Latex with 35 parts DOP		120/49	Sodium Alkyd Aryl Sulfonates	All	180/82
Potassium Aluminum Sulfate	All	210/99	Sodium Aluminate	All	120/49
Potassium Bicarbonate ¹	10	150/65	Sodium Benzoate	100	180/82
•	50	180/82	Sodium Bicarbonate ¹	10	180/82
Potassium Bromide	All	100/38	•	Sat'd	180/82
Potassium Carbonate ¹	10	150/65	Sodium Bicarbonate: Sodium Carbonate ¹	15:20	180/82
•	25	150/65	Sodium Bifluoride ¹	All	120/49
•	50	180/82	Sodium Bisulfate	All	210/99
Potassium Chloride	All	210/99	Sodium Bisulfite	Sat'd	210/99
Potassium Dichromate	All	210/99	Sodium Borate	Sat'd	210/99
Potassium Ferricyanide	All	210/99	Sodium Borohydride SWS	Sat'ds	100/38
Potassium Ferrocyanide	All	210/99	(Stabilized Water Solution)		
Potassium Gold Cyanide	12	100/38	Sodium Bromate	5	140/60
Potassium Hydroxide ^{12,13}	10	150/65			
•	25	150/65			
•	45	180/82			

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Sodium Bromide	All	210/99	Solvent Composite –		100/38
Sodium Carbonate ¹	10	180/82	35% Xylene		
•	25	180/82	35% Kerosene		
•	32	180/82	30% Di-2-Ethylhexyl		
•	35	180/82	Phosphoric acid		
Sodium Carbonate: Sodium Bicarbonate ¹	20:15	180/82	Solvent Extraction Solutions		180/82
Sodium Chlorate	50	210/99	4% Tricylphosphine Oxide (TOPO),		
Sodium Chlorate: Sodium Chloride	3.2M:3.4M	210/99	4% Diethylhexyl Phosphoric Acid (DEHPA),		
Sodium Chloride, pH 5-10, Cl ₂ Sat'd	Sat'd	180/82	92% Kerosene		
Sodium Chloride; Sodium Chlorate	3.4M:3.2M	210/99	Solvent Extraction Solutions		180/82
Sodium Chlorite	10	150/65	3% Isodecanol		
•	50	100/38	6% ALAMINE 336		
Sodium Chromate	50	210/99	91% Kerosene		
Sodium Cyanide	All	210/99	Sorbitol Solutions	All	160/71
Sodium Dichromate	100	210/99	Sour Crude Oil	100	210/99
Sodium Diphosphate	100	210/99	Soy Sauce		100/38
Sodium Dodecylbenzenesulfonate		160/71	Soya Oil	100	210/99
Sodium Ferricyanide	All	210/99	Spearmint Oil		100/38
Sodium Ferrocyanide	All	210/99	Stannic Chloride	All	210/99
Sodium Fluoride ¹	All	180/82	Stannous Chloride	All	210/99
Sodium Fluorosilicate ¹	All	120/49	Steam		210/99
Sodium Hexametaphosphate	All	100/38	Stearic Acid	All	210/99
Sodium Hydrosulfide	All	180/82	Styrene	100	NR
Sodium Hydroxide ^{1,2,13}	5	180/82	Sytrene Acrylic Emulsion		100/38
•	10	180/82	Styrene-Butadiene Latex		130/54
•	25	180/82	Succinonitrile, Aqueous		80/27
•	50	210/99	Sugar Beet, Liquor		180/82
Sodium Hypochlorite ^{1,2,3,5,6,13}	5 1/4	180/82	Sugar Cane, Liquor & Sweetwater	All	180/82
•	10	180/82	Sugar/Sucrose	All	210/99
•	18	180/82	Sulfamic Acid	10	210/99
Sodium Hypochlorite, 5% ^{1,2,3,5,6,13}		180/82	•	25	150/65
NaOH Scrubbing Cl ₂ , ClO ₂			Sulfanilic Acid	All	210/99
Sodium Lauryl Sulfate	All	160/71	Sulfate Process Noncondensable Gases		
Sodium Metabisulfite	All	210/99	Sulfated Detergents ⁵		
Sodium Monophosphate	All	210/99	Sulfite/Sulfate Liquors (Pulp Mill)		200/93
Sodium Nitrate	All	210/99	Sulfonated Detergents	100	160/71
Sodium Oxalate	Sat'd	210/99	Sulfite/Sulfate Liquors (Pulp Mill)		200/93
Sodium Persulfate	20	130/54	Sulfonated Detergents	100	160/71
Sodium Phosphate	10	210/99	Sulfur Chloride	Fumes	200/94
Sodium Phosphate Tri	All	210/99	Sulfur Dioxide (dry or wet)		210/99
Sodium Polyacrylate, pH 9-10.5	25	180/82	Sulfur Dioxide Burner, Wet Gas		210/99
Sodium Silicate	All	210/99	Sulfur, Molten		
Sodium Sulfate	All	210/99	Sulfur Trioxide		210/99
Sodium Sulfhydrate (See Sodium Hydrosulfide)			Sulfur, Wettable, Fungicide ⁴		180/82
Sodium Sulfide	All	210/99	Sulfuric Acid	25	210/99
Sodium Sulfite	All	210/99	•	70	180/82
Sodium Tartrate	All	210/99	•	75	100/38
Sodium Tetraborate	Sat'd	180/82	•	93	NR
Sodium Thiocyanate	57	180/82	Sulfuric Acid:		120/49
Sodium Thiosulfate	All	180/82	Chromic Acid Mixture		
Sodium Tripolyphosphate	Sat'd	210/99	(Maximum Total Concentration 10%)		
Sodium Xylene Sulfonate	All	160/71	Sulfuric Acid, Vapor		210/99
Solder Plate		150/65	Sulfuric Acid: Ferrous Sulfate	10:Sat'd	210/99
			Sulfuric Acid: Phosphoric Acid	10:20	180/82

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Sulfurous Acid	10	120/49	U ULTRAWET Surfactant URAN Fertilizer Urea – Ammonium Nitrate Composition: 44.3% Ammonium Nitrate 35.4% Urea 20.3% Water Uranium Extraction Urea Urea: Ammonium Nitrate: Water Urea Formaldehyde Resin Urine Sugar	All	150/65
Superphosphoric Acid (76% P ₂ O ₅) Surfactant ⁶	105% H ₃ PO ₄	210/99		All	120/49
T Tall Oil Reactor ⁶		210/99			
Tall Oil Storage	All	200/94			
Tannic Acid	All	210/99			
Tartaric Acid	All	210/99		50	150/65
Tetrachloroethane	100	NR		35:44:20	120/49
Tetrachloroethylene (Perchloroethylene)	100	80/27		100	100/38
Tetrachloropentane ²	100	80/27			
Tetrachloropyridine		80/27			
Tetrapotassium Pyrophosphate	60	130/54	V Vanillin Black Liquor VERSENE* Chelating Agents ¹ Vetran 650 ¹ (16.7 Vol. % VERSENE* 100 Aqueous Solution, pH 9.5-10) VIDDEN* D Fumigant Vinegar Vinyl Chloride Vinyltoluene VORANOL* P-400 Polyol		120/49
Tetrasodium Ethylenediaminetetraacetic Acid ¹	All	150/65			120/49
TEXTONE Liquid Product 50% Aqueous Solution of Sodium Chlorite		210/99			180/82
Thermal Oxidizer (HCl Absorption)					
Thioglycolic Acid (Mercaptoacetic Acid)	All	NR			
Thionyl Chloride		NR		100	210/99
Tin Fluoborate Plating Bath, 18% Stannous Fluoborate; 7% Tin, 9% Fluoboric Acid; 2% Boric Acid ¹		210/99		100	NR
Tobias Acid (2-Naphthylamine-1-Sulfonic)	100	210/99		100	80/27
Toluene	100	80/27		100	120/49
Toluene Sulfonic Acid ⁶	All	210/99			
Tomato Sauce		190/88	W Waste, Organic, H ₂ O, HCl, Cl ₂ , Vapors ⁶ Water, 50 ppm Phenol Water Deionized? Water, Distilled? Water, Sea, Desalination pH 7.5 Water, Sea, Desalination pH 7.5 Water, Steam Condensate ² Whey White Liquor (Pulp Mill)	100	180/82
Transformer Oils		210/99		100	180/82
Tributyl Phosphate	100	120/49		1.75 x Normal	180/82
Trichloroacetic Acid	50	210/99		2.75 x Normal	180/82
Trichloroethane	100	100/38		100	180/82
Trichloroethylene	100	NR		All	150/65
Trichloromethylfluoromethane ¹	100	80/27		200/93	
2,4,5 Trichlorophenoxyacetic Acid (Acid, Salts, Esters and Formulations) ⁴		120/49			
Tricresyl Phosphate	100	160/71			
Triethanolamine	100	120/49			
Triethylamine	All	120/49	X Xylene	100	80/27
Triethylene Glycol	100	180/82			
Trimethylene Chlorobromide		NR	Z Zinc Chloride Zinc Cyanide Plating Bath, ¹ 9% Zinc and 4% Sodium Cyanides, 9% Sodium Hydroxide Zinc Electrolyte Zinc Fluoborate Plating Bath, ¹ 49% Zinc Fluoborate; 5% Ammonium Chloride, 6% Ammonium Fluoborate Zinc Nitrate Zinc Sulfate		
Trioctyl Phosphine Oxide, Diethyl Hexyl Phosphoric Acid; Kerosene 4:4:92		180/82		70	210/99
Tripropylene Glycol	100	150/65			180/82
Trisodium Phosphate	All	210/99			150/65
TRITON X-100 Wetting Agent					200/93
Turpentine	100	150/65			210/99
TWEEN Surfactant	All	150/65			210/99
TYDEX* 12 Flocculant	12	150/65			

