



Atlas Minerals & Chemicals, Inc.



DATA SHEET

4-2000 (8-23)

Supersedes 4-2000 (8-19)

CHEMPRUF® 2000 SERIES

KEY:

- NR = Not recommended
- LS = Limited service
- ◆ = Two layers of Chempruf 10 mil Surface Mat must be used in the surface mat layers
- ♣ = Reinforced with two layers of Ureklad™ Reinforcing Mat and one layer of Chempruf 10 mil Surface Mat
- ♥ = Aluminum oxide filled, carbon fabric reinforced
- ♠ = Polyester fabric reinforced
- = Use carbon filled system

Note: Numbers listed under each Chempruf lining are maximum temperatures in degrees Fahrenheit (°F) for total immersion service in the solutions listed at given concentrations, unless stated otherwise.

The information presented is based on judgements derived from laboratory testing and field service performance. No guarantee of results is made or implied and no liability in connection with this information is assumed. The information presented herein should be supplemented by in-service testing. The data furnished in the tables may be revised on the basis of further testing.

Note: For Abrasive Environments, Use Aluminum Oxide Filled System

CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Acetaldehyde	100	225	NR	NR	NR
Acetic Acid	10	225	LS/80	180	180
Acetic Acid	15	225	NR	180	180
Acetic Acid	25	225	NR	180	180
Acetic Acid	50	225	NR	125	180
Acetic Acid	75	225	NR	100	100
Acetic Acid, Glacial	100	225	NR	LS/80	100
Acetone	100	130	NR	NR	NR
Acetonitrile	100	80	NR	NR	NR
Acetophenone	100	NR	NR	NR	NR
Acetyl Chloride	100	180	NR	NR	NR
Acrylamide	50	80	NR	80	100
Acrylic Acid	10	100	NR	100	100
Acrylic Acid	25	80	NR	100	100
Acrylic Acid	100	NR	NR	NR	100
Acrylonitrile	100	225	NR	NR	NR
Allyl Chloride	100	90	NR	NR	80
Alum	all	200	160	180	180
Alum, Potassium	all	200	160	180	180
Aluminum Chloride	all	250	160	180	180
Aluminum Nitrate	all	250	160	180	180
Aluminum Sulfate	all	250	160	180	180
Aminoethyl Piperazine	100	110	NR	NR	NR
Ammonia, Dry	gas	100	80	90	100
Ammonia, Liquefied Gas	—	NR	NR	NR	NR
Ammonium Bicarbonate	10	180	160	130	160
Ammonium Bicarbonate	15	180	160	120	160
Ammonium Bicarbonate	20	180	160	NR	160
Ammonium Bicarbonate	saturated	225	140	NR	150
Ammonium Bisulfite Liquor	—	150	NR	180	180
Ammonium Carbonate	10	180	140	NR	150

CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Ammonium Carbonate	30	225	140	NR	150
Ammonium Carbonate	saturated	225	120	NR	150
Ammonium Chloride	saturated	220	140	180	180
Ammonium Fluoride	all	225	NR	150♦/NR	150♦/NR
Ammonium Hydroxide	5	180	140	NR	180
Ammonium Hydroxide	10	180	140	NR	150
Ammonium Hydroxide	20	140	140	NR	150
Ammonium Hydroxide	28	100	100	NR	100
Ammonium Nitrate	saturated	220	140	180	180
Ammonium Phosphate, Dibasic	saturated	180	140	150	180
Ammonium Phosphate, Monobasic	saturated	180	140	180	180
Ammonium Sulfate	saturated	220	140	180	180
Ammonium Sulfide	25	120	100	80	120
Ammonium Sulfite	10	150	80	NR	150
Ammonium Thiocyanate	20	180	100	180	180
Ammonium Thiocyanate	saturated	120	80	180	120
Amyl Acetate	all	200	80	80	80
Amyl Alcohol	all	200	120	180	180
Aniline Sulfate	saturated	180	80	180	180
Antimony Pentachloride	100	100	80	80	80
Antimony Trichloride	saturated	100	80	180	180
Barium Carbonate	all	200	140	180	180
Barium Chloride	all	200	140	180	180
Barium Hydroxide	10	200	140	NR	160
Barium Hydroxide	saturated	200	140	NR	150
Barium Sulfate	all	250	160	180	180
Barium Sulfide	saturated	150	140	NR	180
Beer	—	80	80	80	80
Benzaldehyde	100	200	NR	NR	70
Benzene	100	120	90	90	100
Benzene Sulfonic Acid	30	200	100	180	180
Benzene Sulfonic Acid	saturated	200	NR	100	180
Benzoic Acid	saturated	250	NR	180	180
Benzyl Alcohol	100	200	100	NR	100
Benzyl Chloride	100	150	LS	NR	LS
Black Liquor, pH > 7	—	150	NR	NR	180
Bleach Reactor - 6% Sodium Hypochlorite	—	NR	LS	140	180
Borax	saturated	140	140	180	180
Boric Acid	saturated	200	160	180	180
Brine, Salt	saturated	220	160	180	180
Bromine, Dry	gas	NR	NR	90	100
Bromine Fumes	—	NR	NR	90	100
Bromine, Liquid	—	NR	NR	NR	NR
Bromine Water	saturated	NR	NR	NR	75
Bromine:Water	5:95	NR	NR	NR	180
Bromine, Wet Gas	100	NR	NR	90	90
Butyl Acetate	100	220	90	90	90
Butyl Alcohol	100	120	120	100	120
Butyl Carbitol	100	NR	90	80	100
Butyl Cellosolve	100	NR	80	90	100
Butyl Ether	100	170	90	80	180
Butylamine	100	NR	NR	NR	NR
Butylene Glycol	100	NR	120	160	180
Butyric Acid	25	120	NR	120	180
Butyric Acid	50	150	NR	100	160
Butyric Acid	70	150	NR	90	160

KEY: NR = Not recommended / LS = Limited service / ♦ = Two layers of Chempruf 10 mil Surface Mat must be used in the surface mat layers / ♣ = Reinforced with two layers of Ureklad™ Reinforcing Mat and one layer of Chempruf 10 mil Surface Mat / ♥ = Aluminum oxide filled, carbon fabric reinforced / ♠ = Polyester fabric reinforced / ● = Use carbon filled system

CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Butyric Acid	100	200	NR	90	120
Calcium Bisulfite	saturated	225	120	NR	180
Calcium Carbonate	saturated	275	160	NR	180
Calcium Chlorate	saturated	180	NR	180	180
Calcium Chloride	saturated	250	140	180	180
Calcium Hydroxide	15	225	140	NR	180
Calcium Hydroxide	25	225	140	NR	180
Calcium Hydroxide	saturated	225	120	NR	180
Calcium Hypochlorite	saturated	NR	80	120	180
Calcium Nitrate	saturated	220	80	180	180
Calcium Sulfate	saturated	250	140	180	180
Caprylic Acid	saturated	250	NR	140	180
Carbon Dioxide, Wet, Acidic	—	220	140	180	180
Carbon Disulfide	100	90	NR	NR	NR
Carbon Monoxide, Gas	—	160	140	180	180
Carbon Tetrachloride	100	225	80	120	180
Carbonic Acid	saturated	250	120	160	110
Castor Oil	100	160	LS	160	160
Chlorine Dioxide	5	NR	NR	150	150
Chlorine Dioxide Process Bleach Towers	—	NR	NR	180	180
Chlorine Dioxide Retention Towers	—	NR	NR	180	180
Chlorine Dioxide, Wet	saturated	NR	NR	180	180
Chlorine Gas, Dry	100	80	90	180	180
Chlorine Gas, Wet	100	NR	90	180	180
Chlorine Water	saturated	NR	80	180	180
Chloroacetic Acid	25	100	NR	110	150
Chloroacetic Acid	50	80	NR	90	100
Chloroacetic Acid	concentrated	80	NR	NR	NR
Chlorobenzene	100	250	LS	NR	80
Chloroform, Liquid	100	100	LS	NR	NR
Chlorosulfonic Acid	100	80	LS	NR	NR
Chlorotoluene (o)	100	250	LS	NR	80
Chromic Acid	5	NR	140	180	150
Chromic Acid	10	NR	120	180	150
Chromic Acid	20	NR	80	150	80
Chromic Acid	30	NR	NR	140	NR
Chromic Acid	40	NR	NR	140	NR
Chromic Acid	50	NR	NR	130	NR
Chromic Acid	saturated	NR	NR	120	NR
Chromic:Nitric:Hydrofluoric Acids	5:2:3	NR	NR	80♣/80♥	NR
Chromic:Phosphoric:Hydrofluoric Acids	7:40:2	NR	NR	100♣/100♥	NR
Chromic:Sulfuric Acids	40:0.4 oz./gal.	NR	NR	150	NR
Chromic:Sulfuric Acids	53:0.53 oz./gal.	NR	NR	140	NR
Chromic:Sulfuric Acids	3:16	NR	NR	150	NR
Chromic:Sulfuric:Hydrofluosilicic Acids (Chrome Plating)	45:0.3:0.5 oz./gal.	NR	NR	110	NR
Citric Acid	all	150	NR	180	160
Coconut Oil	100	180	NR	180	180
Copper Acetate	all	225	NR	180	180
Copper Chloride	all	250	140	180	180
Copper Cyanide	all	180	140	180	180
Copper Nitrate	all	220	140	180	180
Corn Oil	100	150	NR	180	180
Corn Starch	slurry	150	NR	NR/160	NR/160
Cottonseed Oil	100	150	NR	180	180

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Cresylic Acid	100	150	NR	NR	NR
Cyclohexane	100	150	80	140	150
Diallylphthalate	100	210	NR	90	180
Dibutyl Ether	100	170	80	80	150
Dibutyl Phthalate	100	200	NR	90	180
Dichlorobenzene	100	220	NR	NR	100
1,2-Dichloroethane	100	100	NR	NR	NR
Dichloroethylene	100	NR	NR	NR	NR
Dichloromethane	100	LS/90	NR	NR	NR
Dichlorophenol	100	140	NR	NR	NR
Diesel Fuel	100	150	160	170	180
Diethanolamine	100	150	NR	110	120
Diethyl Benzene	100	150	NR	120	150
Diethyl Ether	100	100	LS/80	NR	NR
Diethyl Sulfate	100	225	NR	100	120
Diethylene Glycol	100	225	150	180	180
Diethylene Triamine	100	100	NR	NR	NR
Diisobutyl Phthalate	100	200	NR	90	150
Dimethyl Phthalate	100	225	NR	90	150
Dimethyl Sulfoxide	100	NR	NR	NR	NR
Diocetyl Phthalate	100	210	NR	NR	150
Diphenyl Ether	100	NR	NR	NR	120
Dipropylene Glycol	100	225	150	180	180
Divinyl Benzene	100	NR	NR	90	120
Dodecyl Alcohol	100	275	NR	100	160
Ethanolamine	100	150	NR	90	80
Ethyl Acetate	100	125	80	NR	NR
Ethyl Acrylate	100	80	NR	NR	NR
Ethyl Alcohol	50	170	140	150	150
Ethyl Alcohol	95	170	140	100	100
Ethyl Benzene	100	NR	NR	NR	100
Ethyl Bromide	100	200	NR	NR	NR
Ethyl Chloride	100	220	NR	90	80
Ethyl Ether	100	100	LS/80	NR	NR
Ethyl Sulfate	100	225	NR	100	100
Ethylene Dichloride	100	100	NR	NR	NR
Ethylene Glycol	100	250	150	180	180
Ethylene Glycol Monobutyl Ether	100	NR	80	90	100
Ethylenediamine Tetra Acetic Acid	35	100	NR	110	110
Ethylenediamine Tetra Acetic Acid	100	100	NR	90	100
Ferric Chloride, Nitrate, Sulfate	all	225	150	180	180
Ferrous Chloride, Nitrate, Sulfate	all	225	150	180	180
Fluoboric Acid	10	NR	140●	180♣/180♥	180♣/180♥
Fluoboric Acid	25	NR	120●	160♣/160♥	160♣/160♥
Fluosilicic Acid	10	140♣	140●	180♣/180♥	180♣/180♥
Fluosilicic Acid	25	140♣	120●	180♣/180♥	110♣/110♥
Fluosilicic Acid	35	140♣	100●	160♣/160♥	100♣/100♥
Formaldehyde	25	225	110	180	150
Formaldehyde	37	225	110	150	150
Formaldehyde	50	150	NR	150	150
Formamide	100	LS/100	NR	100	100
Formic Acid	10	225	NR	180	180
Formic Acid	25	160	NR	140	120
Formic Acid	50	120	NR	100	120
Formic Acid	90	100	NR	100	100

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Furfural	5	225	100	90	150
Furfural	10	225	80	90	120
Furfural	50	225	NR	NR	NR
Furfuryl Alcohol	100	225	80	100	80
Glucose	100	150	NR	180	180
Glycerine	100	250	110	180	180
Glycolic Acid (See Hydroxy Acetic Acid)					
Heptane, Normal	100	250	110	180	180
Hexamethylenetetramine	40	NR	NR	NR	120
Hexane	100	160	110	160	160
Hydraulic Fluid, Skydrol 500	100	NR	120	160	180
Hydrazine	70	LS/100	NR	NR	NR
Hydriodic Acid	40	250	110	160	150
Hydrobromic Acid	18	180	110	180	180
Hydrobromic Acid	25	180	100	180	180
Hydrobromic Acid	48	150	80	180	150
Hydrochloric Acid	10	180	160	180	180
Hydrochloric Acid	15	180	160	180	180
Hydrochloric Acid	20	180	150	180	180
Hydrochloric Acid	37	150	140	100	180
Hydrocyanic Acid	saturated	160	120	180	180
Hydrofluoric Acid	10	140♣	120●	90♣/90♥	180♣/180♥
Hydrofluoric Acid	15	140♣	110●	90♣/90♥	100♣/100♥
Hydrofluoric Acid	20	140♣	100●	90♣/90♥	100♣/100♥
Hydrofluoric Acid	25	140♣	80●	90♣/90♥	NR
Hydrofluoric Acid	40	140♣	NR	90♣/90♥	NR
Hydrofluoric:Nitric Acids	5:15	NR	80●	160♣/160♥	100♣/100♥
Hydrofluosilicic Acid	10	140♣	120●	180♣/180♥	180♣/180♥
Hydrofluosilicic Acid	35	140♣	80●	160♣/160♥	100♣/100♥
Hydrogen Bromide, Dry	100	180	NR	180	180
Hydrogen Bromide, Wet	100	180	NR	180	180
Hydrogen Peroxide	5	NR	110	180	180
Hydrogen Peroxide	30	NR	NR	100	150
Hydrogen Peroxide	35	NR	NR	100	110
Hydrogen Peroxide	50	NR	NR	100	NR
Hydrogen Sulfide	all	250	140	180	180
Hydroxyacetic Acid	35	200	NR	140	180
Hydroxyacetic Acid	70	200	NR	100	100
Hypochlorous Acid	20	NR	NR	90	120
Hypochlorous Acid	concentrated	NR	NR	90	90
Isobutyl Alcohol	100	180	120	100	120
Isopropyl Alcohol	all	160	120	90	120
Isopropyl Amine	100	120	NR	90	120
Jet Fuel (JP-4)	100	150	140	160	180
Kerosene	100	275	140	160	180
Lactic Acid	all	225	NR	180	180
Lauryl Alcohol	100	100	80	120	180
Lead Acetate	all	275	80	160	180
Lead Chloride	saturated	225	140	180	180
Lead Nitrate	saturated	225	140	180	180
Levulinic Acid	saturated	225	NR	180	180
Linoleic Acid	100	225	NR	180	180
Linseed Oil	100	275	NR	180	180
Lithium Bromide	all	180	110	180	180
Lithium Carbonate	saturated	225	120	NR	180

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Lithium Chloride	all	275	120	180	180
Lithium Hydroxide	saturated	225	130	NR	180
Lithium Sulfate	all	180	130	180	180
Magnesium Bicarbonate	all	225	140	150	180
Magnesium Bisulfite	all	275	120	160	180
Magnesium Carbonate	saturated	225	120	NR	180
Magnesium Chloride	saturated	220	120	180	180
Magnesium Hydroxide	saturated	225	130	NR	180
Magnesium Nitrate	saturated	220	130	160	180
Magnesium Sulfate	saturated	250	140	160	180
Maleic Acid	all	200	NR	180	180
Maleic Anhydride	100	200	NR	180	180
Mercuric Chloride	saturated	220	140	180	180
Mercurous Chloride	saturated	180	110	180	180
Mercury	100	275	130	180	180
Metal Plating Solutions: Brass Plating, 3% Copper, 1% Zinc & 5.6% Sodium Cyanides, 3% Sodium Carbonate	—	180	140	NR	180
Bronze Plating, 4% Copper, 5% Sodium Cyanides, 3% Sodium Carbonate, 4.5% Rochelle Salts	—	180	140	NR	180
Cadmium Cyanide Bath, 3% Cadmium Oxide, 10% Sodium Cyanides, 1.2% Sodium Hydroxide	—	180	140	NR	180
Chrome Bath, 19% Chromic Acid with Sodium Fluosilicate & Sulfate	—	120	80●	180♣/180♥	100♣/100♥
Copper Cyanide Bath, 10.5% Copper & 14% Sodium Cyanides, 6% Rochelle Salts	—	160	110	NR	180
Copper Matte Dipping Bath, 30% FeCl ₃ , 19% Hydrochloric Acid	—	180	110	180	180
Copper Plating, 45% Cu(BF ₄) ₂ , 19% Copper Sulfate, 8% Sulfuric Acid	—	180	140●	180♣/180♥	180♣/180♥
Gold Plating, 23% Potassium Ferrocyanide with Potassium Gold Cyanide & Sodium Cyanide	—	100	110	NR	180
Iron Plating, 45% FeCl ₂ , 15% CaCl ₂ , 20% FeSO ₄ , 11% (NH ₄) ₂ SO ₄	—	180	120	180	180
Lead Plating, Acid, 8% Lead, with Fluoboric & Boric Acids	—	150	140●	180♣/180♥	180♣/180♥
Lead Plating, Alkaline, 8% Pb (C ₂ H ₃ O) ₂ , Sodium Hydroxide	—	150	NR	NR	180
Nickel Plating, (Nickel Sulfamate, Magnesium Chloride: Boric Acid) pH 3.7	—	180	160	180	180
Nickel Plating, 11% Nickel Sulfate, 2% Nickel Chloride, 1% Boric Acid	—	180	160	180	180
Nickel Plating, 44% Nickel Sulfate, 4% Ammonium Chloride, 4% Boric Acid	—	180	120	180	180
Silver Plating, 4% Silver, 7% Potassium & 5% Sodium Cyanides, 2% Potassium Carbonate	—	180	140	NR	180

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Tin Fluoborate Bath, 18% Stannous Fluoborate, 7% Tin, 9% Fluoboric Acid, 2% Boric Acid	—	180	140●	180♣/180♥	180♣/180♥
Zinc Cyanide Bath, 9% Zinc & 4% Sodium Cyanides, 9% Sodium Hydroxide	—	180	140	NR	180
Methacrylic Acid	10	120	NR	100	100
Methacrylic Acid, Glacial	100	80	NR	90	NR
Methyl Alcohol	100	150	80	100	100
Methyl Chloroform (See 1,1,1-Trichloroethane)					
Methyl Isobutyl Ketone	100	150	NR	NR	NR
Methyl Methacrylate	100	NR	NR	NR	LS/80
Methylene Chloride	100	LS/90	NR	NR	NR
Mineral Oil	100	180	140	180	180
Muriatic Acid (See Hydrochloric Acid)					
Myristic Acid	100	275	NR	180	180
Naphtha	100	180	120	180	180
Naphthalene	100	210	NR	90	180
Nickel Chloride	saturated	220	140	180	180
Nickel Nitrate	saturated	220	140	180	180
Nickel Sulfate	saturated	230	140	180	180
Nitric Acid	2	80	160	180	180
Nitric Acid	5	150	160	180	180
Nitric Acid	10	120	120	180	160
Nitric Acid	20	120	120	140	150
Nitric Acid	35	NR	80	140	100
Nitric Acid	40	NR	80	140	80
Nitric Acid	50	NR	NR	140	NR
Nitric Acid	60	NR	NR	80	LS/80
Nitric:Hydrochloric Acids	10:10	NR	80	140	140
Nitric:Hydrochloric Acids	5:20	NR	80	140	120
Nitric:Hydrochloric:Hydrofluoric Acids	10:77:13	NR	80●	100♣/100♥	80♣/80♥
Nitric:Hydrofluoric:Chromic Acids	2:3:6	NR	NR	80	NR
Nitric:Sulfuric Acids	15:15	NR	NR	180	NR
Nitric Acid Vapor	—	NR	NR	180	180
Nitrobenzene	100	NR	LS/80	NR	100
Nitromethane	100	NR	LS/80	80	NR
Nitrous Acid	10	120	NR	90	90
Nonyl Phenol	100	110	NR	110	120
Octanoic Acid (See Caprylic Acid)					
Oil, Sour Crude	100	150	140	180	180
Oil, Sweet Crude	100	150	140	180	180
Oleic Acid	100	225	NR	180	180
Oleum (Fuming Sulfuric Acid)	—	NR	NR	NR	NR
Olive Oil	100	275	NR	140	180
Oxalic Acid	all	200	NR	180	180
Palmitic Acid	100	225	NR	180	180
Peanut Oil	100	275	NR	180	180
Perchloric Acid	5	NR	NR	85	180
Perchloric Acid	10	NR	NR	85	150
Perchloric Acid	30	NR	NR	85	100
Perchloroethylene	100	250	NR	100	120
Phenol	2	180	NR	180	100
Phenol	5	180	NR	180	100
Phenol	10	180	NR	100	NR

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Phenol	85	90	NR	NR	NR
Phosphoric Acid	85	250	140	180	180
Phosphoric Acid, Super	100	180	80	180	180
Phosphorous Oxychloride	100	160	NR	80	NR
Phosphorous Trichloride	100	170	NR	NR	NR
Phthalic Acid	100	225	NR	100	180
Phthalic Anhydride	100	225	NR	100	180
Picric Acid (Alcoholic)	10	165	NR	100	100
Polyphosphoric Acid	105	180	NR	180	180
Potassium Aluminum Sulfate	all	200	140	180	180
Potassium Bicarbonate	10	160	120	90	150
Potassium Bicarbonate	50	220	120	NR	180
Potassium Bromide	all	200	120	NR	120
Potassium Carbonate	10	200	140●	NR	150♣/150♥
Potassium Carbonate	25	200	120●	NR	150♣/150♥
Potassium Carbonate	50	200	120●	NR	180♣/180♥
Potassium Chloride	all	250	160	180	180
Potassium Dichromate	all	NR	NR	180	180
Potassium Ferricyanide	saturated	180	140	180	180
Potassium Ferrocyanide	saturated	200	140	180	180
Potassium Fluoride	saturated	180	120●	150♣/150♥	150♣/150♥
Potassium Hydroxide	10	200	130●	NR	150♣/150♥
Potassium Hydroxide	25	200	120●	NR	150♣/150♥
Potassium Hydroxide	40	200	110●	NR	180♣/180♥
Potassium Hydroxide	50	150	100●	NR	180♣/180♥
Potassium Nitrate	all	250	160	180	180
Potassium Permanganate	all	180	120	150	180
Potassium Persulfate	all	225	110	90	180
Potassium Pyrophosphate	60	150	100	100	150
Potassium Sulfate	all	250	160	180	180
Propionic Acid	20	220	NR	NR	180
Propionic Acid	50	200	NR	NR	180
Propionic Acid	100	160	NR	NR	100
Propylene Glycol	all	250	160	180	180
Pulp, Bleached	—	180	NR	180	180
Pulp Stock, Chlorinated, pH 4.5	—	180	NR	180	180
Pyridine	100	NR	NR	NR	NR
Selenious Acid	all	180	140	180	180
Septic System	—	90	NR	90	90
Sewage, Anaerobic	—	90	NR	90	90
Sewage, Municipal, Treated & Untreated	—	90	NR	90	90
Sewage Treatment	—	90	NR	90	90
Sewage Treatment, Fumes	—	90	NR	90	90
Silver Cyanide	saturated	180	120	160	180
Silver Nitrate	all	275	140	180	180
Sodium Acetate	all	225	80	180	180
Sodium Aluminate	all	150	120	NR	120
Sodium Benzoate	100	180	80	160	180
Sodium Bicarbonate	10	225	120	140	180
Sodium Bicarbonate	saturated	225	120	140	180
Sodium Bisulfate	all	275	140	180	180
Sodium Bisulfite	saturated	275	140	180	180
Sodium Borate	saturated	150	140	170	180
Sodium Bromide	all	180	120	180	180
Sodium Carbonate	10	160	140●	NR	180♣/180♥

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Sodium Carbonate	25	160	120●	NR	180♣/180♥
Sodium Carbonate	32	220	120●	NR	180♣/180♥
Sodium Carbonate	35	220	120●	NR	180♣/180♥
Sodium Carbonate	saturated	225	120●	NR	180♣/180♥
Sodium Chlorate	50	180	NR	180	180
Sodium Chlorate	100	180	NR	180	180
Sodium Chloride	saturated	275	160	180	160
Sodium Chlorite	10	150	NR	180	150
Sodium Chlorite	50	100	NR	150	120
Sodium Chromate	saturated	150	120	180	160
Sodium Cyanide	10	225	120	NR	180
Sodium Cyanide	15	225	120	NR	180
Sodium Cyanide	50	225	100	NR	180
Sodium Dichromate	saturated	180	120	180	180
Sodium Ferricyanide	saturated	180	140	180	180
Sodium Ferrocyanide	saturated	180	140	180	180
Sodium Fluoride	all	180	120●	NR	180♣/180♥
Sodium Fluorosilicate	all	120	120●	NR	120♣/120♥
Sodium Hexametaphosphate	10	150	120	NR	100
Sodium Hydrosulfide	all	140	120	160	180
Sodium Hydroxide	1	150	160●	NR	150♣/150♥
Sodium Hydroxide	5	150	140●	NR	150♣/150♥
Sodium Hydroxide	10	150	140●	NR	150♣/150♥
Sodium Hydroxide	15	150	120●	NR	150♣/150♥
Sodium Hydroxide	25	212	120●	NR	180♣/180♥
Sodium Hydroxide	50	212	120●	NR	180♣/180♥
Sodium Hypochlorite (Stable)	2	NR	80	125	180
Sodium Hypochlorite (Stable)	5	180	80	125	180
Sodium Hypochlorite (Stable)	10	180	NR	120	180
Sodium Hypochlorite (Stable)	15	NR	NR	110	180
Sodium Lauryl Sulfate	100	180	80	100	160
Sodium Phosphate Monobasic	saturated	150	140	NR	180
Sodium Nitrate	saturated	225	160	180	180
Sodium Nitrite	saturated	180	160	180	180
Sodium Persulfate	20	180	NR	120	130
Sodium Silicate	all	160	120	NR	180
Sodium Sulfate	all	250	160	180	180
Sodium Sulfide	10	220	120	NR	180
Sodium Sulfide	saturated	220	120	NR	180
Sodium Sulfite	all	275	140	180	180
Sodium Tetraborate	saturated	200	160	180	180
Sodium Thiocyanate	all	180	120	NR	180
Sodium Thiosulfate	all	275	120	NR	180
Sodium Tripolyphosphate	saturated	180	160	125	180
Soya Oil	100	150	NR	180	180
Stannic Chloride	all	225	160	180	180
Stannous Chloride	all	180	160	180	180
Styrene	100	80	NR	NR	120
Sugar, Beet, Liquor	—	180	NR	160	160
Sugar, Cane, Liquor	—	180	NR	160	160
Sulfamic Acid	25	225	140	160	150
Sulfanilic Acid	all	180	80	160	180
Sulfur Chloride	100	225	NR	NR	NR
Sulfur Dioxide, Dry or Wet	—	250	NR	180	180
Sulfuric Acid	25	200	160	180	180

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CHEMICAL ENVIRONMENT	CONCENTRATION %	CHEMPRUF 2101 / 2102	CHEMPRUF 2211	CHEMPRUF 2300 / 2301	CHEMPRUF 2410 / 2411
Sulfuric Acid	50	200	160	180	180
Sulfuric Acid	70	180	120	180	180
Sulfuric Acid	75	100	110	175	120
Sulfuric Acid	80	NR	110	150	NR
Sulfuric Acid	93	NR	80	NR	NR
Sulfuric Acid	98	NR	80	NR	NR
Sulfuric:Chromic Acids	20:20	NR	NR	180	NR
Sulfuric:Chromic Acids	32:20	NR	NR	90	NR
Sulfuric:Nitric Acids, 50:50	30	NR	NR	180	NR
Sulfuric Acid:Sodium Dichromate	30:3	NR	NR	150	NR
Sulfurous Acid	10	200	NR	150	120
Sulfuryl Chloride	100	NR	NR	NR	NR
Tannic Acid	saturated	275	NR	180	180
Tartaric Acid	saturated	250	NR	180	180
Tetrapotassium Pyrophosphate	60	150	80	NR	150
Tetrasodium Pyrophosphate	60	150	80	NR	150
Thioglycolic Acid	10	NR	NR	120	100
Thionyl Chloride	100	NR	NR	NR	NR
Toluene	100	225	80	90	120
Toluene Diisocyanate	100	NR	NR	150	NR
Toluene Sulfonic Acid	65	100	NR	100	180
Toluene Sulfonic Acid	100	180	NR	100	180
Tributyl Phosphate	100	100	NR	NR	140
Trichloroacetic Acid	50	80	NR	80	180
Trichlorobenzene	100	275	NR	NR	NR
1,1,1-Trichloroethane	100	120	120	80	120
Trichloroethylene	100	180	NR	NR	NR
Tricresyl Phosphate	100	160	NR	NR	160
Triethanolamine	100	NR	NR	NR	120
Triethylamine	100	150	NR	NR	120
Triethylene Glycol	100	100	80	180	180
Triphenyl Phosphite	100	100	NR	120	100
Trisodium Phosphate	25	150	120	NR	180
Trisodium Phosphate	50	180	120	NR	180
Turpentine, Pure Gum	100	100	100	120	180
Urea	50	225	110	120	150
Vinegar	—	225	LS/80	180	180
Vinyl Acetate	100	NR	NR	NR	NR
Vinyl Toluene	100	NR	NR	80	120
Water, Deionized	—	212	160	180	180
Water, Demineralized	—	212	160	180	180
Water, Distilled	—	212	160	180	180
Water, Sea	—	212	160	180	180
Whey	—	180	NR	150	150
White Liquor (Pulp Mill)	—	150	NR	NR	180
Xylene	100	275	80	100	120
Zinc Chloride	saturated	275	160	180	180
Zinc Fluoborate	—	180	140●	180♣/180♥	180♣/180♥
Zinc Nitrate	all	250	140	180	180
Zinc Sulfate	all	250	160	180	180

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