



Thermal Process Equipment Specialists

BRAUDE SELF PRIMING CHEMICAL TRANSFER PUMP CHEMICAL RESISTANCE CHART (FITTED WITH NON METALLIC SEAL)

The following table was compiled from information gathered from many sources and is intended as a guide for selecting Braude pumps from a chemical resistance stand point only. It does not imply any guarantee of service since many factors outside the control of E. Braude (London) Ltd may affect the suitability of materials in a particular situation.

Although the table may indicate satisfactory service for individual chemicals, combinations may have adverse effects upon pump materials. For any application not indicated in the table or any questionable uses, please consult the factory.

Unless otherwise indicated a maximum pumping temperature of 90°C can be tolerated.

S – Satisfactory within limited indicated. N – Not Recommended.

Liquid and formula	Code	Liquid and formula	Code	Liquid and formula	Code
Acetone – CH ₃ COCH ₃	N	Brine – NaCl	S	Cupric Chloride (to 75°F) – CuCl ₂	S
Acetic Acid (10-100%) – CH ₃ COOH	S	Bromine Water – Br ₂ • H ₂ O	S	Detergents (to 10%)	S
Alcohol	S	Butyl Acetate – CH ₃ COOCH ₂ CH ₂ CH ₂ CH ₃	N	Diethanolamine – (HOCH ₂ CH ₂) ₂ NH	S
Aluminum Hydroxide – Al(OH) ₃	S	Butyl Acrylate – CH ₂ :CHCOOC ₄ H ₉	N	Epsom Salts (Magnesium Sulphate)- Mg SO ₄ • 7H ₂ O	S
Aluminum Chloride - AlCl ₃	S	Butyl Alcohol – CH ₃ (CH ₂) ₂ CH ₂ OH	N	Ether – (C ₂ H ₅) ₂ O	N
Aluminum Fluoride – AlF ₃	N	Calcium Carbonate – CaCO ₃	S	Ethanol – C ₂ H ₅ OH	S
Aluminum Potassium Sulphate – AlK(SO ₄) ₂ • 12H ₂ O	S	Calcium Chloride – CaCl ₂	S	Ethyl Acetate – CH ₂ COOC ₂ H ₅	N
Ammonium Bicarbonate (Aqueous) – NH ₄ HCO ₃	S	Calcium Hypochlorite (to 16%, 100°F) – Ca(OCl) ₂	S	Ethyl Acrylate – CH ₃ CHCOOC ₂ H ₅	N
Ammonium Chloride – NH ₄ Cl	S	Calcium Hydroxide – Ca(OH) ₂	S	Ethyl Chloride – C ₂ H ₅ Cl	N
Ammonium Fluoride – NH ₄ F	N	Calcium Nitrate – Ca(NO ₃) ₂	S	Ethylene Dichloride 0 ClCH ₂ CH ₂ Cl	N
Ammonium Hydroxide (to 10%) – NH ₄ OH	S	Calcium Phosphate (to 50%) – CaH ₄ (PO ₄) ₂ • H ₂ O	S	Ethylene Glycol (to 78°F) – CH ₂ OHCH ₂ OH	S
Ammonium Metaphosphate – (NH ₄) ₂ HPO ₄	S	Calcium Sulphate - CaSO ₄ • 2H ₂ O	S	Ferric Chloride - FeCl ₃	S
Ammonium Nitrate (to 60%) – NH ₄ NO ₃	S	Calcium Sulphite – CaSO ₃ . 2H ₂ O	S	Ferric Nitrate – Fe(NO ₃) ₃ • 9H ₂ O	S
Ammonium PerSulphate – (NH ₄) ₂ S ₂ O ₈	S	Carbon Tetrachloride – CCl ₄	N	Ferric Sulphate – Fe ₂ (SO ₄) ₃	S
Ammonium Phosphate – NH ₄ H ₂ PO ₄	S	Carbonic Acid –H ₂ CO ₃	S	Ferrous Sulphate – FeSO ₄ • 7H ₂ O	S
Ammonium Sulphate (Aqueous) – (NH ₄) ₂ SO ₄	S	Caustic Lye (30% to 108°F), (50% to 75°F) – NaOH	S	Fluosilicic Acid – H ₂ SiF ₆	S 2
Amyl Acetate – CH ₃ COOC ₃ H ₁₁	N	Chlorinated Water - Cl ₂ • H ₂ O	S	Formic Acid (to 10%) – HCOOH	S
Amyl Alcohol – C ₅ H ₁₁ OH	N	Chloric Acid – HClO ₃ • 7H ₂ O	S	Formaldehyde – HCHO	S
Aqua Ammonia (to 10%) – NH ₄ OH	S	Chloroacetic Acid – CH ₂ ClCOOH	S	Freon	N
Aqua Regia (to 75°F) – HNO ₃ And HCl	S	Chlorobenzene – C ₆ H ₅ Cl	N	Fuel Oil	N
Aromatics	N	Chloroform – CHCl ₃		Gasoline	N
Barium Carbonate – BaCO ₃	S	Chromic Acid (3% Max to 75°F) – H ₂ CrO ₄ (Above 3%)	N	Glycerine – C ₃ H ₅ (OH) ₃	S
Barium Chloride (Aqueous) (to 20%) – BaCl ₂ • 2H ₂ O	S	Chromium Potassium Sulphate – CrK(SO ₄ • 12H ₂ O	S	Halogenated Hydrocarbons	N
Barium Hydroxide – Ba(OH) ₂	S	Chrome Alum – CrK(SO ₄) ₂ . 12H ₂ O	S	Heptane – CH ₃ (CH ₂) ₅ CH ₃	N
Barium Sulphate – BaSO ₄	S	Citric Acid (to 10%) – HOOCCH ₂ C(OH)(COOH)CH ₂ COOH • H ₂ O	S	Hexane – CH ₃ (CH ₂) ₄ CH ₃	N
Barium Sulphide – BaS	S	Copper Chloride (to 75°F) – CuCl ₂	S	Hydrobromic Acid (to 20%) – HBr	S
Benzene – C ₆ H ₆	N	Copper Cyanide – Cu(CN) ₂	S	Hydrochloric Acid (to 175°F) – HCl	S
Benzyl Alcohol – C ₆ H ₅ CH ₂ OH	N	Copper Nitrate – Cu(NO ₃) ₂ • 3H ₂ O	S	Hydrofluoric Acid (to 20% 80°F) – HF	S 2
Bismuth Carbonate – (BiO) ₂ CO ₃	S	Copper Sulphate - CuSO ₄ • 5H ₂ O	S	Hydrogen Peroxide (to 30%) – H ₂ O ₂	S
Borax Solution – Na ₂ B ₄ O ₇ . 10H ₂ O	S			Hydrofluosilicic Acid – H ₂ SiF ₆	S 2
Boric Acid (to 50%) – H ₃ BO ₃	S			Isopropyl Alcohol – (CH ₃) ₂ CHOH	S



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Kerosene	N	Potassium Acetate – $KC_2H_3O_2$	S	Sodium Sulphate – Na_2SO_4	S
Ketones	N	Potassium Bicarbonate – $KHCO_3$	S	Sodium Sulphide (to 30%) – Na_2SO_3	S
Lacquer Thinner	N	Potassium Bromide – KBr	S	Sodium Tetraborate – $Na_2B_4O_7 \cdot 10H_2O$	S
Lactic Acid – $CH_3CHOHCOOH$	S	Potassium Carbonate (to 40%) – K_2CO_3	S	Sodium Sulphide (to 30%) – Na_2SO_3	S
Lead Acetate – $Pb(C_2H_3O_2)_2 \cdot 3H_2O$	S	Potassium Chlorate – $KClO_3$	S	Sodium Tetraborate – $Na_2B_4O_7 \cdot 10H_2O$	S
Lemon Oil	N	Potassium Chloride (Aqueous) – KCl	S	Sodium ThioSulphate – $Na_2S_2O_3 \cdot 5H_2O$	S
Lestoil	N	Potassium Cyanides (Aqueous) – KCN	S	Stannic Chloride – $SnCl_4$	S
Linseed Oil	N	Potassium Dichromate (to 40%) – $K_2Cr_2O_7$	S	Stannous Chloride – $SnCl_2$	S
Lithium Bromide (to 62%) – $LiBr$	S	Potassium Ferricyanide – $K_2Fe(CN)_6$	S	Sulphuric Acid (60% to 80°F)(10% to 130°F) – H_2SO_4 over 90% 80° max	S S 1
Lube Oils	N	Potassium Ferrocyanide – $K_4Fe(CN)_6 \cdot 3H_2O$	S	Sulphurous Acid – H_2SO_3	S
Lye (30% to 180°F) (50% to 180°F) – $NaOH$ or KOH	S	Potassium Fluoride – KF	N	Tartaric Acid (1%) – $HOOC(CHOH)_2COOH$	S
Magnesium Chloride – $MgCl_2$	S	Potassium Hydroxide (30% to 180°F) (50% to 75°F) – KOH	S	Tannic Acid (to 10%) – $C_{76}H_{52}O_{46}$	S
Magnesium Hydroxide – $Mg(OH)_2$	S	Potassium Hypochlorite – $KOCl$	S	Tetra Hydro Furane 0	N
Magnesium Sulphate (Epsom Salts) – $MgSO_4 \cdot 7H_2O$	S	Potassium Nitrate – KNO_3	S	$CH_2CH_2CH_2CH_2O$	N
Mercuric Chloride – $HgCl_2$	S	Potassium Perchlorate (to 10%) – $KClO_4$	S	Titanium Tetrachloride – $TiCl_4$	N
Mercuric Cyanide – $Hg(CN)_2$	S	Potassium Permanganate (to 20%) – $KMnO_4$	S	Toluene – $CH_3C_6H_5$	N
Methanol – CH_3OH	S	Potassium Sulphate (Aqueous) – K_2SO_4	S	Tri-Sodium Phosphate – $Na_3PO_4 \cdot 12H_2O$	S
Methyl Acrylate – $CH_2=CHCOOCH_3$	N	Potassium Sulphide – K_2S	S	Tri-iso Octyl Phosphate – $(C_8H_{17})_3PO_4$	N
Methyl Chloride – CH_3Cl	N	Potassium Sulphite – $K_2SO_3 \cdot 2H_2O$	S	Trichloroethylene – $CHCl:CCl_2$	N
Methyl Ethyl Ketone – $CH_3COC_2H_5$	N	Propionic Dichloride - $CH_3CHClCH_2Cl$	S	Trichloroactetic Acid (to 10%) – CCl_3COOH	S
Mineral Oil	N	Sal Ammoniac – NH_4Cl	S	Turpentine	N
Muriatic Acid (to 175°F) – HCl	S	Salicylic Acid – $C_6H_4(OH)(COOH)$	S	Vegetable Oils	S
Naptha	N	Sea Water	S	Vinegar	S
Naphthalene – $C_{10}H_8$	N	Silver Bromide – $AgBr$	S	Vinyl Acetate – $CH_3COOCH:CH_2$	S
Nickel Chloride – $NiCl_2$	S	Silver Chloride – $AgCl$	S	Water (Deionized)	S
Nickel Nitrate – $Ni(NO_3)_2 \cdot 6H_2O$	S	Sodium Acetate – $NaC_2H_3O_2$	S	Whiskey	S
Nickel Sulphate – $NiSO_4$	S	Sodium Bicarbonate (Aqueous) – $NaHCO_3$	S	Wine	S
Nitric Acid (10% to 185°F) (30% to 130°F)	S	Sodium Bisulphate – $NaHSO_4$	S	Xylene – $C_6H_4(CH_3)_2$	N
HNO_3 Above 30%	N	Sodium Bisulphite – $NaHSO_3$	S	Zinc Chloride – $ZnCl_2$ (crystallizes)	S
Nitrobenzene – $C_6H_5NO_2$	N	Sodium Borate – $Na_2B_4O_7 \cdot 10H_2O$	S	Zinc Cyanide – $Zn(CN)_2$	S
Nitroethane - $CH_3CH_2NO_2$	N	Sodium Chlorate (to 180°F) – $NaClO_3$	S	Zinc Sulphate – $ZnSO_4 \cdot 7H_2O$	S
Nitrous Oxide – N_2O	S	Sodium Chlorite (to 20%) – $NaClO_2$	S		
Oleic Acid – $CH_3(CH_2)_7CH:CH(CH_2)_7COOH$	N	Sodium Cyanide – $NaCN$	S		
Oxalic Acid (to 175°F) – $HOOC(CHOH)_2COOH$	S	Sodium Ferricyanide – $Na_3Fe(CN)_6 \cdot H_2O$	S		
Phosphoric Acid (60% to 80°F) (30% to 180°F) – H_3PO_4	S	Sodium Ferrocyanide – $Na_4Fe(CN)_6 \cdot 10H_2O$	S		
Photographic Developers	S	Sodium Hydroxide (30% to 180°F) (50% to 75°F) – $NaOH$	S		
Phthalic Acid (to 100°F) – $C_6H_4(CO_2H)_2$	S	Sodium Hypochlorite (to 16%, 100°F) – $NaOCl$	S		
Potash Alum (Aqueous) _ $AlK(SO_4)_2 \cdot 12H_2O$	S	Sodium Silicate – $2Na_2O SiO_2$	S		
Phthalic Anhydride – $C_6H_4(CO)_2O$	N				

Note: All the above relate to pumps supplied with Hastelloy C Seals only. The following special instructions apply:

1. PTFE Rotating face to replace carbon in the seal
2. PTFE or Silicon Carbide to replace ceramic in the seal

Other seals available are:- Stainless Steel – SS spring with nitrile rubbers. To be used for weak solutions and to be treated as a disposable seal.



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