

Impervio POLARIS

NON-CORRODABLE ELECTRIC IMMERSION HEATER
MODULAR

NON CORRODABLE ELECTRIC IMMERSION HEATER

CHEMICAL RESISTANCE CHART

The following information is intended as a guide for the use of the Polaris Electric Heater in various chemical solutions. It is based on information gathered from various sources which are believed to be reliable and is intended for use by persons having technical skill and at their own discretion and risk. We make no warranties expressed or implied and can assume no liability in connection with the use of this information since various factors

outside our control may affect suitability of materials in particular situations. Although the table may indicate satisfactory service for individual chemicals, certain combinations may have adverse effects upon the heater. For chemical solutions not indicated in the table or any questionable use, always consult the manufacturer or your own chemical supplier. Where stated, concentrations are w/w.

THE FOLLOWING CHEMICAL SOLUTIONS ARE SATISFACTORY WITHIN THE LIMITS SHOWN AND UNLESS OTHERWISE INDICATED A MAXIMUM OPERATING TEMPERATURE OF 100°C CAN BE TOLERATED.

SOLUTION	CONCENTRATION	SOLUTION	CONCENTRATION	SOLUTION	CONCENTRATION
Acetic Acid – CH ₃ COOH	97% TO 80°C 80% TO 100°C	Gold/Silver Plating Solutions		Silver/Gold Plating Solutions	
Aluminium		Hydrochloric Acid – HCl	30% at 60°C 10% at 100°C	Sodium	
Chloride – AlCl ₃	Saturated	Hydrofluoric Acid – HF	20% at 60°C 60% at 40°C	Carbonate – Na ₂ CO ₃	Saturated
Fluoride – AlF ₃	Saturated	Hydrogen Peroxide – H ₂ O ₂	30% at 75°C	Chlorate – NaClO ₃	50%
Nitrate – Al(NO ₃) ₃	Saturated	Lead Fluoroborate – Pb(BF ₄) ₂	Saturated	Chloride – NaCl	Saturated
Sulphate – Al ₂ (SO ₄) ₃	Saturated	Magnesium		Cyanide – NaCN	Saturated
Ammonium		Chloride – MgCl ₂	Saturated	Fluoride – NaF	Saturated to 60°C
Fluoride – NH ₄ F	25% to 60°C	Nitrate – Mg(NO ₃) ₂	Saturated	Hydroxide – NaOH	50% to 50°C 10% to 100°C
Chloride – NH ₄ Cl	Saturated	Sulphate – MgSO ₄	Saturated	Nitrate – NaNO ₃	50%
Hydroxide – NH ₄ OH	50% to 50°C 10% to 100°C	Mercury		Nitrite – NaNO ₂	50%
nitrate – NH ₄ NO ₃	Saturated	Chloride – HgCl ₂	Saturated	Sulphate – Na ₂ SO ₄	Saturated
sulphate – (NH ₄) ₂ SO ₄	Saturated	Nitrate – Hg(NO ₃) ₂	Saturated	Sulphate – NaSO ₃	Saturated
Barium		Nickel		Stannic Chloride – SnCl ₄	Saturated
Chloride – BaCl ₂	Saturated	Chloride – NiCl ₂	Saturated	Stannous	
Boric Acid – H ₃ BO ₃	Saturated	Nitrate – Ni(NO ₃) ₂	Saturated	Chloride – SnCl ₂	Saturated
Cadmium fluoroborate – Cd(BF ₄) ₂	Saturated	Sulphate – NiSO ₄	Saturated	Fluoroborate – Sn(BF ₄) ₂	Saturated
Calcium		Nitric Acid – HNO ₃	60% at 25°C 20% at 60°C 10% at 100°C	Sulphate – SnSO ₄	Saturated
Chloride – CaCl ₂	Saturated	Phosphoric Ortho-Acid – H ₃ PO ₄	85%	Sulphuric Acid – H ₂ SO ₄	75%
Nitrate – Ca(NO ₃) ₂	50%	Plating Solutions – Commercial		Zinc	
Chromic Acid – CrO ₃ +H ₂ O	50% to 60°C	Refer to you chemical supplier		Chloride – ZnCl ₂	Saturated
Copper		(NB Certain solutions eg electroless		Nitrate – Zn(NO ₃) ₂	50%
Chloride – CuCl ₂	Saturated	Ni and Cu will necessitate regular acid		Phosphate – Zn ₃ (PO ₄) ₂	Saturated**
Cyanide – CuCN ₂	Saturated	Stripping).		Sulphate – ZnSO ₄	Saturated
Fluoride – CuF ₂	Saturated	Potassium			
Nitrate (Cu(NO ₃) ₂) ₂	Saturated	Bromide – KBr	Saturated		
Sulphate – CuSO ₄	Saturated	Carbonate – K ₂ CO ₃	50%		
Deionised Water		Chlorate – KClO ₃	Saturated		
Electroless Copper		Chloride – KCl	Saturated		
Electroless Nickel		Cyanide – KCN	Saturated		
Ferric		Dichromate – K ₂ Cr ₂ O ₇	40%		
Chloride – FeCl ₃	Saturated	Ferrocyanide – K ₄ Fe(CN) ₆	Saturated		
Nitrate – Fe(NO ₃) ₃	Saturated	Hydroxide – KOH	50% to 50°C		
Phosphate – FePO ₄	Saturated	Nitrate – KNO ₃	Saturated		
Sulphate – Fe ₂ (SO ₄) ₃	Saturated	Permanganate – KMnO ₄	20% **		
Ferrous		Sulphate – K ₂ SO ₄	Saturated		
Chloride – FeCl ₂	Saturated	Silver			
Phosphate – Fe ₃ (PO ₄) ₂	Saturated	Cyanide – AgCN	Saturated		
Sulphate – FeSO ₄	Saturated	Nitrate – AgNO ₃	Saturated		
Fluoroboric Acid – HBF ₄	100%				
Fluorosilicic Acid – H ₂ SiF ₆	50%				

* In certain solutions such as chromic/sulphuric mixes or similar, the braided sleeving on the lead assembly may suffer some deterioration. This is not detrimental to the efficient operation of the heater.

** In highly caustic permanganate solutions the core of the standard Polaris may suffer some deterioration. Please ask your Polaris stockist or the manufacturer for details of the "Polaris PS" which should be used in such solutions.

*** For Zinc phosphate and other solutions which are likely to create salt deposits, please see maintenance instructions or contact the manufacturer.

For use in Organic media solvents refer to manufacturer.

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