

ALPHA[®] AQUALINE 6000

Halogen Free, Halide Free, Water Soluble Cored Wire Solder

DESCRIPTION

ALPHA AQUALINE 6000 is a QPL-approved (Type WSF-0 polyglycol-free flux), halide-free, water soluble flux cored solder. Its post soldering residues are extremely water soluble and can be easily cleaned with hot water. Due to the exceptional wetting and cleaning characteristics of **ALPHA AQUALINE 6000**, it is recommended for use in a broad range of applications, including both commercial and military.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Excellent wetting characteristics. Ease of solderability.
- Extremely cleanable post-soldering residues. High ionic cleanliness and long-term reliability.
- Halide-free. High reliability assemblies.
- QPL-Approved per QQ-S-571, Type WSF-0. Provides military assemblers the option to use a water soluble process.

PRODUCT INFORMATION

Standard	Alloy Designation	Melting or Solidus / Liquidus Temp °C	Flux Amount
J-STD-006C	SAC305 (Sn96.5/Ag3.0/Cu0.5)	217 - 221	2.2% & 3.3%
J-STD-006C	Sn63/Pb37	183	2.2% & 3.3%

* **ALPHA AQUALINE 6000** may also available in other or special alloys and flux amounts on request.

APPLICATION GUIDELINES

A soldered joint is formed by heating the parts to be soldered to a temperature in excess of the melting point of the alloy to be used – in hand soldering this is how a soldering iron is used. By feeding the cored wire onto the parts, the flux is able to flow and remove oxidized metal, while the solder creates a thin inter-metallic bond which becomes the solder joint.

Note the following tips:

- Use a soldering iron tip size and form to suit the operation: small tips for soldering large components may prevent the formation of a joint or slow the process down.
- Select a solder wire diameter to suit both the soldering iron tip and the parts/components to be soldered.
- Soldering iron systems should provide sufficient heat to satisfy the requirements of the points above.
- A typical solder tip temperature would be between 120 °C and 160 °C above the liquidus temperature of the alloy. The ideal temperature to use is dependent on how thermally demanding the assembly is.
- Cored solder wires can be provided in different grades of alloy so always ensures that you have selected the right grade for the application.
- Do not overheat as this causes an increase in the depth of the inter-metallic layer, which in turn weakens the joint.

If you choose to use a liquid rework flux, ALPHA RMA870 Series Water Soluble Resin Fluxes are recommended.

The post soldering residues of ALPHA AQUALINE 6000 are fully soluble in water. Even after several days, flux residues remain water soluble and no corrosion products are visible. Cold water soaking can be used; however, hot water will greatly accelerate the cleaning process. Additionally, ALPHA AQUALINE 6000 flux residues can also be removed in conventional solvent vapor cleaning processes and semi-aqueous processes.

Water effluent is neutral which eliminates the need for pH adjustment prior to disposal. However, local regulations may require pre-treatment to remove dissolved lead from water effluent.

TECHNICAL DATA

Physical Properties	Typical Values
Flux Type	Organic acid, water-soluble (WSF-0)
Halide Content	None
Polyglycols	None
pH (5% aqueous solution)	2.5
Surface Insulation Resistance ¹	1.2 x 10 ⁹ ohms
Classification	ORHO J-STD-004
Shelf Life/ Storage Temperature	36 months / 10 °C 43 °C

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base**

STORAGE

ALPHA Cored Solder Wires should be stored in dry conditions and within a temperature range of 0 to 40°C. Alpha guarantees the product shelf life for three years from the date of manufacture when stored in the recommended conditions.

CONTACT INFORMATION

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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