

ALPHA[®] PURE CORE

WATER SOLUBLE, FLUX CORED, WIRE SOLDER

DESCRIPTION

ALPHA Pure Core is an organic activated, water soluble flux cored solder that meets the Corrosion Resistance Test and Surface Insulation Resistance requirements per IPC-TM-650 2.6.3.3.

ALPHA Pure Core contains a water soluble resin derivative of rosin and a buffered organic activation system. This efficient flux produces bright, shiny solder connections, even if cleaning is delayed for several days.

FEATURES & BENEFITS

ALPHA Pure Core is recommended for use in any electronic hand soldering application where high fluxing strength and the ability to clean with water are desired. It has low smoke and odor characteristics which make it particularly suited for touch-up and repair of printed circuit boards where personnel are in close contact with the product.

The very effective activator system enables the flux to penetrate even heavily tarnished surfaces among the following materials:

Beryllium Copper	Copper	Solder (Plate)
Brass	Lead	Solder (Hot Dip)
Bronze	Nickel (Plate)	Terne (Plate)
Cadmium (Plate)	Silver	Tin (Hot Dip)
		Tin (Plate)

PRODUCT INFORMATION

Standard	Alloy Designation	Melting or Solidus / Liquidus Temp °C	Flux Amount
Proprietary	SACX Plus [®] 0307	217 – 228	2.2% & 3.3%
J-STD-006B	SAC305 (Sn96.5/Ag3.0/Ag0.5)	217 – 221	2.2% & 3.3%
J-STD-006B	Sn63/Pb37	183	2.2% & 3.3%
J-STD-006B	Sn62/Pb36/Ag2	179	2.2% & 3.3%

* ALPHA Pure Core may also be available in other alloys and flux amounts on request.

APPLICATION

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.
- Cored solder wires can be provided in different grades of alloy so always ensures that you have selected the right grade for the application.

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an Alent plc Company

ALPHA Global Headquarters
300 Atrium Drive, Somerset, NJ 08873 USA • 1-800-367-5460 • www.alpha.alent.com

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- 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 870 Series Water Soluble Resin Fluxes are recommended.

The post soldering residues of ALPHA Pure Core 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 Pure Core 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

Properties	Typical Values
Physical State	Waxy-Solid
Flux Type	Organic, water-soluble resin
Water Extract Resistivity	> 20,000 ohm-cm
Typical pH (5% H ₂ O solution)	6.8 ± 0.5
Residues	Water soluble, biodegradable
Classification	ORM1 per IPC J-STD-004B
	2.1.2 per ISO 12224

SAFETY

Observe standard precautions for handling and use. Use in well ventilated areas. DO NOT SMOKE during use.

ALPHA Pure Core Cored Wire is not considered toxic. However, its use in typical soldering applications will generate a small amount of decomposition and fumes. These fumes should be adequately exhausted / vented for operator safety and comfort.

The effluent for ALPHA Pure Core post solder cleaning systems should be analyzed for dissolved lead.

STORAGE

ALPHA Flux Cored Wire Solders should be stored in dry conditions and within a temperature range of 0°C to 40°C. When stored under these conditions the product shelf life is indefinite. However, Alpha guarantees the product shelf life for three years from the date of manufacture when stored in dry conditions and within 0°C to 40°C.