

ALPHA[®] SMT

No Clean Cored Solder Wire

DESCRIPTION

ALPHA SMT is an activated rosin cored solder wire developed for general hand soldering applications.

The flux core is halide free and due to the superior performance of the **ALPHA SMT** product, a lower flux content can be specified. This improves further residue appearance by reducing the quantity of flux residue on the joint.

ALPHA SMT leaves post soldering residues that are hard and which can be safely left without the need to remove them. If removal is required, then semi-aqueous or aqueous systems can be used effectively.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Halide Free
- High performance flux – allow low flux content
- Minimal non-corrosive, clear and safe residues
- Fast wetting
- Good spread characteristics
- Pleasant pine smell
- Provides good joint appearance and low levels of flux residue

PRODUCT INFORMATION

Standard	Alloy Designation	Melting or Solidus / Liquidus Temp °C	Flux Amount
ISO 9453	S-Sn63Pb37	183	0.5% & 1.1%
ISO 9453	S-Sn60Pb40	183 to 190	0.5% % 1.1%
Lead Free	SAC305	217	1.1% & 2.2%
Lead Free	SAC405	217 to 219	1.1% & 2.2%
Lead Free	SACX0307	217 to 228	1.1% & 2.2%

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

APPLICATION GUIDELINES

ALPHA SMT is suitable for use in any commercial no-clean hand soldering application that specifies compliance to J-STD-004 – ROM0.

It is suited for use in applications where good activity is required for tarnish removal but low quantity of flux residue is desirable.

Always remember that 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 oxide films, whilst the solder creates a thin intermetallic bond which becomes the solder joint.

Please take note of the following guidelines:

- Use a soldering iron bit size and form to suit the operation; small bits for soldering large components may prevent the formation of a joint or slow the process down.
- Always select wire diameters to suit both soldering iron bit 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 ensure you have selected the right grade for the application.
- Do not overheat as this causes an increase in the depth of the intermetallic layer, which in turn weakens the joint.

TECHNICAL DATA

Physical Properties	Typical Values
Rosin Grade:	WW per Fed Spec. LL-R-626
Rosin Softening Point:	71°C (160 °F)
Acid Value:	362 to 402 (mg KOH/g)
Halide Content:	None
Classification:	J-STD-004 – ROM0 IPC-TM-650 2.6.3.3 ISO 12224 – 1.1.3 DIN 8511 – F –SW32

Electrical Reliability Test	Requirements	Results
Surface Insulation - IPC J-Std 004	$1.0 \times 10^8 \Omega$ minimum	Pass

Chemical Reliability Test	Requirements	Results
Copper Mirror Test (IPC-TM-650- 2.3.32)	No evidence of mirror breakthrough	Pass
Copper Corrosion Test (IPC-TM-650-2.6.15)	Classified to J-STD-004 as M type material	Pass

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



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**

www.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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