

ALPHA[®] TELECORE PLUS

HALIDE-FREE, NO-CLEAN, CORED SOLDER WIRE

DESCRIPTION

ALPHA TELECORE PLUS is a low residue core solder designed for no-clean soldering applications that must meet all appropriate Bellcore specifications. The unique blend of rosin and proprietary activators provide rapid wetting while leaving minimal, optically clear, completely inert residue.

FEATURES & BENEFITS

ALPHA Telecore Plus is suitable for use in any commercial no-clean hand soldering application that must meet Bellcore Specification TR-NWT-000078.

ALPHA Telecore Plus' activator system is effective in soldering to mildly oxidized surfaces of the following metals:

Cadmium (Plate)	Solder (Plate)
Copper	Solder (Hot Dip)
Gold	Tin (Hot Dip)
Silver	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	Sn96.5Ag3.0Cu0.5 (SAC305)	217 - 221	2.2%, 3.3%
J-STD-006B	Sn96.5Ag3.5	221	2.2%, 3.3%
J-STD-006B	Sn99.3Cu0.7	227	2.2%, 3.3%
J-STD-006B	Sn63Pb37	183	1.1%, 2.2%
J-STD-006B	Sn62Pb36Ag2	179	1.1%, 2.2%

* TELECORE PLUS may also be available in other or special 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.
- 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 dependant 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.

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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 NR205 Flux is recommended to provide the optimal combination of high long-term reliability and low residue level. NR205 Flux is available in Alpha's Write Flux Pens for precision flux application.

TECHNICAL DATA

Physical Properties	Typical Values
Rosin Grade:	WW per Fed Spec. LL-R-626
Rosin Softening Point:	71°C (160°F)
Halide Content:	Passes Silver Chromate Paper Test
Classification:	ROL0 per IPC J-STD-004 ISO 12224 – 1.1.2

Electrical Reliability Test	Requirements	Results
Surface Insulation Bellcore Test (GR-78-CORE)	$1.0 \times 10^{11} \Omega$ minimum	PASS
Electromigration Bellcore Test (GR-78-CORE)	SIR(initial)/SIR (Final) < 10	PASS
Water Extract Resistivity (QQ-S-571F)		40,000 ohm-cm, typical

Chemical Reliability Test	Requirements	Results
Copper Mirror Test (IPC-TM-650- 2.3.32)	No complete removal of copper	PASS
Copper Corrosion Test (IPC-TM-650-2.6.15)	No evidence of corrosion	PASS

SAFETY

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

ALPHA TELECORE PLUS cored solder 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.

STORAGE

ALPHA Cored Solder Wires should be stored in dry conditions and within a temperature range of 10°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 10°C to 40°C.