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RoHS Ready

245
No-Clean Cored Wire

Product Description

Kester 245 No-clean Cored Wire was developed to complement low residue liquid fluxes being used by the electronics industry. The chemistry is based on some of the same principles that have been safely used for years in mildly activated rosin fluxes. The use of 245 No-clean Cored Wire results in visually acceptable assemblies without cleaning, yet soldering quality and efficiency is comparable to that obtained with mildly activated rosin flux. Kester 245 was formerly classified as Type LR per MIL-F-14256. Kester 245 is Bellcore GR-78 compliant.

Performance Characteristics:

- Highly reliable post-soldering residue
- Minimal residue
- Compatible with leaded and lead-free alloys
- Classified as ROL0 per J-STD-004
- Compliant to Bellcore GR-78

RoHS Compliance

This product meets the requirements of the RoHS (Restriction of Hazardous Substances) Directive, 2002/95/EC Article 4 for the stated banned substances. (Applies only if this core flux is combined with a lead free alloy)

Reliability Properties

Copper Mirror Corrosion: Low
Tested to J-STD-004, IPC-TM-650, Method 2.3.32

Corrosion Test: Low
Tested to J-STD-004, IPC-TM-650, Method 2.6.15

Silver Chromate: Pass
Tested to J-STD-004, IPC-TM-650, Method 2.3.33

Chloride and Bromides: None Detected
Tested to J-STD-004, IPC-TM-650, Method 2.3.35

Fluorides by Spot Test: Pass
Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1

SIR, IPC (typical): Pass
Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	245
Day 1	$1.2 \times 10^{10}\ \Omega$	$1.7 \times 10^{9}\ \Omega$
Day 4	$9.4 \times 10^{9}\ \Omega$	$1.9 \times 10^{9}\ \Omega$
Day 7	$8.6 \times 10^{9}\ \Omega$	$2.1 \times 10^{9}\ \Omega$

Spread Test (typical):
Tested to J-STD-004, IPC-TM-650, Method 2.4.46

	Area of Spread mm^2 (in^2)
Flux Core Solder	Sn63Pb37
Plastic Rosin Core	194 (0.30)
285 Mildly Activated Rosin	335 (0.52)
245 No-Clean	348 (0.54)

Application Notes

Availability:

Kester 245 is available in a wide variety of alloys, wire diameters and flux percentages. For most applications, Sn63Pb37 is used. Consult the alloy temperature chart in Kester's product catalog for a comprehensive alloy list. The standard wire diameter for most applications is 1.00mm (0.031in). Wire diameters range from 0.25 - 6.00mm (0.010 to 0.250in). A "Standard Wire Diameters" chart also is also included in Kester's product catalog. The amount of flux in the wire dictates the ease of soldering for an application. For tin/lead applications, core 50 or 58 (1.1 and 2.2% flux by weight) are recommended. Kester 245 is packaged on spools of different sizes to accommodate a variety of applications.

Process Considerations:

Solder iron tip temperatures are most commonly between 315-371°C (600-700°F) for Sn63Pb37 and Sn62Pb36Ag02 alloys. Heat both the land area and component lead to be soldered with the iron prior to adding Kester 245 cored wire. Apply the solder wire to the land area or component lead. Do not apply the wire directly to the soldering iron tip. If needed, Kester 951 or 952-D6 no clean flux may be used as a compatible liquid flux to aid in reworking soldered joints. Kester 951 and 952-D6 are available in Flux-Pens® for optimum board cleanliness.

Cleaning:

The flux residues left by the 245 core flux are non-corrosive, non-conductive and do not require removal in most applications.

Storage, Handling, and Shelf Life:

Storage must be in a dry, non-corrosive environment. The surface may lose its shine and appear a dull shade of grey. This is a surface phenomena and is not detrimental to product functionality. Flux cored solder wire has a limited shelf life determined by the alloy used in the wire. For alloys containing > 70% lead, the shelf life is two years from date of manufacture. Other alloys have a shelf life of three years from date of manufacture.

Health & Safety:

This product, during handling or use, may be hazardous to health or the environment. Read the Material Safety Data Sheet and warning label before using this product.

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Alloy Properties

ALLOY:TIN-LEAD	MELTING RANGE °F/°C	WIRE	BAR	SOLDERPASTE	PREFORMS
Sn63Pb37	361/183	X	X	X	X
Sn60Pb40	361-374/183-190	X	X		X
Sn55Pb45	361-397/183-203	X	X		X
Sn50Pb50	361-420/183-214	X	X		X
Sn45Pb55	361-440/183-225	X	X		X
Sn40Pb60	361-460/183-238	X	X		X
Sn35Pb65	361-477/183-247	X	X		X
Sn30Pb70	361-496/183-258	X	X		X
No. 123	366-503/186/262	X	X		
Sn25Pb75	361-514/183-268	X	X		X
Sn20Pb80	361-536/268-302	X	X		X
Sn10Pb90	514-576/268-302	X	X	X	X
Sn05Pb95	574-597/301-314				X
LEAD-FREE	**MELTING RANGE °F/°C**	**WIRE**	**BAR**	**SOLDERPASTE**	**PREFORMS**
Sn96.5Ag3.5	430/221	X	X	X	X
Sn96Ag04	430-444/221-229	X	X		X
Sn95Ag05	430-473/221-245	X	X		X
100%Sn	450/232	X	X		X
Sn95Sb05	450-464/232-240	X	X	X	X
Sn99.3Cu0.7	440/227	X	X		X
Sn96.6Ag3.0Cu0.5	422-428/217-220	X	X	X	X
Sn95.5Ag3.8Cu0.7	422-430/217-221	X		X	X
SAF-A-LLOY	428-454/219-235	X	X		X
OTHER ALLOYS	**MELTING RANGE °F/°C**	**WIRE**	**BAR**	**SOLDERPASTE**	**PREFORMS**
Sn62Pb36Ag02	354-372/179-189	X	X	X	X
Sn60Pb36Ag04	354-475/179-246	X	X		X
Sn10Pb88Ag02	514-570/268-299	X	X	X	X
Sn05Pb93.5Ag1.5	565-574/296-301	X			X
Sn05Pb92.5Ag2.5	536/280	X	X		X
Sn43Pb43Bi14	291-325/144-163	X	X	X	X

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Note: SAC305 = Sn96.5Ag3.0Cu0.5