Leading UK Manufacturer of Solder Paste, Solid & Cored Solder Wires, Lead Free & Rosin Free Solders, Fluxes, Cleaners and High Purity Bar Solder Products.

WARTON METALS LIMITED

TECHNICAL DATA SHEET

Future Cored Solder Wire

No Clean Soldering

Description

Future is a flux core contained within a Warton High Purity Solder Wire. Warton's Future HF is a no clean, halide free soldering flux, and is formulated and manufactured using a unique modified rosin. The Future range of No Clean Cored Solder is available in two flux percentages, fast flow 2% and low residue 1%. Future flux cores exhibit the absolute minimum of clear residue after soldering with no offensive odours generated during the soldering operation.

Future HF (Halide Free)

Future HF is formulated without the use of halides, suitable for applications where a products long term reliability requires the use fluxes to the ROL0 specification. Future HF eliminates any long-term corrosion potential.

Benefits

- No Clean
- Halide Free
- ROL0 Classification
- BS 441 Rosin Class 5A
- Minimal Clear Residues

Properties

Flux Classification (J-STD-004B)	ROL0
Acid Value mg KOH/g (J-STD-004B)	260 (Typical)
Quantitative Halide (J-STD-004B) (IPC-TM-650 2.3.28)	Halide Free (0.05% Max) < 1000ppm (JIS Z 3197)
Surface Insulation Resistance (J-STD-004B) (IPC-TM-650 2.6.3)	Pass
Electro Migration (Bellcore GR-78) (IPC-TM-650 2.6.14)	Pass
Copper Mirror Test (J-STD-004A/B) (IPC-TM-650 2.3.32)	Pass
Copper Corrosion Test (J-STD-004A/B) (IPC-TM-650 2.6.15)	Pass

Availability

Product	Flux Content	Standard Packaging
Future HF	1%, 2%	0.25Kg, 0.5Kg, 2.5Kg, 3Kg, 5Kg, 10Kg, 15Kg and 25Kg reels

Other packaging options available. For more information on alternate packaging options please contact our sales team.

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High Purity Solder Alloy

Standardization is important to reduce variety and to promote the quality of products by defining features and characteristics governing their fitness for purpose. The standards promote clear unambiguous communication between purchasers and suppliers for quotation ordering and supply purposes.

In 1994 a single European standard, EN 29453 (ISO 9453), superseded all other European national standards including: BS 219, DIN 1707, NFC 90-550. Other equivalent international standards include J-STD-006, ASTM B32 and JIS-Z-3382.

Warton High Purity Solder Alloys are manufactured using only the 'Highest Purity Virgin Materials' this being part of Warton's simple philosophy that the best raw materials lead to the best finished products.

Below shows a typical batch analysis of the High Purity Tin/Lead used in manufacturing High Purity 63/37.

Typical batch analysis: Tin

Sn	Sb	Pb	Cu	Zn
99.95	0.009	0.002	0.0002	0.0001
Fe	**As**	**Ag**	**Bi**	**In**
0.002	0.002	0.0001	0.0001	0.0003

Typical batch analysis: Lead

Sn	Sb	Pb	Cu	Zn
0.001	0.002	99.99	0.003	0.0001
Fe	**As**	**Ag**	**Bi**	**In**
0.002	0.0005	0.002	0.005	0.0003

Typical batch analysis: Warton High Purity 63/37

Sn	Sb	Pb	Cu	Zn	Fe	As	Ag	Bi	In
63.0	0.0095	remainder	0.0007	0.0002	0.002	0.001	0.0005	0.0003	0.0003

These consistent high standards apply not only to all of Warton's high purity solder alloys, but to its entire range of products, inclusive of flux cored and solid solders, liquid fluxes, cleaners and solder paste.

Lead Free Solder Alloys

In accordance with REACH legislation and increasing environmental awareness Warton Metals offer a complete range of 'lead free' alloys to suit all applications.

Warton's range of lead free solder alloys includes:

Alloy Name	Alloy Breakdown	Melting Temperature °C
Tin	Sn100	232
96S	Sn96.5/Ag3.5	221
96/4	Sn96/Ag4	221
98S	Sn98/Ag2	221-226
TSC	Sn95.8/Ag3.5/Cu0.7	217-218
SAC405	Sn95.5/Ag4/Cu0.5	217-219
Sc100e	Cu0.5-0.7/Sn Remainer	217-219
LM10A	Sn87/Ag10/Cu3	214-275
SACXP0307	Sn/Cu0.7/Ag0.3	217-227
SAC305	Sn96.5/Ag3/Cu0.5	217-220
SAC300	Sn97/Ag3	221-224
SAC3	Sn96.7/Ag2.8/Cu0.5	217-220
SAC2	Sn97.5/Ag2/Cu0.5	217-220
SAC1	Sn99.2/Ag0.3/Cu0.5	217-220
97C	Sn97/Cu3	227-310
99C	Sn99.3/Cu0.7	227
95A	Sb4.5-5.5/Sn Remainder	235-240

Key: Sn-Tin, Ag-Silver, Cu-Copper

Other alloys available

Leaded Solder Alloys

Warton are able to offer a comprehensive range of leaded solder alloys to 'Professional Users' which will be marked as **For Professional Use Only** in accordance with REACH regulations.

Warton's range of leaded solder alloys includes:

Alloy Name	Alloy Breakdown	Melting Temperature °C
60/40	Sn60/Pb40	183-190
63/37	Sn63/Pb37	183
50/50	Sn50/Pb50	183-215
45/55	Sn45/Pb55	183-226
40/60	Sn40/Pb60	183-238
35/65	Sn35/Pb65	183-245
30/70	Sn30/Pb70	183-255
20/80	Sn20/Pb80	183-280
Alloy 296 HMP	Sn5/Pb92/Ag3	296-301
15/85	Sn15/Pb85	226-290
LMP 62S	Sn62/Pb36/Ag2	179
TLS/5	Sn5/Pb94/Ag1	296-301
HMP 5S	Sn5/Pb93.5/Ag1.5	296-301
Sn10Pb88Ag2	Sn10/Pb88/Ag2	268-290
Alloy No1	Sn50/Pb48.6/Cu1.4	183-215
Alloy No2	Sn60/Pb38.2/Cu1.8	183-190
1/99	Sn1/Pb99	300
60/40 Ant	Sn60/Sb0.2-0.5/Pb Rem	183-188

Key: Sn-Tin, Pb-Lead, Ag-Silver, Cu-Copper, Sb-Antimony

Other alloys available

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TECHNICAL DATA SHEET

Wire gauge (Diameter)

The wire gauge (diameter) for Warton solid and flux cored solder wires is represented as SWG (Standard Wire Gauge). The equivalent imperial and metric values are shown below.

SWG	mm	Inch
10	3.25	0.128
11	2.95	0.116
12	2.64	0.104
13	2.34	0.092
14	2.03	0.080
16	1.63	0.064
18	1.22	0.048
20	0.914	0.036
21	0.813	0.032
22	0.711	0.028
24	0.599	0.022
26	0.457	0.018
28	0.375	0.0148
30	0.315	0.0124
32	0.274	0.0108
34	0.233	0.0092
36	0.193	0.0076

Other wire diameters available