Solder Wire

Description:

Multicomp 511 solder wires have been specially formulated to complement No Clean wave and reflow soldering processes. They are also applicable to repair operations carried out after a cleaning process, eliminating the need for further cleaning. This contain different halide levels with maximised soldering power. The cored wires are manufactured with a range of flux contents. Although users will normally be using products with a nominal flux content of 3%, the superior performance of the product may allow a lower flux content to be specified e.g. 2.2%. This will further improve residue appearance by reducing the quantity. All are available in alloys conforming to national and international standards, including lead free alloys. Some alloys and flux contents may be manufactured to special order.

Solid fluxes are based on modified rosins and carefully selected activators. In use they exhibit a mild rosin odour and leave a small quantity of clear residue. The used activated resin shows the following advantages:

Halide free version	Multicomp 511	Clear residues	Low spitting
Fast soldering	Wide range of activities to suit all applications	Heat stable	
Good spread	On copper, brass and nickel	Mild odour	

Multicomp solder wires provide fast soldering on copper and brass surfaces as well as solder coated materials. Activity of the halide activated versions on nickel is also good depending on the state of oxidation of the nickel finish. The good thermal stability of fluxes means they are also well suited to soldering applications requiring high melting temperature alloys. The resin and flux systems are designed to leave relatively low residues and to minimise residual activity. This is achieved by ensuring some decomposition and volatilisation takes place during the soldering process. In some situations, this may generate visible fuming but in all cases, rosin fumes must be removed from the breathing zone of operators.

Application:

Soldering iron: Good results should be obtained using a range of tip temperatures. However, the optimum tip temperature and heat capacity required for a hand soldering process is a function of both soldering iron design and the nature of the task and care should be exercised to avoid unnecessarily high tip temperatures for excessive times. A high tip temperature will increase any tendency to flux spitting and it may produce some residue darkening. The soldering iron tip should be properly tinned and this may be achieved using Multicomp cored wire. Severely contaminated soldering iron tips should first be cleaned and pre-tinned using Tippy then wiped on a clean, damp sponge before re-tinning with Multicomp cored wire.

Soldering process: Multicomp Flux cored wires contain a careful balance of resins and activators to provide clear residues, maximum activity and high residue reliability, without cleaning in most situations. To achieve the best results from solder wires, recommended working practices for hand soldering should be observed as follows:

a) Apply the soldering iron tip to the work surface, ensuring that it simultaneously contacts the base material and the component termination to heat both surfaces adequately. This process should only take a fraction of a second.

b) Apply Multicomp flux cored solder wire to a part of the joint surface away from the soldering iron and allow to flow sufficiently to form a sound joint fillet - this should be virtually instantaneous. Do not apply excessive solder or heat to the joint as this may result in dull, gritty fillets and excessive or darkened flux residues.

c) Remove solder wire from the work piece and then remove the iron tip.

d) The total process will be very rapid, depending upon thermal mass, tip temperature and configuration and the solderability of the surfaces to be joined.

Cleaning : Multicomp Flux cored solder wires have been formulated to leave pale flux residues and to resist spitting and fuming. In most industrial and consumer electronics applications cleaning will not be required and the product may therefore be used to complement a No Clean wave soldering or reflow process or to allow repairs to cleaned boards without the need for a second cleaning process.

Should residue quantity be an important consideration, X39B flux cored wire may be specified if a halide free product is required. Multicomp 511 offer good activity and consequently cored wire flux contents and hence residue levels may be reduced in comparison with equivalent conventional products.

Should cleaning be required, this is best achieved using Flux-Ex 200B or Flux-Ex 500 solvent cleaner.

Other proprietary solvent or semi-aqueous processes may be suitable but saponification is not recommended.

General Tests	Multicomp 511
J-STD-004 - solder spread mm^2 - corrosion test	340 pass
SIR Test (without cleaning) - IPC-SF-818 Class3 - Bellcore TR-NWT-000078	pass pass
Electromigration Test (without cleaning) - Bellcore TR-NWT-000078	pass
Classification - J-STD-004 - IPC-SF-818	RE M1 MR3CN

Physical Properties and Data

General properties	Multicomp 511
Flux Type IEC 61190-1-3 DIN EN 29454-1	REM1 1.2.2.
Flux Content	2.7% / 3% ± 0.3%
Acid Value mg/KOH/g	170
Halide Content	1.1 %
Corrosion Effect	None, according to DIN 8516
	Lead-Containing
Standard alloys acc. to ISO 9453:2006	S-Sn99Cu1
With micro additives <0.05%	Sn99Cu1
Available Diameters	0.7mm
Available reel sizes	500g

Part Number Table

Description	Part Number
Solder Wire, Lead Free, 0.7mm, 500g	509-0647

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