

SOLDER WIRE KRISTALL 505

No-Clean solder wire with clear residues

DESCRIPTION

Stannol Kristall 505 solder wire has been formulated to complement No Clean wave and reflow soldering processes. It is also applicable to repair operations carried out after a cleaning process, eliminating the need for further cleaning. The 505 contains a low halide content with increased activity. This solder wire is manufactured with 2.7% flux content. Kristall 505 is 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 solder wire provides fast soldering on copper and brass surfaces as well as pre-tinned surfaces. Activity on nickel is also good depending on the state of oxidation of the nickel finish. The high thermal stability of Stannol Kristall 505 ensures that it is well suited to soldering applications requiring high melting temperature alloys. The resin and flux system is designed to leave relatively low residues and to minimize residual activity. This is achieved by ensuring partial decomposition and volatilization, which takes place during the soldering process. Soldering generates visible fuming, but in all cases rosin fumes must be removed from the breathing zone of operators.

CHARACTERISTICS

The used activated resin shows the following advantages:

- **fast soldering** (wide range of activities to suit all applications)
- **good spread on copper, brass and nickel**
- **clear residues**
- **high thermal stability**
- **mild odour**

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 Stannol Kristall 505 cored wire. Severely contaminated soldering iron tips should first be cleaned and pre-tinned using Stannol Tippy, then wiped on a clean, damp sponge before re-tinning with solder wire.

Soldering process: Stannol Kristall 505 flux cored wire contains a careful balance of resins and activators to provide clear residues, maximum activity and high residue reliability, without cleaning in most applications. To achieve the best results with Stannol Kristall 505 solder wire, 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 Kristall 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 workpiece 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: Stannol Kristall 505 flux cored solder wire has been formulated to leave pale flux residues and to reduce 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 cleaning be required, this is best achieved using Stannol Flux-Ex 200B or Stannol Flux-Ex 500 solvent cleaner. Other proprietary solvent or semi-aqueous processes may be suitable but saponification is not recommended.

TEST RESULTS

GENERAL TESTS	KRISTALL 505
J-STD-004 - solder spread (mm ²) - corrosion test	315 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	REL1

PHYSICAL PROPERTIES AND DATA

GENERAL PROPERTIES	KRISTALL 505	
Flux Type J-STD-004	REL1	
Flux content:	2.7% / 3.0% ± 0.3%	
Acid Value mg/KOH/g:	170	
Halide content:	0.5 %	
Corrosion effect:	None / J-STD-004	
Standard alloys acc. ISO 9453:2014 Flowtin = with micro additives <0,05% SN100C:	Lead-containing:	
	S-Sn60Pb40*	on request
	S-Sn62Pb36Ag2*	on request
	Lead-free (Ecoloy Series):	
	ECOLOY TC* (S-Sn99Cu1)	on request
	ECOLOY TSC* (S-Sn95Ag4Cu1)	on request
	ECOLOY TSC305* (S-Sn96Ag3Cu1)	on request
	Lead-free (Flowtin Series):	
	FLOWTIN TC* (Sn99Cu1)	on request
	FLOWTIN TSC* (Sn95Ag4Cu1)	on request
	FLOWTIN TSC305* (Sn96Ag3Cu1)	on request
	on request	on request
	Lead-free (SN100C Series):	
	SN100C* (SnCu0,7NiGe)	on request
	Available diameters:	from 0.3 mm
Available reel sizes:	250 g, 500 g, 1 kg	

* These alloys are partially subject to minimum order quantities.

Other alloys, flux contents or reel sizes are available on request.

HEALTH AND SAFETY

Before using please read the material safety data sheet carefully and observe the safety precautions described.

NOTICE

The above values are typical and represent no form of specification. The Data Sheet serves for information purposes. Any verbal or written advise is not binding for the company, whether such information originates from the company offices or from a sales representative. This is also in respect of any protection rights of third parties, and does not release the customer from the responsibility of verifying the products of the company for suitability of use for the intended process or purpose. Should any liability on the part of the company arise, the company will only indemnify for loss or damage to the same extent as for defects in quality.