

NihonHanda 155 Solder Paste

No-Clean, Lead-Free, ROLO & Air Reflow Capable Solder Paste

DESCRIPTION

155 flux is developed to make voids hardly formed and seek for excellent solderability not only at N₂ reflow but also at air reflow. The solder paste with 155 has also a superior property to avoid preheating slump, so the shape of solder fillet shows little difference before and after preheating. Accordingly this solder paste is best suited to surface mount which is required high-density packaging.

FEATURES & BENEFITS

- Less-void property despite halogen free, regardless of reflow conditions
- Excellent wettability even with hardly wettable materials such as Nickel even at air reflow
- High printability available to mount micro-chip components such as QFP in 0.4mm pitch
- Less solder bridges nor capillary balls thanks to less heat slump characteristics
- Features high tack force such as 100gf or more at 16 hours after printing
- High reliability flux without copper plate corrosion nor migration and available non-cleaning
- High preservation stability without quality degradation for 6 months stored at 0 to 15deg.C

PRODUCT INFORMATION

Alloys :	PF305 : Sn-3.0Ag-0.5Cu
Powder Size :	Type 4 (20~38μm)
Packaging Sizes :	500 gram jars
Lead Free :	Complies with RoHS Directive 2011/65/EU
NOTE : For other powder size and packaging sizes, contact our office.	

SAFETY

While the NihonHanda 155 flux system is not considered toxic, its use in typical reflow will generate a small amount of reaction and decomposition vapors.

These vapors should be adequately exhausted from the work area. Consult the SDS for additional safety information.

HALOGEN STATUS

Halogen Status			
Standard	Requirement	Test method	Status
IEC 612249-2-21	Post Soldering Residues contain < 900 ppm each or total of < 1500 ppm Br or Cl from flame retardant source	TM EN 14582	Pass
JEDEC A Guideline for Defining "Low Halogen" Electronics	Post soldering residues contain < 1000 ppm Br or Cl from flame retardant source		Pass

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TECHINCAL DATA

CATEGORY	RESULTS	PROCEDURES/REMARKS
CHEMICAL PROPERTIES		
Activity Level	ROLO	IPC J-STD-004B
Halide Content	0,03%	JIS Z 3197_2012 8.1.4.2.1
Fluoride Spot Test	Pass	JIS Z 3197_2012 8.1.4.2.4
Silver Chromate Test	Pass	JIS Z 3197_2012 8.1.4.2.3
Copper Mirror Test	Pass	IPC J-STD-004B
Copper Corrosion Test	Pass	JIS Z 3197_2012 8.4.1
ELECTRICAL PROPERTIES		
SIR : 40°C90%RH	100GΩ以上	JIS Z 3197_2012 8.5.3
SIR : 85°C85%RH	100MΩ以上	JIS Z 3197_2012 8.5.3
JIS Elecrto migration (1000 hours@85°C85%RH 48V)	No migration	JIS Z 3197_2012 8.5.4
PHYSICAL PROPERTIES		
Flux Content	11,5%	JIS Z 3197_2012 8.1.2
Viscosity	200 Pa · s	JIS Z 3284-3_2014 4.3
Color	Clear, Colorless Flux Residue	
Tack Force	100g or more at 16 hours after printing	JIS Z 3284-3_2014 4.5
Solder Ball	Class 1 to 2	JIS Z 3284-4_2014 4.2
Spread	75%以上	JIS Z 3197_2012 8.3.1.1
Cold/Printing Slump	No bridge for 0.3 mm space	JIS Z 3284-3_2014 4.3
Hot Slump	No bridge for 0.3 mm space	JIS Z 3284-3_2014 4.3

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PROCESSING GUIDELINES

STORAGE & HANDLING	PRINTING	REFLOW (Refer to Fig.1)	CLEANING
<p>1. Refrigerate to guarantee stability 0 - 15°C. When stored under these condition, the shelf life of PF305-155TO is 6 months.</p> <p>2. Please open the lid after the temperature of the paste completely becomes same as the room temperature. It usually takes one hour after taking out the product from a refrigerator. If you open the lid while the paste is still cold, dew will condense on the surface of the solder paste and it will cause the quality deterioration.</p> <p>3. Paste can be stored for 2 weeks at room temperature up to 25°C (77°F) prior to use.</p> <p>4. Please avoid the intentional warming as much as possible. In case you force to warm the paste, please be careful enough not to raise the temperature too high. If it is above the room temperature, it causes inferior quality.</p> <p>5. The viscosity of solder paste changes according to the temperature. The higher the temperature is, the lower becomes the viscosity. So please use the paste under the specific condition of temperature. Meanwhile, please be careful that the paste absorbs moisture and becomes likely to deteriorate when the humidity is high. As for usage circumstances, we recommend conditions of 25±3°C and humidity of 70% RH or lower.</p>	<p>●Stencil: Recommend to use metal masks processed with additive or laser manufacturing. 0.1 to 0.15mm mask thickness is adequate for printing 0.4 to 0.5mm pitch.</p> <p>●Squeegee: Recommend to use metal squeegee.</p> <p>●Printing pressure: 0.1 to 0.3N/mm is recommended.</p> <p>●Printing speed: 20 to 80mm/sec is recommended.</p> <p>●Plate releasing speed: 0.1 to 5mm/sec is recommended.</p>	<p>Reflow atmosphere: Both air and N2 reflow are available. 1000ppm or less is recommended for oxygen concentration for N2 reflow.</p> <p>Profile:</p> <p>●Please set ramp rate at 1 to 3 deg.C/sec. till preheating area.</p> <p>●Recommend 150 to 190 deg.C for 60 to 150 seconds for preheating. Inappropriate preheating conditions may cause insufficient soldering.</p> <p>●Please take 30 to 90 seconds at 220 deg.C or more. If you can take longer time, it would be more recommended in terms of avoiding void occurrence.</p> <p>●Peak temperature is recommended for 230 to 260 deg.C. Higher temperature is generally recommended as far as surrounding components can be endured.</p>	<p>●For the appropriate detergents for flux residues, please inquire to TecnoLab.</p> <p>●Please wash out solder paste with isopropyl alcohol from stencils or squeegees.</p>