Technical Data Sheet

LOCTITE HF 200

June 2015

PRODUCT DESCRIPTION

LOCTITE HF 200 provides the following product characteristics:

Technology	Solder paste
Application	Pb-free soldering

LOCTITE HF 200 solder paste is a halogen-free, no clean, low voiding Pb-free solder paste. LOCTITE HF 200 solder paste shows excellent humidity resistance and solderability when reflowed in both air and nitrogen across a wide range of surface finishes including OSP copper.

FEATURES AND BENEFITS

- Colorless residues for easy post-reflow inspection
- Suitable for fine pitch, high speed printing up to 140mm/s (6"/s)
- Halogen-free flux: passes IC with pretreatment IPC-TM-650 2.3.34/EN14582
- Halogen-free flux classification: ANSI/J-STD-004 Rev. B for a type ROL0 classification

TYPICAL PROPERTIES

Solder Paste Typical Properties

Alloys	96SC (SAC387) 97SC (SAC305)
Powder Particle Size, µm	20 to 38
Powder Size Coding	DAP+
IPC Equivalent	Type 4
Metal Loading (Weight %)	88.5
Slump, J-STD-005, mm *RT, 15 minutes* 0.33 x 2.03 mm pads 0.63 x 2.03 mm pads *150°C, 15 minutes* 0.33 x 2.03 mm pads 0.63 x 2.03 mm pads	IPC A21 Pattern (0.2 mm stencil thickness) 0.08 0.33 0.25 0.33
Brookfield Viscosity TF spindle, 25°C, 5rpm after 2 minutes, mPa·s	700,000
Initial tack force, gF	60
Malcom Rheology, 10rpm, 25°C, Rate 6s^{-1}, Pa.s	115
Thixotropic Index (Ti), 25°C (Ti = log(viscosity @ 1.8s^{-1} / viscosity @ 18s^{-1})	0.6
Useful open time, hours	>24

Solder Powder:

Careful control of the atomisation process for production of solder powders for LOCTITE HF 200 solder pastes ensures that the solder powder is produced to a quality level that exceeds IPC/J-STD-006 & EN29453 requirements for sphericity, size distribution, impurities and oxide levels. Minimum order requirements may apply to certain alloys and powder sizes.

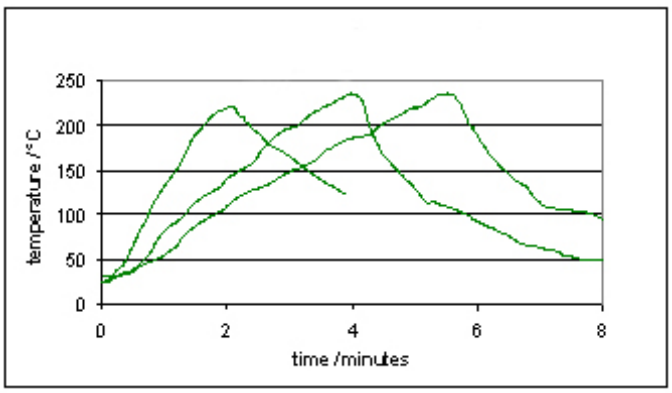
DIRECTIONS FOR USE

Printing:

1. LOCTITE HF 200 is available for stencil printing down to 0.4 mm CSP apertures, with type 4 (DAP+) powder.
2. Printing at speeds between 60mm/s and 140mm/s can be achieved by using laser cut, electropolished or electroformed stencils and metal squeegees (preferably 60°).
3. Under laboratory conditions, acceptable first prints have been achieved after printer down times of 120 minutes without requiring a knead cycle.

Reflow:

- Any of the available methods of heating to cause reflow may be used including IR, convection, hot belt, vapor phase and laser soldering.
- A typical profile that has shown good performance is shown below.



Cleaning:

1. LOCTITE HF 200 solder pastes are no-clean and are designed to be left on the PCB in many applications post-assembly since they do not pose a hazard to long-term reliability.
2. Residue removal can be achieved using conventional cleaning processes based on solvents such as LOCTITE MCF 800 or suitable saponifying agents.
3. For stencil cleaning and cleaning board misprints, Multicore SC-01/02 Solvent cleaner is recommended.

RELIABILITY PROPERTIES

Solder Paste Medium:

LOCTITE HF 200 medium contains a stable resin system, slow evaporating solvents and with minimal odor. The formulation has been tested to the requirements of the ANSI/J-STD-004 for a type ROL0 classification specification .

Test	Specification	Results
Copper Plate Corrosion	ANSI/J-STD-004	Pass
Copper Mirror Corrosion	ANSI/J-STD-004	Pass
Chlorides & Bromides	ANSI/J-STD-004	Pass
Surface Insulation Resistance (without cleaning)	ANSI/J-STD-004 Telecordia GR-78-Core	Pass Pass
Flux Activity Classification (without cleaning)	ANSI/J-STD-004	ROL0

PACKAGING

Storage:

The material should be removed from cold storage a minimum of 8 hours before use. It is recommended to store LOCTITE HF 200 solder paste at 0 to 10°C . Do not use forced heating methods to bring solder paste up to temperature. LOCTITE HF 200 solder paste has been formulated to minimize flux separation in storage but, should this occur, gentle stirring for 15 seconds will return the product to the correct rheological performance. To prevent contamination of unused product, do not return any material to its original container. For further specific shelf life information, contact your local Technical Service Center.

DATA RANGES

The data contained herein may be reported as a typical value and/or a range. Values are based on actual test data and are verified on a periodic basis.

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Not for Product Specifications

The technical information contained herein is intended for reference only. Please contact Henkel Technologies Technical Service for assistance and recommendations on specifications for this product.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Disclaimer

Note:

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