Technical Data Sheet

LOCTITE GC 10

February 2015

PRODUCT DESCRIPTION

LOCTITE GC 10 provides the following product characteristics:

Technology	No-clean and Halogen-free Solder Paste
Application	Pb-free soldering

LOCTITE GC 10 solder paste is a halogen free, no-clean, low voiding, Pb-free solder paste specially formulated to provide added long term stability over a range of temperature conditions. The enhanced paste stability created through its novel formulation strategy, increases both field application yields and on-line paste utilization.

LOCTITE GC 10 also shows excellent solderability when reflowed in both air and nitrogen across a wide range of challenging surface finishes and component metallizations including immersion Ag, OSP-Cu, ENIG and CuNiZn. It supports excellent reflow to overcome industry wide HiP and NWO challenges. The new flux chemistry will protect the solder longer, improve coalescence and optimize wetting performance, allowing for very shiny solder joints.

LOCTITE GC 10 is suitable for use with industry standard SAC alloys.

FEATURES AND BENEFITS

- Halogen-free flux: passes IC with pretreatment IPC-TM-650 2.3.34/EN14582
- Halogen-free flux classification: ROL0 to ANSI/J-STD-004 Rev. B
- Printing: Fine pitch capability (0.3 mm), stencil life (>16 hours), and abandon time (>8 hours)
- Improved paste transfer efficiency
- Printing: Suitable for high speed printing up to 125 mms^{-1}
- Improved reflow process window (high soak temperatures and time) with superior coalescence and wetting
- Very shiny Pb-free solder joints over wide range of reflow
- Colorless residues for easy post-reflow inspection
- Residues pint-testable after 5x reflow
- Will allow online paste utilization protocols to be re-written

TYPICAL PROPERTIES

Based on type 4 powder.

Solder Paste Typical Properties

Metal Content, %	88.5
Brookfield Viscosity @ 25 °C, mPa·s Spindle TF, speed 5 rpm, after 2 minutes	900,000
Malcolm Viscosity @ 25 °C, Pa.s Speed 10 rpm	190
Malcolm Thixotropic Index	0.5
IPC Slump A21 mm *25°C, 15 minutes* 0.33 x 2.03mm pads 0.63 x 2.03mm pads	 0.33 0.15
IPC Slump A21 mm *182°C, 15 minutes* 0.33 x 2.03mm pads 0.63 x 2.03mm pads	 0.33 0.15

DIRECTIONS FOR USE

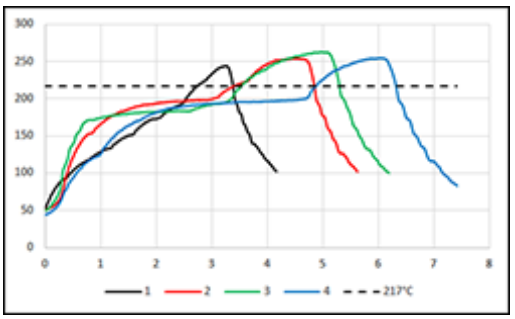
Printing:

1. LOCTITE GC 10 is available for stencil printing with type Type 4 powder.
2. Printing at speeds between 25 to 125 mms^{-1} can be achieved using laser cut, electropolished or electroformed stencils with metal squeegees.

Reflow:

1. Any of the available methods of heating to cause reflow may be used including IR, convection, hot belt, vapor phase and laser soldering.
2. Typical profiles that have shown good performance are shown below.

Reflow Profile



Cleaning:

1. LOCTITE GC 10 solder pastes are no-clean and are designed to be left on the PCB in many applications post assembly since it does not pose a hazard to long term reliability.
2. Should there be a specific requirement for residue removal, this may be achieved by using conventional cleaning processes based on solvents such as LOCTITE MCF800.
3. For stencil cleaning and cleaning board misprints, LOCTITE SC-01 Solvent cleaner is recommended.
4. Residues are easily removed in batch and in-line aqueous cleaners even up to three days post reflow.
5. Cleaning of some assemblies is best conducted in an ultrasonic bath.
6. Tap water is not recommended for rinsing, since ionic impurities present in tap water can lead to reduced reliability of the assembly.

RELIABILITY PROPERTIES

Solder Paste Medium:

LOCTITE GC 10 medium contains a stable resin system, slow evaporating solvents and with minimal odour. The formulation has been tested to the requirements of the ANSI/J-STD-004B for a type ROL0 classification specifications.

Test	Specification	Results
Flux Corrosion	J-STD004B (2.6.15C)	Pass
Copper Mirror	J-STD004B (2.3.32D)	Pass
Surface Insulation Resistance (SIR)	J-STD004B (2.6.3.7)	Pass
Electromigration (ECM)	J-STD004B (2.6.14.1)	Pass
Flux Activity Classification	J-STD004B	ROL0

PACKAGING

LOCTITE GC 10 is available in both jars and in semco cartridges, other types of packaging may be available on request.

Storage:

Optimal storage :5 to 25ºC

Storage information may be indicated on the product container labelling. Material removed from containers may be contaminated during use. Do not return products to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Centre or Customer Service Representative.

Shelf Life:

Provided that LOCTITE GC 10 is stored in the original container, a minimum shelf life of 365 days at 5 to 25˚C or 31 days at 40°C can be expected.

Air shipment is recommended to minimise the time the containers are exposed to higher temperatures.

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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Reference N/A