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Technical Data Sheet

LOCTITE DA 100

June 2015

PRODUCT DESCRIPTION

LOCTITE DA 100 provides the following product characteristics:

Technology	Solder paste
Application	Soldering

LOCTITE DA 100 is a dispensing grade solder paste intended for solder die-attach applications. It provides effective thermal control for copper leadframe power semiconductor devices, such as rectifiers, power transistors, and is suitable for automotive and consumer packages.

FEATURES AND BENEFITS

- Low color residues resistant to charring in reflow
- Soft residues designed for easy removal in solvent or semi-aqueous cleaning processes
- Very low voiding
- Vacuum-mixed for reliable dispensing performance
- Extended pause time capability (>2 hrs)
- Long term frozen storage (12 months)
- Robust flux for high-lead and Pb-free alloys
- Robust flux for Type 3 and Type 4 powder
- Excellent dispense capability

TYPICAL PROPERTIES

Based on High-lead (2.5S), type 3 powder.

Solder Paste Typical Properties

Alloys	2.5S
Powder Particle Size, µm	45-20
Powder Size Coding	AGS
IPC Equivalent	Type 3
Metal Loading (Weight %)	88
Brookfield Viscosity TF spindle, 25°C, mPa·s	310,000
Alloy melting range, ºC	286 to 297

Based on High-lead (2.5S), type 4 powder.

Solder Paste Typical Properties

Alloys	2.5S
Powder Particle Size, µm	38 - 20
Powder Size Coding	DAP
IPC Equivalent	Type 4
Metal Loading (Weight %)	88
Brookfield Viscosity TF spindle, 25°C, mPa·s	300,000
Alloy melting range, ºC	286 to 297

Based on Lead-free (92A), type 4 powder.

Solder Paste Typical Properties

Alloys	92A
Powder Particle Size, µm	38 - 20
Powder Size Coding	DAP
IPC Equivalent	Type 4
Metal Loading (Weight %)	85
Brookfield Viscosity TF spindle, 25°C, mPa·s	300,000
Alloy melting range, ºC	239 to 246

Solder Powder:

Careful control of the atomisation process for production of solder powders for LOCTITE DA 100 solder pastes ensures that the solder powder produced meets the requirements of J-STD-005 for powder shape, size distribution, and alloy composition.

DIRECTIONS FOR USE

Dispensing:

LOCTITE DA 100 solder paste can be dispensed using positive displacement or pneumatic (time pressure) dispense systems.

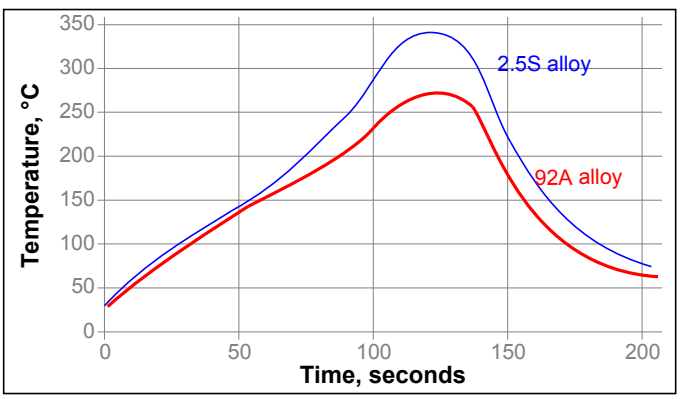
Dispense Details:

Recommended dispense needles for different solder powder sizes.

Type 3 (AGS)	Needle gauge 23; 0.33 mm inner diameter
Type 3 (AGS)	Needle gauge 22; 0.41 mm inner diameter
Type 4 (DAP)	Needle gauge 25; 0.25 mm inner diameter

Reflow:

1. LOCTITE DA 100 solder pastes are designed for reflow in inert atmospheres, typically forming gas (N2/H2) or nitrogen.
2. Optimal reflow can be achieved by using the following example settings. A ramp rate of 2 to 3°C/s to peak temperatures that are 10 to 30°C above the melting point of the alloy in use, combined with a dwell time of 20 to 40 seconds above the alloy melting point.
3. Example profiles for 2.5S and 92A alloy LOCTITE DA 100 solder pastes are shown below.



Cleaning:
The post-reflow residues of LOCTITE DA 100 solder paste remain soft after reflow and have been specifically designed for easy removal with solvents commonly used in semi-aqueous cleaning processes.

RELIABILITY PROPERTIES

Solder Paste Medium:

IPC Corrosion	IPC TM-650-2.6.15c	Pass
Copper Mirror Corrosion	IPC TM-650-2.3.32	Pass
Chlorides & Bromides	IPC TM-650-2.3.33	Pass
Corrosion	IPC TM-650-2.6.15c	Pass
SIR	IPC TM-650-2.6.3.3a	Pass
Electromigration (ECM)	IPC TM-650-2.6.14.1	Pass
Flux halide content	%	<0.02
J-STD flux classification	J-STD-004	ROL0

STORAGE AND SHELF LIFE

Storage:
Cartridges of LOCTITE DA 100 solder paste should be stored tip-downwards at ≤-18°C and have a shelf life of 365 days. Cartridges stored tip-down at 5 to 10°C have a shelf-life of 91days. Cartridges of solder paste require stabilization at room temperature before use for 1.5 to 2 hours on removal from cold storage. Once in use the paste cartridges have a floor life of 3 to 4 days at room temperature.

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:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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Reference N/A