Heraeus

PD 955 M
SMT-Adhesive

Thermosetting Polymer SMT-Adhesive for High-Speed Dispensing

Description

PD 955 M is a thermosetting single-component, solvent-free polymer adhesive, developed especially for the surface mounting of SMT components on to PCBs and for use on bare substrates.
The rheology is especially adapted for high-speed-dispensing. It allows for very low Z-Height-returns.

Special advantages

- Very wide processing window, no tendency to string.
- Specially developed for high-speed dispensing.
- Dispensing with very low Z-Height-return possible.
- Form stable glue dots.
- Excellent adhesion with standard and also with difficult-to-glue components.
- Very low humidity absorption. Steep temperature increases and very short curing times are possible without danger of formation of air bubbles or worse adhesion.
- High surface insulation resistance (SIR).
- Constant batch-to-batch quality.

Physical characteristics

Colour:	red
Density:	1.2 g/cc
Homogeneity:	no particle >50 µm
Adhesion:	≥ 25 N/mm^2 at room temperature,

after curing in conventional box oven, 5 min /125°C, Cu-nail on SO component, with a low-stress incapsulation compound.

Viscosity

Shear rate D	Viscosity ascending curves
[s^{-1}]	[Pa·s]
PD 955 M 30	10 - 40

Haake Rotovisco RV 20, PK 100, PK I/2°T,
plate/cone, without border, temperature: 23 °C.
Program: ascending curve 0-40 s^{-1}, 6 min.

Electrical characteristics

Surface insulation resistance and electrolytic corrosion property: see reverse.

Processing

The adhesive is suitable for machine and manual dispensing.

Curing

The standard curing conditions are: 125°C / 3'.
Max. curing temperature should not be higher than 200°C.
The minimum* curing times are shown in the following list.

100 °C	125°C	150°C	180°C
8 '	3 '	1.5 '	1 '

* Optimal curing conditions depend on the curing oven.

Cleaning

Before curing:
The uncured adhesive can be removed with Zestron HC and other Zestron and Vigon cleaning materials - see separate application recommendations.
The cleaned parts must be completely dry before installing them in the machine.

After curing:
Because of the known residual thermoplasticity of the cured adhesive, defective components can be easily replaced by heating (with hot air) the cured adhesive joint above 100°C. After removing the component (torsion movement), the hot air should be focused on the remaining adhesive in order to remove it with a sharp tool.

Packing

The adhesives PD 955 M can be filled in various machine-specified syringes.

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Storage

Storage time:
6 months in a refrigerator, at a storage temperature of 5 - 12°C.
Storage in a refrigerator is recommended.
Remark: Storage at temperatures >30°C should be avoided.

See reverse for additional information

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Test results with the SMT-adhesive PD 955M according to Siemens Norm SN 59651**
Report date: April 29, 1996

Item:*	Test	Requirements	Results
2.1	Characteristics	good visible colour, filled in syringes bubble-free, particle size < 50 µm	red colour bubble-free particles < 30 µm
2.2	Viscosity	acc. to the agreement	passed
3.1	Storage Conditions	acc. to manufacturer´s data 6 months	passed
3.2	Open potlife	min. 8 hours	passed
3.3	Dispensability	reproducible - without stringing	passed
3.4	Tack time	min. 8 hours	passed
3.5	Components' adhesion before curing of adhesive	position change ≤ 0.15 mm	< 0.1 mm
3.6	Cleanability	completely cleanable	Zestron HC
4.1	Curing characteristics	acc. to manufacturer´s data	125 °C, 3 min.
4.2	Electrolytic corrosion effect according to IEC 426	known value should be no worse than A 1.4	passed
4.3.	Surface insulation resistance (comb sample test)	≥ $1 \cdot 10^{10}$ Ohm	$3.4 \cdot 10^{11}$ Ohm
4.4	Electrolytic corrosion effect (comb sample test)	no blistering, no dendritic growth	passed
4.5	Mass loss at working temperature	mass loss ≤ 1 %	passed
4.6	Adhesive spreading during curing	increase of diameter ≤ 10%	passed
4.7	Components' adhesion after curing of adhesive	≥ 5 N/mm² per component	0603: 15.6 N/mm² 0805: 14.4 N/mm² 1206: 15.9 N/mm² SOT23: 11.2 N/mm² SO14: 30.0 N/mm²
4.8	Components' adhesion after curing of adhesive (measured in soldering bath)	≥ 1 N with the component 1206	1.38 N
4.9	Reparability	SMD replacement without damage	passed

*According to SN 59651, Issue November 1994.
**The tests were performed in the Siemens Central Laboratory ZPL1TW22 in Berlin.
Person who performed the tests: Mr. Trodler

Issue from March 31,1999 AZM-TA

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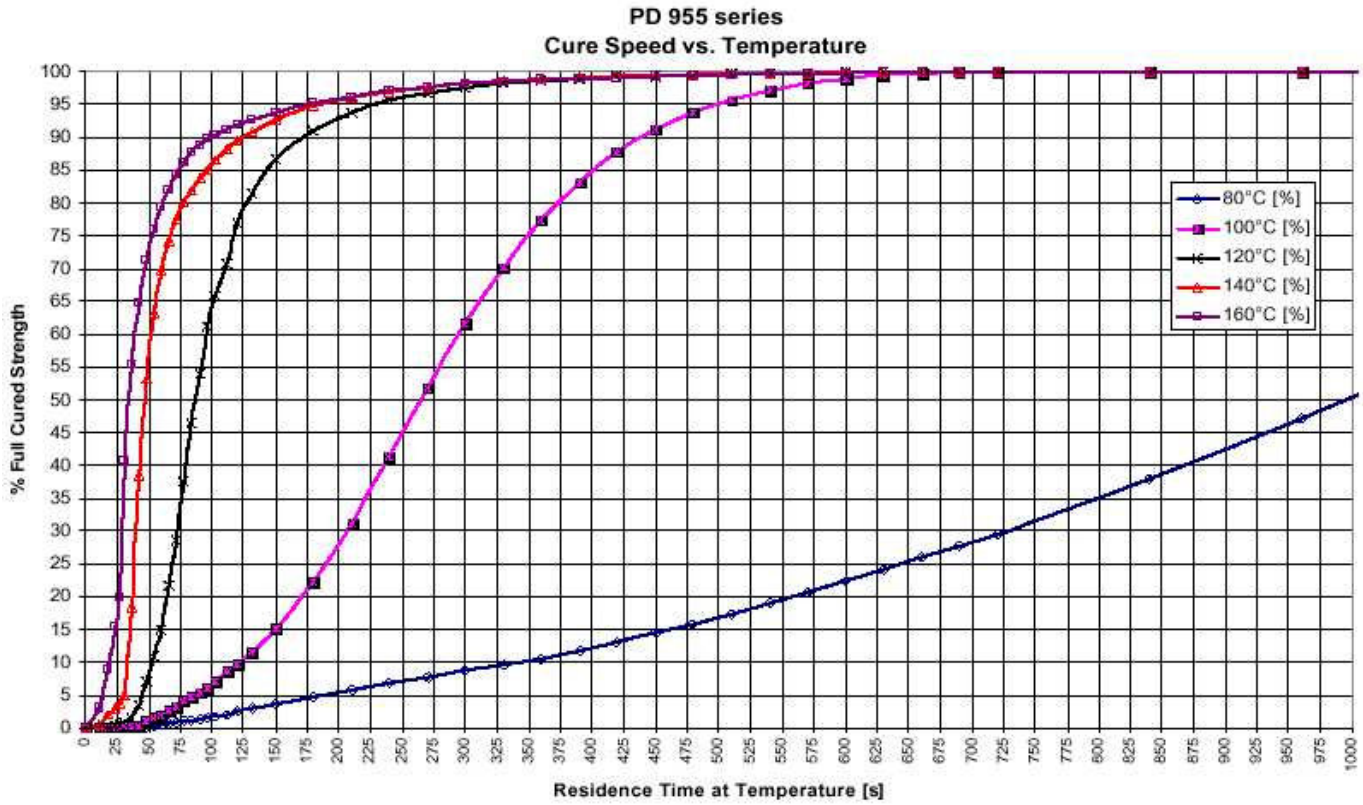

Adhesion is sufficient at 85 % full cured strength.

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