



Hysol® QMI 550SI

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PRODUCT DESCRIPTION

QMI 550SI is a silica filled non-conductive adhesive designed for use in stacked chip scale packages (SCSP) in the first die attach position. The adhesive works well with QMI 550 in the second and third die attach layer.

The material is hydrophobic and stable at high temperatures. These features produce void-free bond lines with excellent adhesive strength to a wide variety of organic and metal surfaces, including polyimide, BT, FR, and Au. A package or device manufactured with QMI 550SI will have high resistance to delamination and popcorning after multiple exposures to reflow temperatures.

The QMI 550SI is designed to achieve UPHs several orders of magnitude higher than conventional oven cured adhesives. Maximum productivity is realized through in-line cure, either on the diebonder using a post diebond heater or on the wirebonder preheater. Studies¹ have also shown improved coplanarity in parts cured on the diebonder.

"This product and its use may be covered by patent 5,717,034 and by one or more pending patent applications."

TYPICAL PROPERTIES

	QMI 550SI	Test Method
Viscosity 5 rpm @ 25°C, Cp	17,000	TM 547
Thixotropic Index (0.5/5 rpm)	4.8	TM 547
Pot Life @ 25°C, hours	12	TM 592
Shelf life @ -40°C, months	12	TM 589
Specific Gravity @ 25°C, (77°F)	1.62	TM 461
Extractable Ion Content, ppm		TM 449
Na ⁺ , K ⁺	≤20	
Cl ⁻ , F ⁻	≤20	
Die Shear (1 mil BLT, Ag-plated Cu, 300 mil/side die)		
Average kgf @ 25°C	23	TM 598
Moisture Absorption, wt. %		TM 590
168 hrs @ 85°C/85%RH	≤ 0.1	
Glass Transition Temperature, °C	42	TM 433
Coefficient of Thermal Expansion (TMA)		TM 433
α ₁ , ppm/°C	36	
α ₂ , ppm/°C	90	
DMA Modulus @ 25°C, GPA	1.5	TM 458

The above figures are typical material properties only and are not to be used for material specification purposes. To generate a specification for this product, please contact our Quality Manager and request a copy of the current stock specification.

STORAGE AND HANDLING

QMI 550SI is supplied in syringes and should be stored at -40°C. Please review Loctite's current Die Attach Handling Procedure for additional details on thawing and usage.

DISPENSING AND BONDLINE CONTROL

QMI 550SI adhesion is tested using 1 mil bondline thickness. Since thinner bondlines increase stress, please call your nearest Loctite Electronic Material technical service engineer for consultation in cases where bondlines less than 1 mil are desired. Optimization of diebonding parameters is strongly recommended to consistently meet target bondline thickness.

CURE SCHEDULE

QMI 550SI can be cured using a variety of times and temperatures, depending on the specific cure equipment. For maximum productivity improvement and production cost efficiencies, curing for ≥ 10 seconds @ 150°C² (SkipCure™) is recommended. QMI 550SI may be cured in conventional ovens or snap cure stations. For cure schedule recommendations, please contact your nearest Loctite Electronic Materials representative.

GENERAL INFORMATION

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

Data Ranges

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

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Loctite Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Loctite Corporation's products. Henkel Loctite Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Loctite Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

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