

MS5303

Modified Silicone for Electronics Devices

This product is moisture curing modified silicone adhesive for thermal conduction and is cured by the moisture in the air. The curing system of this product is alkoxy. It is not stinky and has fast curing properties. When curing, this resin is different from the traditional PU which contains isocyanate. This product has better adhesion strength than silicone type products.

FEATURE

- This product is used for various substrates bonding and has stable properties in a wide range of temperature.
- This product does not volatilize due to low molecular weight siloxane compounds.
- This is a one-component product, which is easy to use without mixing and this is a fast-curing product.
- This product complies to the 2011/65/EU RoHS regulations.
- This product complies to chlorine < 900 ppm, bromine < 900 ppm, chlorine + bromine < 1500 ppm.

TYPICAL UNCURED PROPERTIES

Properties	MS5303
Composition	Polyether resin
Appearance	Liquid
Color	Black
Viscosity *25°C, cps	100,000 ~ 200,000 S14, 10 rpm
Thixotropic Index	> 2
Specific Gravity	2.48
Solvent Content %	0

TYPICAL CURING PROPERTIES

Properties	MS5303
Surface Dry Time, min	10
Full curing time, 2.6 mm, 25°C, 50%RH, hr	16
Full curing time, 2.9 mm, 25°C, 50%RH, days	1
Full curing time, 3.4 mm, 25°C, 50%RH, days	2
Full curing time, 4.2 mm, 25°C, 50%RH, days	3
Full curing time, 5.5 mm, 25°C, 50%RH, days	7

DIRECTION OF USE

1. It should be applied to a clean surface which is free of dirt, grease or mold release. In many cases, a simple solvent wipe is sufficient.
2. Pour or brush this product onto the substrates, it does not recommend to stir to avoid interfusing the air. This product will be cured with the air. The curing properties depend on its thickness, curing temperature and relative humidity.

3. The bottom of the resin might not be cured in thicker application, such as casting, because the bottom of the resin contacts with moisture rarely. It is recommended to prolong the curing time in order to let the moisture spread from the surface to the bottom. It can also cast the resin two times. Cast the resin to the half height at the first time. When the surface is tacky, cast the resin for the second time.

4. Use this product as soon as possible after opening the original packages. When not using, please replace the lid tightly and store in a cool and dry place.

5. Cure time on the really part will depend upon factors such as part geometry, materials to be bonded, bondline thickness and humidity. Cure schedule should be confirmed with actual production parts and equipment.

6. The cured resin is not harmful to human when touching the skin.

TYPICAL CURED PROPERTIES

Properties	MS5303
Glass Transition Temp., (MDSC), °C	-40
Coefficient of Thermal Expansion, ppm	109
Water Absorption Ratio (25°C/24hr), %	0.5
Elongation, %	140
Volume Shrinkage, %	2.22
Hardness (Durometer), shore A ASTM D2240-03	83
Temperature Range, °C	-40 ~ 120
Shear Strength, PC vs PC, kgf/cm ²	14
Shear Strength, ABS vs ABS, kgf/cm ²	13
Shear Strength, PMMA vs PMMA, kgf/cm ²	18
Shear Strength, PET vs PET, kgf/cm ²	22
Shear Strength, PVS vs PVC, kgf/cm ²	24
Shear Strength, Cu vs Cu, kgf/cm ²	29
Shear Strength, SUS vs SUS, kgf/cm ²	22
Shear Strength, Glass vs Glass, kgf/cm ²	34
Shear Strength, Al vs Al, kgf/cm ²	26

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Properties	MS5303
Thermal Conductivity, W/mK	1.7
Volume Resistivity, ohm-cm	2.2 x 10 ¹⁴
Surface Resistivity, ohm	2.1 x 10 ¹⁵
Dielectric Constant, 100Hz	3.8
Dielectric Constant, 1KHz	3.7
Dielectric Constant, 1MHz	3.3
Dielectric Strength, KV/mm	16

THERMAL AGING

Thermal Strength, Al vs Al after curing, 25°C, 50%RH, 7 days, kg/cm²

Temperature	Shear Strength
25°C	26
50°C	26
80°C	25
100°C	12
150°C	5

Thermal Aging, -40°C/1hr ~ 100°C/1hr, kgf/cm²

Cycles	Shear Strength
0	25
100	34
200	35
300	33
400	39
500	37

High temperature and Humidity, 80°C, 90%RH, kgf/cm²

Time, hr	Shear Strength
0	26
24	32
72	39
168	35
500	33
1,000	39

STORAGE AND SHELF LIFE

The container should be kept without any possibility of moisture exposure. Replace the lid immediately after use. Shelf life of this product is six months when stored in dark place below 14~34°C in original, unopened containers.

CAUTION

Some findings indicate a lack of potential for carcinogenicity with the compositions of this product by long term recurrent application to the skin. However, contact with skin is likely to produce mild transient reddening. It is important to remove adhesive from skin with soap and water thoroughly. DO NOT use solvents for cleaning hands. This product is of moderate acute toxicity by swallowing. If swallowed, call a physician. Avoid contact with eyes. In case of contact, flush with water for at least 15 minutes and get medical attention immediately. For more information, refer to the Material Safety Data Sheet.

The data contained in this bulletin is provided only as a guide for evaluation/consideration. These material characteristics are typical properties that are based on a limited number of samples tested in the laboratory. We cannot assume responsibility for 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 product or method. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide.