

## SilCool\* TIA208R

Thermally Conductive Silicone Potting

### Description

SilCool TIA208R is a 2-component, thermally conductive material used for potting and gap filling. When cured at room temperature or quickly with heat, it cures to a thermally conductive rubber that adheres well to most metal and plastic substrates without the need for primers. The flowability of SilCool TIA208R allows it to conform to complex 3-dimensional shapes and cavities, filling voids and thereby creating a thermal path to remove heat.

### Key Features and Typical Benefits

- Primerless adhesion to metals and plastics
- Good thermal conductivity
- Ease of use 1:1 mixing ratio
- Quick cure and adhesion with heat or at room temperature
- Flame retardancy: UL94V-0 certified (File No: E56745)
- Continuous operating temperature range of -40 ~ 150°C
- UL RTI rating: 150°C

### Potential Applications

- Thermal potting for power supplies
- Drivers in LED light bulbs
- Ballasts and electronic devices

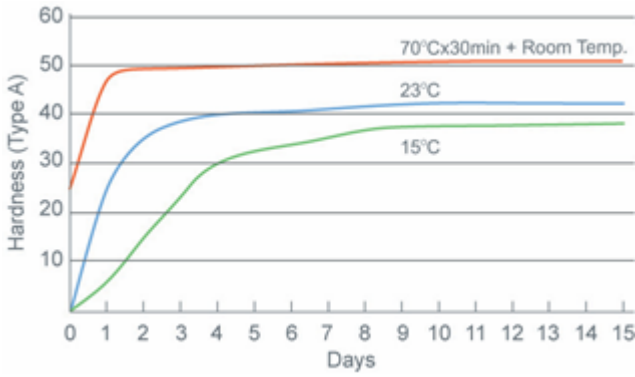
**Typical Physical Properties** (JIS K 6249)

| <b>UNCURED PROPERTY (23°C,50%RH)</b>   |                   | <b>Value</b>                       |                |
|--|-------------------|------------------------------------|----------------|
| Appearance                             |                   | Black (A)                          | Light Gray (B) |
| Viscosity                              | Pa·s              | 4.0 (A)                            | 3.8 (B)        |
| Mixing ratio by weight                 |                   | 1 : 1                              |                |
| Viscosity (mixed)                      | Pa·s              | 4.2                                |                |
| Workable Life                          | min               | 90                                 |                |
| Flowable Life                          | min               | 30                                 |                |
| Cure Condition (Heat Cure)             |                   | 70°C x 30min                       |                |
| Cure Condition (Room Temperature Cure) |                   | 23°C x 24H                         |                |
| <b>CURED PROPERTY (70°C x 30min)</b>   |                   |                                    |                |
| Appearance                             |                   | Thermally conductive rubber, Black |                |
| Density                                | g/cm <sup>3</sup> | 1.6                                |                |
| Hardness (Type A)                      |                   | 40                                 |                |
| Thermal Conductivity *1                | W/(m·K)           | 0.7                                |                |
| Tensile Strength                       | MPa               | 1.6                                |                |
| Lap Shear Adhesion Strength (AI)       | MPa               | 1.5                                |                |
| Lap Shear Adhesion Strength (PC)       | MPa               | 0.9                                |                |
| Volume resistivity                     | MW·m              | 8.0×10 <sup>6</sup>                |                |
| Dielectric strength                    | kV/mm             | 25                                 |                |
| Dielectric constant (60Hz)             |                   | 3.3                                |                |
| Dissipation factor (60Hz)              |                   | 0.016                              |                |
| UL Flame Retardancy                    |                   | V-0                                |                |
| UL RTI Rating                          |                   | 150                                |                |

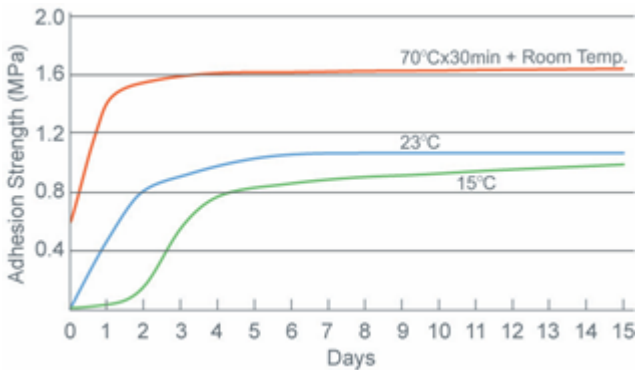
\*1: Hot wire method Typical properties are average data and are not to be used as or to develop specifications.

### Cure Profile

Hardness Build



### Adhesion Build



Note: Test data. Actual results may vary.

### General Considerations for Use

- Thoroughly stir Parts A and B thoroughly prior to mixing, as filler sedimentation may occur during storage. Stirring should be repeated for any material left standing for a period exceeding 3 weeks.
- Deaerate the mixture at 10~20mmHg for about 2 minutes to remove air entrapped during mixing.

The time required to de-gas the mixture will vary depending upon the volume of material.

- Materials such as water, sulfur, nitrogen compounds, organic metallic salts, phosphorus compounds, etc. contained in the surface of the substrate can inhibit curing. Preliminary testing is recommended in order to determine the compatibility.

While the typical operating temperature for silicone materials ranges from -45°C to 200°C, the long-term maintenance of its initial properties is dependent upon design

related stress considerations, substrate materials, frequency of thermal cycles, and other factors.

### **Current Packaging**

- SilCool TIA208R(A) silicone: 1.5kg can in cases of 10, 25kg pail
- SilCool TIA208R(B) silicone: 1.5kg can in cases of 10, 25kg pail

### **Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

### **Product Safety, Handling and Storage**

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

### **Limitations**

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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