

SG500 (6023) Thermally conductive grease

Introduction

SG500 is a highly thermally conductive silicone grease / compound. This property together with a low moisture and metallic impurity content makes it a suitable heat sink product for a wide variety of applications within the electronics and electrical industries.

Key Features

- **Low volatility**
- **Excellent thermal conductivity**
- **Good dielectric properties**
- **Low bleed at elevated temperatures**

Typical Applications

SG500 has a relatively soft consistency and high extrusion rate that facilitates application by syringe into small gaps. This allows it to be used when mounting semi-conductor devices on heat sinks, obviating air gaps between imperfectly mating surfaces. In this application it may be used in conjunction with electrically insulating mica washers without increasing electrical leakage in any way. Used within a semi-conductor device casing it affords excellent shock protection for diode elements and provides protection against inadvertent contamination of these elements before the devices are finally encapsulated

How to Use

Minor surface cracking of SG502 on long term storage is not a fault, but typical of this type of product. This effect disappears as soon as the surface is disturbed. If syringes are to be filled for injection of the product, care should be taken to avoid entrapment of air. All equipment used to handle the product can be cleaned readily with white spirit or other hydrocarbon solvents.

General Characteristics

The following are typical values for the product and should not be taken as specification limits.

| | |
|---|--------------|
| Rheology | Paste |
| Colour | White |
| Specific Gravity | 2.30 |
| Unworked Penetration, (cone weight g) mm/10t | |
| Worked Penetration, (cone weight g) mm/10t | |

Note: All penetration values have been measured according to Petroleum Standard IP50/69 or ASTM-D217-68

| | |
|---------------------------------|-------------|
| Weight Loss, 30 hours/ 200°C, % | 0.2 |
| Bleed, 30 hours / 200°C, % | 0.2 |
| Minimum working temperature °C | -50 |
| Maximum working temperature °C | 150 |
| Thermal Conductivity W/mK | 0.77 |

Electrical Properties

| | |
|--|----------------|
| Dielectric Strength at 1MHz, kV/mm | 10.92 |
| Dielectric Constant at 1MHz ASTM D-150 | 4.3 |
| Volume Resistivity, Ω.cm BS 6233 | 1.1E+15 |
| Power Factor at 1MHz BS 2067 | |
| Dielectric Breakdown Voltage kV | |
| Dissipation Factor at 1MHz: ASTM D-150 | 3.3E-3 |

Health and Safety

Detailed advice for the safe handling and disposal is given in the individual product Material Safety Data Sheets, available on request.

Packages

SG500 is supplied in non-returnable packages contact the sales office for details

Storage and Shelf Life

SG500 grease should be stored in its original sealed containers to prevent contamination of the product. If stored in its original sealed containers it is virtually unaffected by storage temperatures and will be stable under such conditions for **12 months**.

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