

EGel3100 Thermally conductive silicone gel

Introduction

EGel3100 is one of a family of soft, adherent, clear silicone elastomeric gels designed for the encapsulation and protection of electronics components. It is a low viscosity, 2-component system that is readily mixed in a 1:1 ratio. It is used to provide protection from vibration, thermal or mechanical shock. It has excellent dielectric properties and also gives excellent protection from water and many environmental contaminants

Key Features

- **Excellent thermal conductivity**
- **Low hardness, 45 shore 00**
- **1 to 1 mixing by weight or volume**
- **Heat accelerated curing**

Use and Cure Information

How to Use

EGel3100 is supplied in several pack sizes and consists of kits containing equal quantities of Parts 'A' and 'B'. Containers should always be kept sealed when not in use, and all mixing equipment must be clean and free from contaminants such as organo-tin, -sulphur, -nitrogen compounds which can poison the catalyst and prevent proper cure.

Application and Cure

Each of the **EGel3100** component parts should be mixed in the recommended one-to-one ratio (by volume or weight). This can be done readily either by hand or using a powered mixer, avoiding excessive aeration. The curing process begins as soon as the components are mixed and the working or pot life of the mixed system is dependent on the ambient temperature conditions. Note: Chilling the separate component parts, before and after mixing, will extend the pot life, but not indefinitely.

Adhesion

Fully cured **EGel3100** exhibits good adhesion to most substrates such as:
Aluminium, stainless steel, ABS, polycarbonate, PCB boards, Nylon 6,6

Inhibition of Cure

Great care must be taken when handling and mixing all addition cured silicone elastomer systems, that all the mixing tools (vessels and spatulas) are clean and constructed in materials which do not interfere with the curing mechanism. The cure of the rubber can be inhibited by the presence of compounds of nitrogen, sulphur, phosphorus and arsenic; organotin catalysts and PVC stabilizers; epoxy resin catalysts and even contact with materials containing certain of these substances e.g. moulding clays, sulphur vulcanised rubbers, condensation cure silicone rubbers, onion and garlic.

| Property | Test Method | Value |
|--|-------------|---------------------|
| Uncured Product | | |
| Colour: | | Grey |
| Appearance: | | Viscous grey |
| liquid | | |
| Viscosity A Part: | Brookfield | 26000 mPa.s |
| Viscosity B Part | Brookfield | 32000 mPa.s |
| Catalysed viscosity | Brookfield | 29000mPa.s |
| Pot Life: | | 60 minutes * |
| SG 'A'Part | | 2.03 |
| SG 'B'Part | | 2.03 |
| * measured at 23+/-2°C and 65% relative humidity | | |

Cured Elastomer

(after 7 days cure at 23+/-2°C and 65% relative humidity)

| | | |
|---------------------------|-----------|---------------|
| Shore 00 | | 45 |
| Thermal Conductivity: | | 1.55 W/mK |
| Min. Service Temperature: | | -55°C |
| Max. Service Temperature: | AFS 1540B | 200 °C |

Electrical Properties

| | | |
|----------------------|------------|-----------------------|
| Volume Resistivity: | ASTM D-257 | 1.0E+14 Ω.cm |
| Dielectric Strength: | ASTM D-149 | >18.0 kV/mm |

Curing Time

| Temperature °C | Time |
|----------------|----------------|
| 25 | 8 hrs |
| 100 | 30 mins |

All values are typical and should not be accepted as a specification.

Health and Safety - Material Safety Data Sheets available on request.

Packages –

EGEL 3100 is available as a 60 kg kit.

Storage and Shelf Life – Expected to be **12 months** in original, unopened containers below 40°C.

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