Rhodorsil® Silicone Grades for Coating and impregnating protection

> Advantages of Rhodorsil® resins

Bluestar Silicones offer a broad range of Silicone resins. After drying and crosslinking, these resins form flexible or rigid films that confer remarkable properties to the treated surfaces. Their heat stability is outstanding: resins offer effective protection at high temperatures (typically in the range of 200°C and over for short period of time). They resist well to oxidation and have good dielectric properties. These remarkable characteristics make them particularly suitable for numerous electrical and electronic applications, such as: insulation of printed circuit, electronic assemblies of flexible materials, impregnation of glass cloth braids, braided cables, mica tapes, electrical motor coils, etc.

Motor windings

Mica tapes

Printed circuit
Rhodorsil® resins for Coating and impregnating protection

### General properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Standards</th>
<th>Units</th>
<th>R 991</th>
<th>Adhesive 8805</th>
<th>R 8160 M</th>
<th>R 8060 M</th>
<th>R 8170 P</th>
<th>R 8152 P</th>
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<tr>
<td>Appearance</td>
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<td>Solvent</td>
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<td>Specific gravity</td>
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<td>Viscosity at 23°C</td>
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<td>mPa.s</td>
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<td>3 000 to 6 000</td>
<td>10 to 20</td>
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<td>Flash point (closed cup)</td>
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<td>°C</td>
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<td>Dielectric strength</td>
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</table>

### Dielectric properties

#### Key performance properties

- **Heat and weather resistances**
  Thanks to the high bonding energy of the siloxane bonds, the temperature of thermal decomposition is very high which explains their excellent heat and weather resistances.

- **Electrical insulation**
  Silicone resins preserve their very high electrical properties over a wide range of temperatures.

- **Water repellency**
  Thanks to the outstanding mobility of siloxane bonds and the orientation of the non polar methyl groups in the molecular structure, the surface of the cured material presents an excellent water repellency.

- **Rigid or flexible structures**
  Silicone resins are highly branched 3-dimensional polymers. After crosslinking, the backbone structure of the cured material can be either rigid or flexible depending on specific formulations.

- **High adhesion behaviour**
  Specific grades are available in order to maximize the adhesion between many different substrates (ie: glass clothes, mica tape, etc.).
> In order to provide optimum service, Bluestar Silicones has developed a complementary range of various type of products.

**Primer application**
Adhesion promoters formulated to achieve a cohesive adhesion between Silicone/metal and Silicone/epoxy resins during vulcanization process (i.e. epoxy rods, metallic clamps in composite insulator applications).

**Bonding**
Mono component or bi-component elastomers tailored to secure a cohesive adhesion between:
> Cured elastomers.
> Cured elastomers and other substrates.

**Local insulation and protection**
Mono component elastomers (fluid or in dispersion) used as coating to promote a specific protection of glass and ceramic insulators. Silicone pastes intended for in situ protection of electrical device, such as electrical connexions, circuit breakers, cable terminals and other distribution accessories in corrosive or humid atmospheres.
Rhodorsil® Adhesive ESA 7244 A & B

Rhodorsil® Adhesive ESA 7244 A & B is solventless. Its low viscosity enables easy coating and covering. After polymerization, Rhodorsil® Adhesive ESA 7244 A & B is transformed into a flexible adhesive film which is particularly resistant to thermal, climatic and environmental attack.

So, the outstanding resistance to climatic and aging agents ensures that the product carries out its functions for a long time. Rhodorsil® Adhesive ESA 7244 A & B is intended for bonding to metal, plastic and epoxy surface in various electrical applications.

Rhodorsil® Pastes 4 and M 494

Rhodorsil® Pastes 4 and M 494 are polydimethylsiloxanic oils based silicone paste together with inert fillers. These pastes are particularly adapted to protection and insulation of electrical switchgear and to protection applications against humidity.

These pastes, chemically inert and highly hydrophobic, present excellent dielectric properties and a very good stability of properties over a wide temperature range.

Adhesion of Rhodorsil® HCR, LSR and RTV to the insulator cores

To obtain maximum adhesion of the elastomer on the core, it is necessary to use a preliminary surface treatment. Rhodorsil® PM 820 or PM 811 A & B are the universal primers recommended for Rhodorsil® RTV, LSR and HCR. Our technical departments are also able to provide specific solutions that correspond both to your performance requirements and to the type of insulator core.
Rhodorsil® Silicone Grades for Potting

> Advantages of Rhodorsil® Silicone elastomers

There is no limit of the use of liquid silicone elastomers in the electrical and electronic industries, especially when protection of components against harmful environmental effects is required. Encapsulating, potting, impregnating, dipping, filling and casting are some examples of applications which can be considered. Polyaddition curing systems are the preferred insulating materials for these applications. Their acceptance is due to several factors including their excellent dielectric properties, mechanical strength, shock resistance, moisture resistance, excellent adhesion properties, aging and chemical resistance. Their ease of processing is also a well appreciated asset.