SM2059 reactive silicone emulsion is a reactive emulsion of an amine functional silicone polymer in water. The product cures to an elastomeric film without the need for a catalyst.

Key Features and Typical Benefits
- Good lubricity
- Easy release
- High temperature stability of silicone polymer
- Low volatility of silicone polymer
- Water dispersible

Potential Applications

**Chemical Specialties**
- Polishes & household cleaners
- Cured coatings on glass containers

**Textiles**
- Fiber & thread lubricants
- Nonwoven treatments
- Softeners & modifiers
- Water-repellent finishes

**Paint and Ink Additives**
- Mar resistance

**Water Repellant**
- Particle treatment
- Perlite & vermiculite coatings

### Typical Physical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Milky white liquid</td>
</tr>
<tr>
<td>Emulsifier type</td>
<td>Cationic</td>
</tr>
<tr>
<td>Silicone content, %</td>
<td>35</td>
</tr>
<tr>
<td>Density, g/cm³</td>
<td>0.99</td>
</tr>
<tr>
<td>Diluent</td>
<td>Water</td>
</tr>
<tr>
<td>Storage stability</td>
<td>12 months</td>
</tr>
</tbody>
</table>

Typical properties are average data and are not to be used as or to develop specifications.
SM2059 reactive silicone emulsion

**Processing Considerations**

Normally used at concentrations of 0.2 to 2.5% silicone. A 2.0% silicone concentration is an excellent starting point for evaluating this product in new applications.

**Cure Properties**

Upon evaporation, the product will cure to an elastomeric film.

**Hard Water Dilution**

Silicone emulsions are generally stable in hard water. However, should the water supply be of 200 ppm hardness or higher, softened water or boiler condensate is recommended as a diluent.

Dilution of the emulsion with water may result in the need for additional bacteriostat/fungistat to counteract possible microbial activity. It is recommended that each user evaluate the diluted emulsion before putting it into use. Depending on the specific applications and dilution level, it may be necessary to use additional bacteriostat/fungistat in the diluted product.

Silicone emulsions are shipped with sufficient biocide for preservation. Shipments of emulsions with sufficient biocide for all dilution levels in all applications is not feasible. Therefore, it is recommended that each user evaluate whether it is necessary to add additional biocide to diluted products.

**Reactive Fluid Emulsions**

The reactive silicone emulsions may not be compatible with certain materials. They are deactivated by acidic materials and may cause gellation of materials containing hydroxy (-OH) groups. Other materials such as anionics, lower alcohols, salts, etc., may break the silicone emulsion. It is recommended that any mixture of reactive emulsions with other materials be thoroughly checked before it is put into factory production.

**Freeze/Thaw Stability**

Freezing of all silicone emulsions has the potential to cause emulsion instability. The propensity for an emulsion to be destabilised as a result of freezing is dependent upon the emulsion formulation and the conditions under which it is frozen and thawed. All precautions to prevent freezing must be made in the handling, transferring and shipping of emulsions. It is recommended that the product is shipped in transportation that will keep the product above 4 °C (39 °F).

SM 2059 reactive silicone emulsion has been developed to exhibit resilience to destabilisation when frozen. If a container of SM 2059 reactive silicone emulsion is frozen and then properly thawed and mixed, it is possible that there will be no detrimental effect relative to the subsequent performance of the product, provided a sample of the product has a uniform appearance. To be properly thawed, the emulsion must be completely melted (at less than 50 °C) to a liquid state before any agitation of the product is attempted. Before a product that has been frozen is used, it is essential that a fully representative sample of the emulsion is taken, left to stand (> 12 hours) and then visually inspected for signs of separation. If there is any sign of instability, the product should not be used. These statements apply only to the emulsion itself and not to any dilutions made from the emulsion.

As with any water containing material, damage to the container may result from expansion of the liquid during freezing. Containers should therefore be inspected prior to thawing to insure that no leakage of liquid has or will occur.
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