DOWSIL™ 8016 Waterborne Resin

A novel low VOC silicone resin emulsion providing outstanding high temperature resistance to industrial paints (500–600°C).

Features & Benefits

- Low VOC silicone resin emulsion
- Non-flammable
- Oven curable silicone emulsion
- Suitable for air drying with tin free condensation catalysts as two-component cure system
- Recommended as film former for pigmented coatings and paints
- Provides high temperature resistance to industrial paints (500–600°C)
- Delivers high hardness
- Paint performance can be modulated with formulation
- High paint performance and aesthetics can be achieved without adding solvents/coalescents
- Excellent compatibility with organic polymer emulsions such as acrylate dispersions

Composition

- DOWSIL™ 8016 Waterborne Resin is a unique low VOC silicone resin emulsion containing alkoxy functionalities and 60% of active material.

Applications

- Protection of metal substrates
- Preferably formulated in pigmented coatings

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

<table>
<thead>
<tr>
<th>CTM¹</th>
<th>Property</th>
<th>Unit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>0176</td>
<td>Appearance</td>
<td></td>
<td>White liquid</td>
</tr>
<tr>
<td>0862</td>
<td>Actives’ content</td>
<td>%</td>
<td>60</td>
</tr>
<tr>
<td>0007</td>
<td>pH</td>
<td></td>
<td>9–10</td>
</tr>
<tr>
<td>0917</td>
<td>Flash point</td>
<td>°C</td>
<td>&gt; 100</td>
</tr>
<tr>
<td></td>
<td>VOC²</td>
<td>%</td>
<td>&lt; 1</td>
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</table>

1. CTM: Corporate Test Method, copies of CTMs are available upon request.
2. VOC assessment based on the theoretical evaluation of the information provided by Dow suppliers and the knowledge of Dow raw materials (components considered VOC under the DIRECTIVE 2004/42/CE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 April 2004)

Description

Low VOC silicone resin emulsion.
**How to Use**

DOWSIL™ 8016 Waterborne Resin can be cured in oven (physical drying) under the following recommended conditions (200°C, 1 h) to provide hard coatings. The coating can be also potentially air dried by using appropriate amounts of suitable condensation catalysts. It is usually recommended to use 1–3% of catalyst (titanate catalysts such as Titanium (IV) (triethanolaminato) isopropoxide solution) with regards to the coating/paint composition but the amount will vary depending on the level of flexibility, coating film thickness and level of hardness targeted by the user.

DOWSIL™ 8016 Waterborne Resin is specifically designed for waterborne systems and cannot be formulated in solvent based systems. Optimum performance will be achieved in heavily filled paint systems containing suitable temperature stable pigments, fillers and additional organic binders. We recommend adding the binder in the let down phase and not to expose it to excessive shear. Details on paint formulation and formulation guidelines are available upon request.

DOWSIL™ 8016 Waterborne Resin can be applied directly to metal. It is recommended to clean the metal surface to achieve optimum performance.

**Application Data**

Due to its chemical structure, DOWSIL™ 8016 Waterborne Resin provides an excellent resistance to high temperature (500°C–600°C) as measured by the discoloration, loss of adhesion and mass loss of the pigmented paint upon exposure to heat. The formulation of the paint/coating should however be optimized to obtain the best performance.

**Handling Precautions**

PRODUCT SHOULD BE GENTLY SHAKEN BEFORE USE.

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

**Usable Life and Storage**

When stored in a dry environment in its original and unopened container at or below 25°C (77°F), DOWSIL™ 8016 Waterborne Resin has a shelf life of 365 days from date of manufacture. Opened containers should be tightly closed after use to prevent contaminants from entering the product. The product needs to be properly shaken before use.

**Packaging Information**

The material is currently offered in 200 kg plastic drums, 20 kg pails and 1 L bottle samples.

**Technical Support**

For any questions/requests regarding Dow’s products, please “ask an expert” and contact our technical support team on dow.com.

**Limitations**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**Health and Environmental Information**

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.
Toxicological Information

The product can cause serious eye irritation. Precautions should thus be taken when handling this product to avoid skin contact and especially eye contact. Proper eye protection/face protection should thus be worn at any time. If in the eyes, rinse cautiously with water for several minutes, remove contact lenses if present and easy to do, and continue rinsing. If eye irritation persists, get medical advice/attention. In case of skin contact, wash off with plenty of water. The product carries a EUH208 label and contains components, which could cause an allergic reaction.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user’s responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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