LE-410
Description

LE-410 silicone emulsion is an emulsion of an organomodified silicone oil. The organic functionalization of the silicone backbone makes it an excellent candidate to consider for use in industrial applications that need high thermal stability, excellent compatibility with other organic components, superior release characteristics especially for rubber, foam control and excellent spreading and wetting characteristics. Once applied, LE-410 silicone emulsion imparts water resistance and is re-paintable and re-coatable. Additionally, LE-410 silicone emulsion is compliant with certain US Food and Drug Administration food contact regulations, as listed under Regulatory Status below.

Key Features and Typical Benefits

- Superior release and lubricating properties
- Excellent compatibility with organic resin systems
- Excellent emulsion stability
- High gloss, spreading and wetting
- Foam control
- Re-paintable and re-coatable
- FDA food contact-compliant

Typical Physical Properties

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>TYPICAL VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White liquid</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Emulsifier type</td>
<td>Non-ionic</td>
</tr>
<tr>
<td>Silicone content, %</td>
<td>35</td>
</tr>
<tr>
<td>Diluent</td>
<td>Water</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.99</td>
</tr>
<tr>
<td>Viscosity, cSt, 25ºC</td>
<td>10</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
</tbody>
</table>

Typical properties are average data and are not to be used as or to develop specifications.

**Typical Applications**
LE-410 silicone emulsion is an excellent candidate to consider as an additive for/as:

- General release applications
- A release agent for rubber parts
- Inks, paints and coatings to impart gloss, increased thermal stability and moderate foam control
- Applications requiring high thermal stability
- A lubricant in water based formulations
- A calender roll lubricant and threading aid in paper machines to help prevent the paper from sticking to the calender rolls without interfering with subsequent printing, gluing or coating of the paper

**Potential Application: Clupak Paper Production**
LE-410 silicone emulsion is an excellent candidate to consider for use in the manufacture of Extensible Paper. It can impart excellent release and lubricity between the paper and the heated drum at economical use levels typically without imparting detrimental effects to the end paper that may limit its end use. As a result, the paper may be printed, coated or glued. Further, it can enable full dough rise of packaged baking flour.

**Clupak Paper Applicaton - General Considerations for Use**
For this application, LE-410 silicone emulsion should be typically diluted to application strengths of about 2 to 3% in water. Diluted LE-410 silicone emulsion is generally
stable for extended periods of time in a tank with mild stirring at temperatures below 65°C. A typical application strength dilution containing 3% LE-410 silicone emulsion (1.05% silicone actives) can be prepared by stirring as-received LE-410 silicone emulsion into water as follows:

<table>
<thead>
<tr>
<th></th>
<th>Litres of LE-410 silicone emulsion as received</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>97.0</td>
<td>Litres water</td>
</tr>
<tr>
<td>100.0</td>
<td>Litres total</td>
</tr>
</tbody>
</table>

LE-410 silicone emulsion may be handled in steel tanks and piping as with any aqueous system. Improved rust inhibition may be obtained by adding 50grs of sodium nitrite (NaNO₂) to each 100 litres of diluted LE-410 silicone emulsion.

**Regulatory Status**
LE-410 silicone emulsion meets the requirements of the following US FDA regulations:

- 21 CFR §176.170: (Components of paper and paperboard in contact with aqueous and fatty foods)
- 21 CFR §176.180: (Components of paper and paperboard in contact with dry food)
- 21 CFR §177.2800: (Textiles and textile fibers)

**Patent Status**
Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

**Product Safety, Handling and Storage**
Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated
specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations
Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

Contact Information
For product prices, availability, or order placement, contact our customer service at Momentive.com/CustomerService/

For literature and technical assistance, visit our website at: www.momentive.com

DISCLAIMER:

THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC. AND ITS SUBSIDIARIES AND AFFILIATES (COLLECTIVELY “SUPPLIER”), ARE SOLD SUBJECT TO SUPPLIER’S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIER MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING ITS PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SUPPLIER’S STANDARD CONDITIONS OF SALE, SUPPLIER AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE
FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Supplier’s materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Supplier’s products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Supplier’s standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Supplier. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Supplier covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

Momentive and the Momentive logo are trademarks of Momentive Performance Materials Inc.