ROPAQUE™ X-TENDIN Opaque Polymer
Opacifying Polymer for High PVC Paints

Regional Product Availability

Asia-Pacific

Description

ROPAQUE™ X-TENDIN Opaque Polymer is an opaque white pigment slurry of a large void fraction designed to be used in coatings where the pigment volume concentration (PVC) is in the range of 50PVC and higher. ROPAQUE X-TENDIN Opaque Polymer offers formulators the potential to save costs and manage paint properties through formulating paints above the critical pigment volume concentration and at very low titanium dioxide levels.

ROPAQUE X-TENDIN Opaque Polymer is not recommended at PVC's below 50 as its relatively large particle size may decrease gloss and sheen levels. At these lower PVC's ROPAQUE ULTRA-E Opaque Polymer is recommended.

Key Features

- Increases titanium dioxide (TiO₂) efficiency through spacing and provides increased light scattering.
- Very low binder demand due to spherical shape with low surface area.

Benefits

- Offers cost savings to the formulator while providing equal hiding.

Typical Properties

(These properties are typical but do not constitute specifications).

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Values</th>
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</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Opaque, white to off-white liquid</td>
</tr>
<tr>
<td>Solids, by weight, %</td>
<td>26.5</td>
</tr>
<tr>
<td>Solids, by volume, %</td>
<td>52.3</td>
</tr>
<tr>
<td>Density (g/ml), wet</td>
<td>1.02</td>
</tr>
<tr>
<td>Density (g/ml), dry</td>
<td>0.50</td>
</tr>
<tr>
<td>pH</td>
<td>8.9</td>
</tr>
<tr>
<td>Viscosity (Brookfield LV #2, 60 rpm), cps</td>
<td>&lt; 350</td>
</tr>
<tr>
<td>Average particle size, µm</td>
<td>1.0</td>
</tr>
<tr>
<td>Chemical Type</td>
<td>Styrene-acrylic copolymer</td>
</tr>
<tr>
<td>Storage precautions</td>
<td>Protect from freezing</td>
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</tbody>
</table>
Reformulation Protocols

ROPAQUE™ X-TENDIN Opaque Polymer is designed for optimum usage in above critical pigment volume concentration (CPVC) water borne paints having titanium dioxide levels below 12% pigment volume concentration (PVC).

Reformulation of paints not previously containing ROPAQUE Opaque Polymers:
First calculate the %PVC of pigment and extenders in your formulation, the Total %PVC should be within the range of 50 to 85%.

TiO₂ % PVC
For TiO₂ % PVC’s greater than 6%, remove half of the TiO₂ % PVC. If TiO₂ level is below 6% PVC, then remove 1.5 % PVC units of TiO₂.

High Oil Absorption Extender
For high oil absorption extenders such as kaolinite clays and alumino-silicates, maintain an equal level of these materials in the reformulation.

ROPAQUE™ X-TENDIN Opaque Polymer
Add 8 to 12% PVC of ROPAQUE X-TENDIN Opaque Polymer to the reformulation.

Total % PVC
Increase the total % PVC of the reformulated paint by 2.5 % PVC units by adjusting the low oil absorption extender such as calcium carbonate, chlorite, or silica.

Maintain the volume solids of the reformulation equal/higher to that of the original.

Coalescent level may be increased to further improve scrub resistance and film formation.
Handling Precautions

Before using this product, consult the Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

Disposal

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 Coating Materials Technical Representative for more information.

Chemical Registration

Many countries within the Asia-Pacific require the registration of chemicals, either imported or produced locally, prior to their commercial use. Violation of these regulations may lead to substantial penalties imposed upon the user, the importer or manufacturer, and/or cessation of supply. It is in your interests to ensure that all chemicals used by you are registered. Dow does not supply unregistered products unless permitted under limited sampling procedures as a precursor to registration.

Note on Asia-Pacific Product Line

Product availability and grades vary throughout the countries in Asia-Pacific. Please contact your local Dow Coating Materials representative for further information and samples.

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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