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Dow Coating Materials: the expert’s expert

Dow Coating Materials continually strives to be the most innovative coatings raw material supplier, driving fundamental shifts in the coatings industry and moving the market as the expert’s expert in coatings solutions.

We’ve achieved a position as one of the world’s leading suppliers of architectural and industrial binders and additives, through collaboration, inspiration, innovation and growth, and offer material products, science, technology and manufacturing solutions to the architectural and industrial coatings industry worldwide. As one of the largest producers of raw materials for the coatings industry in architectural and industrial binders and additives, we are well positioned to find you answers which help you deliver the solutions your customers need.

From advanced hiding technologies to extreme exposure testing, we constantly rethink every aspect of the ways in which coatings can perform better and enhance our infrastructure and our lives. Innovations include:

— Low-VOC solutions for architectural and industrial coatings,
— Advanced hiding technology,
— Rheology modifiers and dispersants for all water-borne applications,
— Key ingredients for light industrial and wood coatings, traffic paint, and OEM applications,
— Formaldehyde abatement technology to improve indoor quality in buildings

In essence, we’re the experts’ expert.
Key technologies

Binders

The Dow Coating Materials line of binders is based on the most advanced Dow technology. In architectural coatings, paint formulators benefit from a comprehensive range of emulsion polymers for interior and exterior use, including wall and trim coatings, primers, stains and masonry coatings. We offer products with excellent adhesion to various substrates, enhanced tint retention, excellent dirt pick-up resistance and surfaces that are easy to clean without damaging the paint films. We also offer performance durability, low odour and an enhanced profile.

Our industrial coatings offering provides excellent adhesion to substrates, enhanced resistance, fast drying, and excellent whiteness and retro-reflectivity retention — for road marking paint application.

Hiding Technologies

Dow Coating Materials is one of the pioneers and global leaders in the category of opaque polymers, with over 30 years of experience around the globe. The extended EVOQUE™ Pre-Composite Polymer Technology range is designed to help paint formulators to increase the hiding efficiency of TiO₂, whilst ROPAQUE™ Opacifying Polymers have hollow-sphere particles specifically engineered to improve opacity and the whiteness of paint. This technology permits paint manufacturers to both optimise the total formulation and improve key attribute performance.

Our knowledge and expertise in hiding technologies and opaque polymers are globally recognised and we will continue to innovate in this area.
Rheology modifiers and thickeners

Dow Coating Materials offers an extensive portfolio of rheology modifiers and thickeners. Based on different technologies, they are designed to control the flow of paint and maximise a coating’s performance and application properties.

Our broad range of products are marketed under the ACRYSOL™, CELLOSIZE™ and WALOCEL™ trade names and are suitable for a wide range of applications from decorative paints to industrial and construction applications. They can be used separately, or in combination with one another.

ACRYSOL™ Rheology Modifiers with low as-shipped viscosity, are easy to incorporate and handle during the coating manufacturing process, and are resistant to microbial attack.

Dispersants

Dispersants are a small but key ingredient in paint. They bring compatibility and stability and lead to both economic and performance benefits. In architectural coatings their primary role is to ensure good pigment and filler dispersion which helps formulators to optimise the level of Titanium Dioxide TiO₂.

They also contribute to properties such as color acceptance, opacity, scrub, gloss, heat-aging and shelf-life. In industrial coatings water and corrosion resistance properties are key attributes.

Dow Coating Materials offer a range of polyacid and polymeric dispersants marketed under the OROTAN™ trade name with hydrophobic and hydrophilic grades, each with enhanced properties. They offer an unparalleled level of choice to the paint formulator from primers to top-coats, and interior to exterior applications.

Our dispersants have been designed for flawless compatibility with ACRYSOL™ Rheology Modifiers.
Decorative interior wall paints

Dow is a technology leader and one of the largest suppliers of emulsions technology for decorative paints in the world. We have a global manufacturing footprint and understand the market needs affecting our industry today. Dow’s portfolio for interior wall paints deliver application ease, performance, efficiency, cost and regulatory compliance. With Dow’s wide range of binders and additives, you can formulate interior paints which will offer solutions for your customer needs.

Innovations for interior wall paints include:

» A new binder technology that facilitates the formulation of low odour, low VOC, good performance interior wall paints that help to reduce significantly the amount of aldehydes in the interior air. The technology assists paint manufacturers to offer functional coatings that can help to purify the indoor air yielding benefits for the inhabitants while helping building owners comply with new regulations. Lab tests show that paints based on this binder technology can lower formaldehyde concentrations by 80% or more. The abatement is irreversible and water is the only by-product of the chemical reaction.

What can Dow technologies deliver for water-borne applications?

EVOQUE™ Binders & ROPAQUE™ Opacifying Polymer
- Optimal spacing to reduce the amount of TiO₂ in matt to semi-gloss paint formulation.
- High quality, low odour, low-VOC¹, interior matt to semi-gloss wall paints.
- Offers formulation-specific improvements in barrier properties, including improved stain resistance and easier stain removal.
- Strongly interacts with the surface of TiO₂, creating a polymer-pigment composite that contributes to tighter film formation.
- Contributes to improved TiO₂ distribution and light-scattering efficiency, whilst maintaining the same wet- and dry-hiding and tint strength.

PRIMAL™ Pure Acrylics
- Very good hiding, scrub and stain resistance,
- Suitable for use in kitchens and bathrooms,
- Very good color retention,
- High quality, low odour, low-VOC¹, interior matt to semi-gloss wall paints,
- Smart coating for improving indoor air quality via formaldehyde abatement.

PRIMAL™ Styrene Acrylics
- Versatile binder for interior, exterior and texture coatings.
- Very good application properties.

ACRYSOL™ Associate Rheology Modifiers, OROTAN™ Dispersants,
Dow has a complete range of formulation additives, 
- Broad formulation flexibility from low to high shear thickening,
- Excellent flow and leveling,
- Sag resistance,
- Good film building.

¹) VOC substances are not intentionally added and are not knowingly introduced from another raw material.
1) VOC substances are not intentionally added and are not knowingly introduced from another raw material.
2) APEO is not intentionally added and is not knowingly introduced from another raw material.
Water-based High Gloss paints

Dow’s product offering for sheen to high gloss trim paints are suited for formulating paints for window frames, doors, and skirting boards. Trim paints provide the finishing touches to home decoration on wood and non-wood surfaces like, MDF or HDF boards.

Dow’s products permit formulators to offer water-borne trim paints with the aesthetics of traditional alkyd-based paints, but with excellent durability and non-yellowing properties.

What can Dow technologies deliver for water-borne applications?

**PRIMAL™ Acrylics**
- Enhanced gloss, flow and leveling and ease of application, giving even and smooth surface properties,
- Fast drying and good block resistance,
- Low-VOC 1) levels,
- Scratch and mar resistance and good water and chemical resistance for topcoat applications.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Segment</th>
<th>Product name</th>
<th>Description, features and benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binders</td>
<td>High gloss to sheen interior and exterior paints</td>
<td>PRIMAL™ HG-91</td>
<td>Self cross-linking pure acrylic binder with good flow and leveling. Excellent film properties such as stain resistance, adhesion to aged alkyds, metal and wood substrates. Excellent exterior durability. Low odour, low VOC alternative to solvent-borne paints.</td>
</tr>
<tr>
<td></td>
<td>High gloss to sheen interior and exterior paints</td>
<td>PRIMAL™ HG-93</td>
<td>Self cross-linking Acrylic Styrene binder with good flow and leveling. Excellent film properties such as stain resistance, adhesion to aged alkyds, metal and wood substrates. Excellent exterior durability. Low odour, low VOC alternative to solvent-borne paints.</td>
</tr>
<tr>
<td>Thickeners</td>
<td>High-gloss paints</td>
<td>ACRYSOL™ RM 825</td>
<td>Excellent flow and levelling, highly efficient easy-to-use, low-mid shear HEUR associative thickener.</td>
</tr>
<tr>
<td></td>
<td>Satin to high-gloss paints</td>
<td>ACRYSOL™ RM-2020 NPR</td>
<td>Efficient high shear HASE thickener, low viscosity for easy handling. Gives excellent flow and levelling, syneresis resistance properties.</td>
</tr>
<tr>
<td>Dispersants</td>
<td>Matt to high-gloss paints</td>
<td>OROTAN™ 731-A</td>
<td>Versatile low odour hydrophobically-modified copolymer dispersant with excellent pigment wetting.</td>
</tr>
</tbody>
</table>

1) VOC substances are not intentionally added and are not knowingly introduced from another raw material.
Exterior masonry paints

Dow’s differentiated portfolio for exterior masonry paints deliver both enhanced aesthetic properties and excellent protection to mineral substrates from nature’s elements.

Masonry paint has to be durable and retain its original appearance, therefore properties like efflorescence and dirt pick-up resistance, as well as color and gloss retention are critical. Dow’s polymer technology leadership, supported by data from exposure stations around the globe allow us to offer a wide range of products and solutions. Dow is one of the technology leader in binders for elastomeric thick film paints with high elongation and crack-bridging properties while maintaining very good surface appearance.

What can Dow technologies deliver for water-borne applications?

**PRIMAL™, ELASTENE™, DIRTSHIELD™, EVOQUE™ Acrylics**
- Excellent exterior durability,
- Enhanced efflorescence resistance,
- Very good dirt pick-up resistance,
- Excellent gloss and color retention (especially for dark shades).

<table>
<thead>
<tr>
<th>Technology</th>
<th>Segment</th>
<th>Product name</th>
<th>Description, features and benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binders</td>
<td>Thin Masonry Film</td>
<td>PRIMAL™ AC-261S</td>
<td>Silane modified pure acrylic emulsion with enhanced exterior durability and water resistance.</td>
</tr>
<tr>
<td></td>
<td>Thin Masonry Film</td>
<td>EVOQUE™ 2242</td>
<td>Self film-forming 100% acrylic binder designed to optimally space TiO₂ and maximise pigment efficiency. Delivers paint film for enhanced barrier properties. Low-VOC, low odour, APEO, Ammonia/FA Free.</td>
</tr>
<tr>
<td></td>
<td>Thin Masonry Film</td>
<td>DIRTSHIELD™ 12</td>
<td>Self cross-linking pure acrylic binder designed for premium exterior paints. Excellent DPUR, exterior durability, water resistance. Low-VOC, low odour, APEO, Ammonia/FA Free fulfils Green Label requirement.</td>
</tr>
<tr>
<td></td>
<td>Elastomeric Wall</td>
<td>ELASTENE™ 3762</td>
<td>APEO free pure acrylic binder with high elongation properties and excellent dirt pick-up resistance. Excellent exterior durability, water resistance, long term flexibility.</td>
</tr>
<tr>
<td>Opaque polymers</td>
<td>Thin Masonry Film and Elastomeric Wall Coatings</td>
<td>ROPAQUE™ Ultra E</td>
<td>Enhanced organic opacifier allowing TiO₂ reduction while improving the paint film properties such as scrub, dirt pick-up resistance and color retention.</td>
</tr>
<tr>
<td></td>
<td>Thin Masonry Film and Elastomeric Wall Coatings</td>
<td>ROPAQUE™ OP-99</td>
<td>Enhanced organic opacifier allowing TiO₂ reduction, while improving the paint film properties such as scrub, dirt pick-up resistance and color retention.</td>
</tr>
<tr>
<td></td>
<td>Matt to semi-gloss paints</td>
<td>ROPAQUE™ Xtend 2</td>
<td>APEO Free opaque polymer with large void, designed for high PVC paint formulations.</td>
</tr>
<tr>
<td>Rheology modifiers and thickeners</td>
<td>Thin Masonry Film and Elastomeric Wall Coatings</td>
<td>ACRYSOL™ SCT-275</td>
<td>Mid shear HEUR associative thickener with minimal water sensitivity.</td>
</tr>
<tr>
<td></td>
<td>Thin Masonry Film and Elastomeric Wall Coatings</td>
<td>ACRYSOL™ RM-2020 NPR</td>
<td>High shear HEUR associative thickener with minimal water sensitivity.</td>
</tr>
<tr>
<td>Dispersants</td>
<td>Thin Masonry Film and Elastomeric Wall Coatings</td>
<td>OROTAN™ CA-2500</td>
<td>Hydrophobic co-polymer dispersant. Provides very good color acceptance and water streak mark resistance.</td>
</tr>
</tbody>
</table>
Furniture and Polished Wood

Regulatory and consumer-driven interest in lowering VOCs and HAPS are giving wood and composite wood manufacturers strong incentive to replace solvent-borne coatings with water-borne alternatives. Dow high-performance acrylic binders for furniture, kitchen cabinets, molding, joinery and other wood and engineered wood products are low-VOC capable and offer performance properties that are comparable to solvent-borne standards, including excellent chemical and stain resistance, scratch and mar resistance, early block and print resistance and excellent film clarity.

<table>
<thead>
<tr>
<th>Product</th>
<th>Wgt Solids %</th>
<th>pH</th>
<th>MFFT °C</th>
<th>Features and Benefits</th>
<th>Antiques look furniture</th>
<th>European style furniture</th>
<th>Joinery</th>
<th>Special application</th>
<th>Clear primer</th>
<th>Clear topcoat</th>
<th>Pigmented primer</th>
<th>Pigmented topcoat</th>
<th>Stain</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROSHIELD™ 530</td>
<td>46.5</td>
<td>7.8</td>
<td>25</td>
<td>Emulsion with superior water whitening resistance. Good durability for exterior application, good adhesion on special substrates like bamboo and rattan.</td>
<td>X</td>
<td>X</td>
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<tr>
<td>ROSHIELD™ 3311</td>
<td>40.5</td>
<td>7.5</td>
<td>42</td>
<td>New generation core-shell self-crosslinking 100% Acrylic emulsion with high transparency. Good water resistance and chemical resistance.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ROSHIELD™ 530</td>
<td>38.0</td>
<td>8.0</td>
<td>62</td>
<td>New generation hard 100% Acrylic Emulsion with excellent water resistance and film hardness. Good early sanding ability and block resistance.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
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</tr>
<tr>
<td>PROSPERSE™ 100</td>
<td>40.0</td>
<td>7.6</td>
<td>27</td>
<td>Polyurethane acrylic emulsion with ambient self-crosslinking technology. Good balance of hardness and flexibility. Good water and chemical resistance, quick hardness development and early block resistance.</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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