Product Safety Assessment

Acrylic Emulsion Rheology Modifiers and Thickeners


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Names
Trade names for these materials include but are not limited to the following:

- ACRYSOL™ Rheology Modifier
- ACRYSOL Thickener
- ACRYSOL ASE-1000 Thickener
- ACRYSOL ASE-60 ER Thickener
- ACRYSOL ASE-60 Thickener
- ACRYSOL ASE-75 Thickener
- ACRYSOL ASE-95 NP Thickener
- ACRYSOL DA-700 Rheology Modifier
- ACRYSOL DR-1 Thickener
- ACRYSOL DR-110 Thickener
- ACRYSOL DR-2 Thickener
- ACRYSOL DR-3 Thickener
- ACRYSOL DR-300 Thickener
- ACRYSOL DR-5500 Thickener
- ACRYSOL DR-6600 Thickener
- ACRYSOL DR-72 Thickener
- ACRYSOL DR-73 Thickener
- ACRYSOL DR-73 ER Thickener
- ACRYSOL G-111E Thickener
- ACRYSOL RM-55 Rheology Modifier
- ACRYSOL RM-7 Rheology Modifier
- ACRYSOL RM-935 Rheology Modifier
- ACRYSOL TT-615 Thickener
- ACRYSOL TT-678 Thickener
- ACRYSOL TT-935 Thickener
- PRIMAL™ Rheology Modifiers
- PRIMAL AP-10 Rheology Modifier
- PRIMAL AP-50 Rheology Modifier
- PRIMAL HT-300 ESP Thickener
- PRIMAL PR-9340 Rheology Modifier
- PRIMAL RM-10 BR Rheology Modifier
- PRIMAL TT-945M Thickener

Product Overview

- Acrylic emulsion rheology modifiers and thickeners are water-based emulsion polymers manufactured by Dow Coating Materials, a division of The Dow Chemical Company. This family of products consists of milky-white liquids.¹² For further details, see Product Description.
- Acrylic emulsion rheology modifiers and thickeners are added to latex-paint and other latex-based formulations to improve properties such as flow and leveling, stability to colorant addition, sag resistance, and spatter resistance. They are particularly well suited for low-sheen interior paints.³ For further details, see Product Uses.
- Acrylic emulsion rheology modifiers and thickeners are formulated into latex paints. Workers could be exposed during manufacture, formulation, transport, or use. Consumers could use

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interior or exterior latex paints containing these products. Always read the product information before use and follow the label/use instructions.\textsuperscript{4,5} For further details, see \textit{Exposure Potential}.

- Direct eye contact with these products may cause moderate irritation. Prolonged or repeated skin contact may cause slight irritation. Inhalation of product vapor or mist can cause headache, nausea, and irritation of the nose, throat, and lungs.\textsuperscript{6,7} For further details, see \textit{Health Information}.

- Acrylic emulsion rheology modifiers and thickeners are blends of acrylic resins suspended in water. If released to water or soil, the acrylic resin component would be expected to be inert in the environment. Due to their high molecular weight, the acrylic resin is not expected to accumulate in the food chain. Based on data from similar materials, acrylic resins are not considered harmful to fish or other aquatic organisms on an acute basis. For further details, see \textit{Environmental Information}.

- Acrylic emulsion rheology modifiers and thickeners are stable under recommended storage and normal use conditions. There are no known materials that are incompatible with these products.\textsuperscript{8,9} For further details, see \textit{Physical Hazard Information}.

\textbf{Manufacture of Product}

- \textbf{Locations} – These acrylic emulsion rheology modifiers and thickeners are manufactured globally by Dow Coating Materials, a division of The Dow Chemical Company, and its foreign affiliates.

- \textbf{Process} – These acrylic emulsion rheology modifiers and thickeners are formulated in batch operations using proprietary Dow materials and technology.

\textbf{Product Description}\textsuperscript{10}

Acrylic emulsion rheology modifiers and thickeners are blends of acrylic resins dispersed in water. They are essentially alkali-soluble emulsions (ASE) type thickeners, but with hydrophobic groups (groups that repel water) attached along the polymer backbone. At pH below approximately 6, these molecules are insoluble in water. At pH above 6, they become anionic (having a net electrical charge) and soluble in water and thus thicken at a pH greater than 7.

These products can be used to formulate low-odor paints. Some of them are capable of forming associations and adsorbing onto the surface of other dispersed particles in a system, providing greater thickening power. These products have minimal potential for microbial degradation and can provide a wide range of shear viscosities.

\textbf{Product Uses}\textsuperscript{11}

Acrylic emulsion rheology modifiers and thickeners are added to interior latex (water-based) paint and other formulations as thickeners and to improve the flow/sag balance of the paint; that is, they modify and improve the paint consistency and increase the ease of application. These products are also used for industrial coating applications.

\textbf{Exposure Potential}\textsuperscript{12,13}

Acrylic emulsion rheology modifiers and thickeners are added to latex paints and coatings. Based on the uses for these products workers and the general public could be exposed through:

- \textbf{Workplace exposure} – Workers who formulate these products may be exposed during maintenance, sampling, testing, or other procedures. Worker exposure could also occur
during paint application. The potential for exposure is reduced by proper use of personal protective equipment. Each facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit unnecessary exposure. See Health Information.

- **Consumer exposure to rheology modifiers and thickeners** – Consumers could come into contact with these products while applying interior or exterior latex paints. Always follow the product label/use instructions to minimize exposure potential. See Health Information.

- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, or groundwater. If released to water or soil, the acrylic resin component would be inert in the environment. Based on data from similar materials, acrylic resin is not biodegradable but would likely be removed by biological wastewater-treatment facilities via adsorption to biosolids. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill occurs, contain it immediately with sand or soil. Evacuate personnel and ventilate the area. Spilled material can create slippery conditions. Only trained and properly protected personnel must be involved in clean-up operations. Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – These water-based formulations are noncombustible. To extinguish combustible residues of these products, use water spray, carbon-dioxide or dry-chemical extinguisher, or alcohol-based foam. A direct water stream may spread the fire. Keep people away. Isolate the fire and deny unnecessary entry. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Health Information**

Health information for acrylic emulsion rheology modifiers and thickeners is summarized on the relevant Safety Data Sheets. It is important to note that health risks associated with individual products may vary based on their formulation or intended use. The Safety Data Sheet is the preferred source for specific health information. These products may also contain minor components or additives that have additional health risks. An overview of health information for acrylic emulsion rheology modifiers and thickeners appears below.

**Eye contact** – Direct contact with liquid or mist may cause slight to moderate eye irritation.

**Skin contact** – Prolonged or repeated contact may cause slight skin irritation.

**Inhalation** – Some products contain methanol. Excessive inhalation of mist or vapor of methanol-containing products may cause headache, nausea, dizziness, and irritation of the nose, throat, and lungs.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Environmental Information**

Acrylic emulsion rheology modifiers and thickeners are blends of acrylic polymers suspended in water. If released to water or soil, the acrylic polymers would be inert in the environment, but would likely be removed by biological wastewater-treatment facilities via adsorption to biosolids.
Due to their high molecular weight, acrylic polymers do not accumulate in the food chain. Based on data from similar materials, acrylic polymers are not considered harmful to fish or other aquatic organisms on an acute basis.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Physical Hazard Information**

Acrylic emulsion rheology modifiers and thickeners are stable under recommended storage and normal use conditions, however, shelf life may be affected if these products are allowed to freeze. There are no known materials that are incompatible with these products. Monomer vapors can be evolved when products are heated during processing operations. Use appropriate ventilation during processing.

For more information, request the Safety Data Sheet from the Dow Customer Information Group.

**Regulatory Information**

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of acrylic emulsion rheology modifiers and thickeners. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, or Contact Us.

**Additional Information**

- Request the relevant Safety Data Sheet from the Dow Customer Information Group ([www.dow.com/assistance/dowcig.htm](http://www.dow.com/assistance/dowcig.htm))
- Contact Us ([www.dow.com/assistance/thoughts.htm](http://www.dow.com/assistance/thoughts.htm))

For more business information about Dow acrylic emulsion rheology modifiers and thickeners, view the relevant Dow Products and Services webpage at www.dow.com/products.

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