Product Safety Assessment

DOW™ Self-Crosslinking Acrylic Emulsions
(All Acrylic Binders for Non-Wovens)

Product Safety Assessment documents are available at www.dow.com/productsafety/finder/.

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Names
• DOW™ Self-Crosslinking Acrylic Emulsions (acrylic binders for non-woven applications)
• RHOPLEX™ E-358 emulsion
• RHOPLEX E-32 NP emulsion
• RHOPLEX E-940 emulsion
• RHOPLEX E-2780 emulsion
• RHOPLEX E-3082 emulsion
• RHOPLEX HA-8 emulsion
• RHOPLEX HA-12 emulsion
• RHOPLEX HA-16 emulsion
• RHOPLEX K-3 emulsion
• RHOPLEX NW-1402 emulsion
• RHOPLEX TR-520 emulsion
• RHOPLEX TR-934HS emulsion
• RHOPLEX TR-38HS emulsion
• RHOPLEX TR-3349 emulsion
• RHOPLEX ST-954 emulsion
• PRIMAL™ HA-24 emulsion
• PRIMAL E-940 emulsion

Product Overview
• DOW™ self-crosslinking acrylic emulsions include several families of water-based acrylic emulsions manufactured by Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, and its foreign affiliates. They are milky-white liquids with an acrylic (slightly sweet) or ammonia-like odor and are marketed under the trade names RHOPLEX™ acrylic emulsions and PRIMAL™ acrylic emulsions. For further details, see Product Description.
• DOW self-crosslinking emulsions are commercial products used in several industries, including construction and textiles. For further details, see Product Uses.
• Worker exposure to DOW self-crosslinking emulsions is possible during manufacture, transport, or application. Exposure potential is minimized through engineering controls and the use of personal protective equipment. Consumer products, such as automotive and furniture upholstery, drapery fabric, or carpeting may be manufactured with these products. For further details, see Exposure Potential.
• Health information for DOW self-crosslinking emulsions is summarized on the relevant Safety Data Sheets. Health risks associated with individual products may vary based on their formulation or intended use. In the industrial setting, eye contact with product liquid or mist
may cause slight to moderate irritation. Prolonged or repeated skin contact may cause slight irritation. Inhalation of product vapor or mist can cause irritation of the nose, throat, and lungs and headache or nausea. For further details, see Health Information.

- Based on environmental profiles for similar materials, the acrylic resin components of DOW™ self-crosslinking emulsions would be expected to be inert in the environment. Due to their high molecular weight, the acrylic resins are not expected to accumulate in the food chain. Based on similar materials, the acrylic resins are not considered harmful to fish and other aquatic organisms. For further details, see Environmental Information.
- DOW self-crosslinking emulsions are stable under recommended storage and use conditions. For further details, see Physical Hazard Information.

Manufacture of Product

- **Locations** – Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, manufactures acrylic emulsions in various locations in the United States. Its foreign affiliates also manufacture these materials in global locations outside the U.S.
- **Process** – DOW™ self-crosslinking emulsions are produced and formulated using proprietary Rohm and Haas materials and technologies.

Product Description

DOW™ self-crosslinking emulsions include several families of water-based acrylic emulsions manufactured by Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, and its foreign affiliates. They are milky-white liquids with an acrylic (slightly sweet) or ammonia-like odor and are marketed under the trade names RHOPLEX™ acrylic emulsions and PRIMAL™ acrylic emulsions. They range from 45% to 60% polymer solids. These products are prepared with active sites that crosslink (cure) when baked at high temperature. The use of catalysts can accelerate the curing process or lower the curing temperature.

Product Uses

DOW™ self-crosslinking emulsions are commercial products used as binders and coatings in several industries, including construction materials and textiles. They can be applied to woven and nonwoven backing materials using a variety of techniques. Once cured, the coatings are resistant to aging and degradation by light and heat. Fabrics manufactured with DOW self-crosslinking emulsions are used for the following applications:

- Automotive upholstery
- Furniture upholstery
- Drapery
- Mattress ticking
- Pile (e.g., artificial fur fabrics for outerwear and apparel or boot linings)

Exposure Potential

DOW™ self-crosslinking emulsions are used in the production of industrial and consumer products. Based on the uses for these products, the public could be exposed through:

- **Workplace exposure** – DOW self-crosslinking emulsions are formulated in closed systems using engineering controls that help to prevent the escape of liquid or vapors and minimize...
release to the environment. The potential for exposure is further reduced by proper use of personal protective equipment. Workers who formulate these products may be exposed during maintenance, sampling, testing, or other procedures. Worker exposure could also occur during application to fabrics. Each facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit exposure. See Health Information.

- **Consumer exposure to products containing DOW™ self-crosslinking emulsions** – DOW self-crosslinking emulsions are not sold directly to consumers; however, automotive and household fabrics used by consumers may be manufactured with these products. Contact with the dried and cured product would not be expected to represent a risk. See Health Information.

- **Environmental releases** – DOW self-crosslinking acrylic emulsions are maintained and used under strictly controlled conditions and, as a result, environmental releases are expected to be minimal. In the event of a spill, the focus is on containing the spill to prevent contamination of soil and surface or ground water. If released to water or soil, the acrylic resin components would be inert in the environment. If released to surface waters, the acrylic resin components would initially remain dispersed in water, but eventually settle into the sediment. Based on data from similar materials, acrylic resins are 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 does occur, evacuate personnel and ventilate the area. Keep people upwind and away from spill or leak. Wear personal protective equipment. Contain spilled material with sand, earth or soil. Spilled material can create slippery conditions. Transfer liquids and solid diking material to separate suitable containers for recovery or disposal. Follow recovery and disposal procedures carefully. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – These formulations are noncombustible. Use extinguishing media appropriate for the surrounding fire. Dried product residue can burn. 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 DOW™ self-crosslinking emulsions 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. Some products may contain minor components or additives that have additional health risks. The Safety Data Sheet is the preferred source for specific health information. An overview of health information for DOW self-crosslinking acrylic emulsions appears below.

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

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

**Inhalation** – Inhalation of product vapor or mist during processing can cause irritation of the nose, throat, and lungs. Headache and nausea are also possible.
Other – Most of these products are formulated with 500 to 600 parts per million (ppm) of formaldehyde. Additional formaldehyde may be released during the curing process. Formaldehyde is considered a suspected human carcinogen.

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

Environmental Information

The acrylic resin components of DOW™ self-crosslinking emulsions have a high molecular weight, low water solubility, and are nonvolatile. The acrylic resin components are expected to be relatively inert in the environment. If introduced to soil, they are expected to remain in soil. If released to water, the acrylic resin components would initially remain dispersed in water, and then eventually settle into the sediment. Although polymeric components are considered essentially non-biodegradable, they are expected to slowly degrade in the environment, including degradation by physical action or by exposure to sunlight.

Due to their high molecular weight, acrylic resins are not expected to accumulate in the food chain (low bioconcentration potential).

Based on data from similar materials, DOW self-crosslinking emulsions 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

DOW™ self-crosslinking emulsions are stable under recommended storage and use conditions. Spilled product can create slippery conditions.

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 DOW™ self-crosslinking emulsions. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, Technical Data Sheet, or Contact Us.

Additional Information

- Request 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)

References


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