Product Safety Assessment

Acrylic Emulsion Products for Building and Construction Applications


Select a Topic:
Names
Product Overview
Manufacture of Product
Product Description
Product Uses
Exposure Potential
Health Information
Environmental Information
Physical Hazard Information
Regulatory Information
Additional Information
References

Names
- Acrylic Emulsion Products for Building and Construction Applications
- Acrylic emulsion copolymers
- Acrylic emulsion products
- Acrylic emulsions
- Acrylic polymers

Acrylic Emulsion Products for Building and Construction Applications include several different products having the trade names ACRYSOL™ Emulsions, ELASTENE™ Emulsions, FINNDISP™ Emulsions, LIPACRYL™ Emulsions, PRIMAL™ Emulsions, and RHOPLEX™ Emulsions, in addition to other trade name families. It should be noted that not all products with these trade names are covered by this Product Safety Assessment. Please contact Dow Construction Chemicals to obtain information regarding specific products. Trade names for representative products include, but are not limited to, the following:

- LIPACRYL™ MB-3640 Emulsions
- RHOPLEX™ 3805 Emulsions
- RHOPLEX AC-630 Emulsions
- RHOPLEX CS-4000 Emulsions
- RHOPLEX EC-1791 Emulsions
- RHOPLEX EI-2000 Emulsions
- RHOPLEX GL-720 Emulsions
- RHOPLEX MC-1834 Emulsions

Product Overview

- Acrylic Emulsion Products for Building and Construction Applications are water-based, emulsion polymers or copolymers of various acrylic monomers that are milky-white liquids with an ammonia or acrylic odor.\(^1\)\(^2\) For further details, see Product Description.
- Acrylic Emulsion Products for Building and Construction Applications are used as additives in adhesives, binders, caulks, cements, coatings, and sealers, as well as other nonwoven applications.\(^3\)\(^4\)\(^5\)\(^6\) For further details, see Product Uses.
- Worker exposure to these products is possible during manufacture, formulation, transport, application, or use. Consumers may be exposed by using materials that contain these products.\(^1\) For further details, see Exposure Potential.
**Product Safety Assessment: Acrylic Emulsion Products for Building and Construction Applications**

- Direct eye contact with these products may cause slight irritation. Prolonged or repeated skin contact can cause slight irritation. Inhalation of vapor or mist can cause headache, nausea, and irritation of nose, throat, and lungs. Some products contain low levels (less than 1%) of formaldehyde, which is classified as a possible human carcinogen. For further details, see [Health Information](#) and the relevant [Safety Data Sheet](#).
- The polymers in these products have limited biodegradability, but would likely absorb into soil, suspended solids, or sediments in the environment and be removed by biological wastewater-treatment facilities via adsorption to biosolids. They are high molecular weight polymers and are not likely to accumulate in the food chain (bioconcentrate). Based on relevant data for similar products, these products are considered practically nontoxic to aquatic organisms on an acute basis. For further details, see [Environmental Information](#).
- These products are stable under recommended storage and normal use conditions and do not undergo any known hazardous reactions. For further details, see [Physical Hazard Information](#).

**Manufacture of Product**

- **Locations** – The Dow Chemical Company and its global affiliates manufacture Acrylic Emulsion Products for Building and Construction Applications at various locations globally.
- **Process** – These products are manufactured by mixing various liquid acrylic monomers in water with a suitable surfactant. Once the monomers are emulsified to form a stable monomer-in-water suspension, a polymerization reaction is initiated and the monomers react to form acrylic polymers or copolymers that remain in a stable suspension or emulsion.

**Product Description**

Acrylic Emulsion Products for Building and Construction Applications are water-based, emulsion polymers or copolymers of various acrylic monomers that are milky-white liquids with an ammonia or acrylic odor. They range from 45% to 60% solids depending on the product.

**Product Uses**

Acrylic Emulsion Products for Building and Construction Applications are used primarily in industrial and commercial applications as additives in adhesives, binders, caulks, cements, coatings, and sealers, as well as other nonwoven applications. These emulsions provide a variety of performance enhancements, such as improved adhesion, durability, and flexibility, as well as resistance to chemicals, corrosion, dirt-pickup, solvents, and water. Examples of uses for these products include:

- **Adhesives/Binders** – new concrete to existing concrete applications, asphalt and built-up roofing systems, exterior insulation and finish systems, and spray polyurethane foam applications.
- **Cement modifier** – spray coatings, stuccos, and underlayments, and applications where excessive vibration and heavy traffic are expected.
- **Caulk/sealants** – economical non-spec caulks to high-performance sealants.
- **Coatings** – specially designed for cement and other non-resilient surfaces such as metal. Used in primers, interior/exterior clear sealers, deck coatings, and pigmented coatings.

**Exposure Potential**

Acrylic Emulsion Products for Building and Construction Applications are used primarily in the production of industrial and commercial products. Based on the uses for these products, the public could be exposed through:

- **Workplace exposure** – Exposure can occur in an emulsion manufacturing facility or during formulating or application operations using these products. Those working with these products in manufacturing could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing 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 Acrylic Emulsion Products for Building and Construction Applications** – Dow does not sell these products for direct consumer use, but consumers may come into contact with these products in adhesives,

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[1] Trademark of The Dow Chemical Company (“Dow”) or an affiliated company of Dow.

[2] Dow does not sell these products for direct consumer use, but consumers may come into contact with these products in adhesives.
**Product Safety Assessment:** Acrylic Emulsion Products for Building and Construction Applications

binders, coatings, concrete mixtures, and/or sealers intended for home building and construction. Used as an additive, these products, are fixed in a matrix after drying and the potential for consumer exposure is negligible. Always read the product label prior to use and follow product instructions carefully. Contact with the dried and cured product is not considered to present a risk to consumers. See Health Information.

- **Environmental releases** – Small quantities of these products may be released into the environment during application or use of materials containing these products or when these products are discarded. In the event of a spill, the focus is on immediate containment to prevent contamination of soil, surface water, or groundwater. For small spills, the products should be absorbed with inert materials such as sand or earth. These products are expected to be inert in the environment. If released to surface water, the products would initially remain dispersed in water, but the polymers would eventually adsorb to suspended solids or settle into the sediments. The polymers are not expected to biodegrade, but would likely be removed by adsorption onto biosolids in biological wastewater-treatment facilities. Minor components of some of these emulsions are considered highly to moderately toxic to aquatic organisms on an acute basis but are not present at significant levels. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the product should be collected, captured, and reprocessed or disposed of according to applicable governmental requirements. Keep away from and upwind of spills and leaks. Respiratory and personal protective equipment is recommended for cleaning up spills and leaks, including Neoprene gloves. These products can create slippery conditions. Keep spills and cleaning runoff out of sewers and open bodies of water. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area. Although these products are not combustible until evaporated to dryness, they can spatter when heated above 100°C (212°F). The dried residue can burn. Use extinguishing techniques that are suitable for the materials surrounding the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Keep fire water out of waterways and sewers to minimize the potential for environmental damage. Follow emergency procedures outlined in the Safety Data Sheet carefully. See Environmental, Health, and Physical Hazard Information.

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

**Health Information**

Health information for Acrylic Emulsion Products for Building and Construction Applications is summarized on the relevant Safety Data Sheets. These products may also contain minor components or additives that have additional health risks. It is important to note that health risks associated with individual products vary based on their formulation. The Safety Data Sheet is the preferred source for specific health information. An overview of health information for these products appears below.

**Eye contact** – Direct contact can cause slight irritation.

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

**Inhalation** – Inhalation of vapor or mist can cause headache, nausea, and irritation of nose, throat, and lungs.

**Ingestion** – Ingestion of small, incidental amounts is not considered harmful.

**Other** – Some products may contain low levels of formaldehyde (CAS No. 50-00-0) and may generate additional formaldehyde during the curing process. Formaldehyde is classified as a possible human carcinogen.

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

**Environmental Information**

Environmental information for Acrylic Emulsion Products for Building and Construction Applications is summarized on the relevant Safety Data Sheets. These products may also contain minor components or additives that have additional environmental impact. It is important to note that environmental impact associated with individual products may vary based on formulation or intended use. The
Safety Data Sheet is the preferred source for specific environmental information. An overview of environmental information for these products appears below.

These products would be expected to be inert in the environment. If released to surface waters, they would initially disperse and the polymers would eventually adsorb onto suspended solids or settle into the sediment. The polymers would likely be removed by biological wastewater-treatment facilities via adsorption to biosolids.

Because of their high molecular weight, the polymers in these products would not be expected to accumulate in the food chain (low bioconcentration potential). Some of these products contain minor components such as aqua ammonia, formaldehyde, and diphenylketone that are individually highly toxic (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested) to moderately toxic (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested) to aquatic organisms on an acute basis. However, these components are present at low levels. Based on available data, these products are considered practically nontoxic to aquatic organisms on an acute basis (LC50/EC50 greater than 100 mg/L in the most sensitive species tested).

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

Physical Hazard Information
These products are stable under recommended storage and normal use conditions. They do not undergo any known hazardous reactions. Prevent products from freezing. Formaldehyde can be generated under acidic conditions.

For more information, request the relevant 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 Products for Building and Construction. 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 the relevant Safety Data Sheet and Technical Data Sheet from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/dowcig.htm)


References
1 The Dow Chemical Company. RHOPLEX™3805, Material Safety Data Sheet.
2 The Dow Chemical Company. RHOPLEX™ EC-1791 Emulsion, Material Safety Data Sheet.
3 The Dow Chemical Company. RHOPLEX™ CS-4000 Emulsion, Technical Data Sheet.
4 The Dow Chemical Company. RHOPLEX™ EC-1791, Technical Data Sheet.
5 The Dow Chemical Company. RHOPLEX™ GL-720, Technical Data Sheet.
NOTICES

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

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