Product Safety Assessment

Styrene Acrylic Emulsion Products for Building and Construction Applications


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

Representative trade name products include, but are not limited to, the following:
- DURAMAX™ B-1022 Emulsion
- EXP™-4269 Emulsion
- MAINCOTE™ AE-58 Emulsion
- MORKOTE™ 370 Emulsion
- OROTAN™ CA-2500 Emulsion
- PRIMAL™ APR-696 Emulsion
- PRIMAL AS-398 Emulsion
- PRIMAL AS-48/RHOPLEX™ AS-48 Emulsion
- PRIMAL AS-727 Emulsion
- PRIMAL AS-728 Emulsion
- PRIMAL AS-730 Emulsion
- PRIMAL AS-8012 Emulsion
- PRIMAL DC-420 Emulsion
- PRIMAL MA-1000 Emulsion
- RHOPLEX™ 2019R Emulsion
- RHOPLEX 2019RX Emulsion
- RHOPLEX CS-3800 Emulsion
- RHOPLEX NW-1715K Emulsion
- ROPAQUE™ OP-96 Emulsion
- ROPAQUE ULTRA Emulsion
- ROPAQUE ULTRA-E Emulsion
- ROPAQUE ULTRA-EF Emulsion
- UCAR™ LATEX D 161 DCC Emulsion
- UCAR LATEX R 161 DCC Emulsion
- UCAR LATEX R 161 N DCC Emulsion
- UCAR LTX R 161 E DCC Emulsion

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Product Overview

- Styrene Acrylic Emulsion Products for Building and Construction Applications are water-based, emulsion copolymers of styrene and various acrylic monomers that are milky-white liquids with an ammonia or acrylic odor.¹² For further details, see Product Description.
- These products are used in concrete and roofing applications to improve or provide flexibility, heat sealability, salt stability, and/or water resistance.³⁴⁵⁶ For further details, see Product Uses.
- Worker exposure to these products is possible during manufacture, formulation, transport, application, or use. They are primarily for industrial or commercial application, but individual consumers may use materials that contain these products.¹ For further details, see Exposure Potential.
- Eye or skin contact with these products can result in slight irritation. Inhalation of vapor or mist can cause headache, nausea, and irritation of nose, throat, and lungs.¹ For further details, see Health Information and the relevant Safety Data Sheet.
- The copolymers in these products have limited biodegradability, but would likely adsorb onto soil, suspended solids, or sediments in the environment, and would be removed by biological wastewater-treatment facilities via adsorption to biosolids. They are high molecular weight copolymers 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.¹ For further details, see Environmental Information.
- These products are stable under recommended storage and normal use conditions. They do not undergo any known hazardous reactions.¹ For further details, see Physical Hazard Information.

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Manufacture of Product

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

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Product Description¹²

Styrene Acrylic Emulsion Products for Building and Construction Applications are water-based, emulsion copolymers of styrene and various acrylic monomers that are milky-white liquids with an ammonia or acrylic odor. They range from 40% to 60% solids depending on the product.

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Product Uses¹⁴⁵⁶

Styrene Acrylic Emulsion Products for Building and Construction Applications are used in concrete and roofing applications. They are used primarily in industrial and commercial applications as additives to adhesives, binders, concrete mixtures, coating mixtures, and/or sealing mixtures to improve or provide flexibility, heat sealability, salt stability, and/or water resistance. Examples of uses for these emulsions include:

- Architectural binder coatings
- Cement mortar and concrete additives
- Concrete membrane applications
- Concrete sealing
- Roof maintenance coatings

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Exposure Potential¹

Styrene 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, individuals 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,
**Environmental Information**

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

**Health Information**

Health information for Styrene 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 may vary based on 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 eye irritation.

**Skin contact** – Prolonged or repeated contact 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 are not considered harmful.

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

**Environmental Information**

Environmental information for Styrene 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 the environmental impact associated with individual products may vary based on formulation. The Safety Data Sheet is the preferred source for specific environmental information. An overview of environmental information for these products appears below.

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

Because of their high molecular weight, the copolymers in these products would not be expected to accumulate in the food chain (low bioconcentration potential). Aqua ammonia, a minor component in some products, is highly toxic to aquatic organisms on an acute basis (LC₅₀/EC₅₀ between 0.1 and 1 mg/L in the most sensitive species tested). However, this component is present at low levels and is readily biodegradable in the presence of oxygen. Based on these factors and data from similar products, 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
Styrene Acrylic Emulsion Products for Building and Construction Applications are stable under recommended storage and normal use conditions. They do not undergo any known hazardous reactions. Prevent these 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 Styrene Acrylic Emulsion Products for Building and Construction Applications. 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™ CS-3800 Emulsion, Safety Data Sheet.
2 The Dow Chemical Company. RHOPLEX™ NW-1715K, Safety Data Sheet.
3 The Dow Chemical Company. RHOPLEX™ 2019RX, Technical Data Sheet.
4 The Dow Chemical Company. RHOPLEX™ AS-48, Technical Data Sheet.
5 The Dow Chemical Company. RHOPLEX™ CS-3800, Technical Data Sheet.
6 The Dow Chemical Company. RHOPLEX™ NW-1715K, 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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