Product Safety Assessment

Ionomer Emulsions


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Names
• Ionomer emulsions
• ADCOTE™ 37-220 Emulsion

Product Overview
• Ionomer emulsions are water-based, ionomer products that are applied as liquids and then dried to form heat sealable coatings. For further details, see Product Description.
• Ionomer emulsions are used to provide heat-sealable and peelable coatings to aluminum, polyethylene, and other packaging materials. For further details, see Product Uses.
• Exposure can occur either in facilities that manufacture ionomer emulsions or in the various industrial or manufacturing facilities that use these products. They are produced, distributed, stored, and consumed in closed systems. Those working with ionomer emulsions in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Dow does not sell these products for direct consumer use, but they are used in packaging materials with which consumers may come into contact. Consumers would only contact dried and cured products, which are not considered to present a risk. For further details, see Exposure Potential.
• Skin or eye contact is essentially nonirritating, and these products are not toxic if swallowed. Repeated exposures are unlikely to cause significant adverse effects. For further details, see Health Information.
• Ionomer emulsions are expected to slowly degrade in the environment. Due to their high molecular weight, these products are not expected to accumulate in the food chain and they are not expected to be toxic to fish or other aquatic organisms on an acute basis. For further details, see Environmental Information.
• Ionomer emulsions are stable at recommended storage and normal use conditions. They can spatter above 100°C (212°F). For further details, see Physical Hazard Information.
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Manufacture of Product
- **Locations** – Global affiliates of Rohm and Haas Company, a wholly owned subsidiary of The Dow Chemical Company, manufacture Ionomer emulsions. Some product grades are also formulated by approved contract manufacturers in Europe to meet stringent Dow specifications for quality and performance. The products are manufactured and formulated in locations and quantities necessary to meet market demand.
- **Process** – Ionomer emulsions are produced by emulsion polymerization using proprietary methods and materials.

Product Description
Ionomer emulsions are water-based, ionomer products that are applied as liquids and then dried to form heat sealable coatings. They are typically about 30% solids.

Product Uses
Ionomer emulsions are used to provide a heat-sealable and peelable coating to aluminum, polyethylene, and other packaging materials.

Exposure Potential
Ionomer emulsions are used in the production of industrial and consumer products. Based on the uses for these products, individuals could be exposed through:
- **Workplace exposure** – Exposure can occur either in facilities that manufacture Ionomer emulsions or in the various industrial or manufacturing facilities that use these products. They are produced, distributed, and stored in closed systems. Those working with Ionomer emulsions in manufacturing operations 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 avoid exposure. See Health Information.
- **Consumer exposure to products containing Ionomer emulsions** – Dow does not sell these products for direct consumer use, but they are used in packaging materials with which consumers may come into contact. Consumers would only contact dried and cured products, which are not considered to present a risk. Products used for food-contact applications should comply with applicable regulations set by the U.S. Food and Drug Administration (FDA) and by the European Union (EU). 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 soil, Ionomer emulsions will tend to bind to soil. If released to water they will initially disperse, but the solids would eventually bind to suspended solids and sediment. The solids will likely be removed in biological wastewater-treatment facilities by 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, these products should be captured, collected, and reprocessed or disposed of according to applicable governmental regulations. See Environmental, Health, and Physical Hazard Information.
- **In case of fire** – These products will not burn unless they have been evaporated to dryness. The residue is combustible. Use extinguishing methods appropriate for the surrounding materials. 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 carefully. See Environmental, Health, and Physical Hazard Information.

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

Health information for Ionomer 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. An overview of health information for Ionomer emulsions appears below. However, these products may also contain minor components or additives that have additional health risks. The Safety Data Sheet is the preferred source for specific health information.

**Eye contact** – Contact is essentially nonirritating to the eyes.

**Skin contact** – Contact is essentially nonirritating to the skin.

**Inhalation** – Products are non-volatile, so inhalation is considered unlikely.

**Ingestion** – Products are not expected to be toxic if accidentally swallowed.

**Repeated exposure** – Based on available data, repeated exposures are unlikely to cause significant adverse effects.

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

**Environmental Information**

Environmental information for Ionomer emulsions is summarized on the relevant Safety Data Sheets. These products may also contain solvents or additives that have additional environmental impact. It is important to note that environmental impact associated with individual products may vary based on their formulation or intended use. The Safety Data Sheet is the preferred source for specific environmental information. An overview of environmental information for Ionomer emulsions appears below.

Ionomer emulsions are nonvolatile and water dispersible. If released to soil, they will tend to bind to soil. If released to water they will initially disperse, but eventually the solids will coagulate and bind to suspended solids and sediment.

These products are not considered biodegradable, but would degrade slowly by various chemical and physical processes. They would likely be removed in biological wastewater-treatment facilities by adsorption to biosolids.

These products are not expected to accumulate in the food chain (bioconcentration potential is low) due to their high molecular weight and are expected to be practically nontoxic to aquatic organisms on an acute basis ($LC_{50}/EC_{50} >100$ mg/L for the most sensitive species).

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

**Physical Hazard Information**

Ionomer emulsions are stable at recommended storage and normal use conditions. These products can spatter when heated above 100°C (212°F). There are no known materials that are incompatible with these products.

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 Ionomer 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 Sheets or Technical Data Sheets from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/assistance/dowcig.htm)

For more business information about Ionomer emulsions, visit the Dow Customer Information Group at www.dow.com/assistance/dowcig.htm.

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