Product Safety Assessment

ACIMA™ CYCLOXIM Products


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Names
• CAS No. 100-64-1
• Cyclohexanone oxime
• (Hydroxyimino)cyclohexane
• Antioxidant D

Product Overview
• ACIMA™ CYCLOXIM products are solid cyclohexanone oxime compounds that are available as flakes, free-flowing powders, and compacted solids. For further details, see Product Description.
• ACIMA CYCLOXIM products are primarily formulated at 0.1 to 0.4% into isocyanate-based paints and varnishes, where they act as blocking or drying agents to help prevent the premature formation of skins on coatings. For further details, see Product Uses.
• Dow does not sell these products for direct consumer use, but small amounts (less than 0.5%) may be formulated into paints and varnishes used by consumers. The levels in formulated materials are not considered to present an exposure concern. For further details, see Exposure Potential.
• Contact is essentially nonirritating to the eyes and skin. Although the acute toxicity of these products is moderate, repeated high exposures can be harmful. For further details, see Health Information.
• These products are expected to degrade in the environment, are unlikely to accumulate in the food chain (predicted bioconcentration potential is low), and are practically non-toxic to aquatic organisms on an acute basis. For further details, see Environmental Information.
• ACIMA CYCLOXIM products are stable under recommended storage and use conditions.

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Product Description

ACIMA™ CYCLOXIM products are solid cyclohexanone oxime compounds that have low odor and relatively high purity (greater than 94%). They are available as flakes, free-flowing powders, and compacted solids.

Product Uses

ACIMA™ CYCLOXIM products are primarily formulated at 0.1 to 0.4% by weight into isocyanate-based paints and varnishes, where they act as blocking or drying agents to help prevent the premature formation of skins on coatings. They also help improve gloss and can be formulated into inks and dipping processes. Cyclohexanone oxime is also used as an intermediate in the production of caprolactam, a precursor of nylon-6 resin, and in other chemical reactions.

Exposure Potential

ACIMA™ CYCLOXIM products are used in the production of industrial and consumer products. Based on the uses for this product, individuals could be exposed through:

- **Workplace exposure** – Exposure can occur either in a facility that manufactures ACIMA CYCLOXIM products or in the various industrial or manufacturing facilities that use these products. They are produced, transported, and stored in closed systems until use. Those working with these products 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 limit exposure. See Health Information.

- **Consumer exposure to products containing ACIMA CYCLOXIM products** – Dow does not sell ACIMA CYCLOXIM products for direct consumer use, but small amounts (less than 0.5%) may be formulated into paints and varnishes used by consumers. The levels in formulated materials are not considered to represent an exposure concern. See Health Information.

- **Environmental releases** – Small quantities of these products may be released into the environment if consumer products that contain them are disposed of improperly. If released, these products will tend to remain in the water. Since these products are expected to biodegrade in the environment, they are likely to be removed from water and soil environments, including biological wastewater treatment plants. In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface water, and groundwater. For small spills, ACIMA CYCLOXIM products should be absorbed with inert materials such as sand or soil. 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 requirements. See Environmental, Health, and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use water spray, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. Irritating or harmful gases can be released in a 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 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 ACIMA™ CYCLOXIM products 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. 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. An overview of health information for these products appears below.

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

**Skin contact** – Contact is essentially nonirritating to the skin.
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**Inhalation** – Inhalation at room temperature is unlikely because of the low vapor pressure.

**Ingestion** – The acute toxicity of these products is moderate.

**Repeated exposure** – Some animal feeding studies have suggested that repeated exposure to these products may be harmful.

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

Environmental Information

ACIMA™ CYCLOXIM products are moderately water soluble and have low volatility. If released to the environment, they would tend to remain in water with minimal tendency to bind to soil and sediment.

ACIMA CYCLOXIM products are unlikely to persist in the environment. They are expected to be susceptible to biodegradation, which suggests that they will be removed from water and soil environments including biological wastewater treatment facilities.

ACIMA CYCLOXIM products are unlikely to accumulate in the food chain (predicted bioconcentration potential is low) and are practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >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

ACIMA™ CYCLOXIM products are stable under recommended storage and normal use 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 ACIMA™ CYCLOXIM products. 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 Safety Data Sheets and Technical Data Sheets from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/acima/contact/)
- “Cyclohexanone oxime, CAS No. 100-64-1,” Tier 1 Screening SIDS Dossier on the HPV Phase Chemical, U.S. Environmental Protection Agency, Second Draft, July 29, 2008 (http://www.epa.gov/hpv/pubs/summaries/cycloxim/c16215rr.pdf)

For more information about ACIMA™ CYCLOXIM products, visit the ACIMA Specialty Chemicals web site at www.dow.com/acima/product/.
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