Product Safety Assessment

**ACIMA™ Zinc Octoate and Zirconium Octoate Catalysts**


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#### Names
- ACIMA™ Zinc Octoate 18
- ACIMA Zinkoctoat 18
- Bis(2-ethylhexanoic acid), zinc salt
- 2-Ethylhexanoic acid, zinc salt
- Zinc bis(2-ethylhexanoate)
- Zinc EHA
- ACIMA Zirconium Octoate 18
- ACIMA Zirkonoctoat 18
- Bis(2-ethylhexanoic acid), zirconium salt
- 2-Ethylhexanoic acid, zirconium salt
- Zirconium bis(2-ethylhexanoate)
- Zirconium EHA

**Product Overview**
- ACIMA™ zinc octoate and zirconium octoate catalysts are metal organic compounds supplied by ACIMA AG fur Chemische Industrie, a wholly owned subsidiary of The Dow Chemical Company. ACIMA Zinc Octoate 18, is a light yellow liquid with the zinc salt of 2-ethylhexanoic acid dissolved in one or more organic solvents. ACIMA Zirconium Octoate 18 is a clear liquid with the zirconium salt of 2-ethylhexanoic acid dissolved in a petroleum-based organic solvent. For further details, see [Product Description](#).
- ACIMA zinc octoate and zirconium octoate catalysts are used as catalysts for many chemical reactions, as corrosion inhibitors, and as driers in paints, lacquers, and other coatings. For further details, see [Product Uses](#).
- Worker exposure to ACIMA zinc octoate and zirconium octoate catalysts is possible during manufacture, transport, or use. Dow does not sell these products for direct consumer use, so consumer exposure to them is highly unlikely. For further details, see [Exposure Potential](#).
- Brief skin contact may cause moderate irritation with local redness. Prolonged or widespread skin contact may result in absorption of potentially harmful amounts. These products have low toxicity if swallowed; however, swallowing larger amounts may cause injury and reproductive effects. For further details, see [Health Information](#) or request the relevant Safety Data Sheet from the [Dow Customer Information Group](#).
- ACIMA zinc octoate and zirconium octoate catalysts are expected to degrade in the environment. They are unlikely to accumulate in the food chain (bioaccumulation potential is low) and range from slightly toxic to moderately toxic to aquatic organisms on an acute basis. The solvent components in these products range from readily to inherently biodegradable, have a low tendency to...
accumulate in the food chain, and range from practically nontoxic to moderately toxic to aquatic organisms on an acute basis. For further details, see Environmental Information.

- ACIMA™ zinc octoate and zirconium octoate catalysts are stable under recommended storage and normal use conditions. Avoid contact with strong acids and oxidizing agents. For further details, see Physical Hazard Information.

Manufacture of Product
- **Locations** – ACIMA AG fur Chemische Industrie, a wholly owned subsidiary of The Dow Chemical Company, supplies ACIMA™ zinc octoate and zirconium octoate catalysts from its facilities in Buchs, Switzerland.
- **Process** – ACIMA zinc octoate and zirconium octoate catalysts are manufactured by the reaction of a zinc or zirconium compound with a carboxylic acid.

Product Description
ACIMA™ zinc octoate and zirconium octoate catalysts are metal-organic compounds formulated as viscous liquids. ACIMA Zinc Octoate 18, is a light yellow liquid with the zinc salt of 2-ethylhexanoic acid dissolved in heavy petroleum naphtha and a glycol ether. ACIMA Zirconium Octoate 18 is a clear liquid with the zirconium salt of 2-ethylhexanoic acid dissolved in heavy petroleum naphtha.

Product Uses
ACIMA™ zinc octoate and zirconium octoate catalysts act as catalysts by delivering a metal ion (zinc or zirconium) to a chemical reaction. They are used as catalysts for many organic chemical reactions, including those that produce polyurethane, silicone, and other polymers. They are also used as corrosion inhibitors and as driers in paints, lacquers, and other coatings.

Exposure Potential
ACIMA™ zinc octoate and zirconium octoate catalysts 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 facilities that manufacture ACIMA zinc octoate and zirconium octoate catalysts or in the various industrial or manufacturing facilities that use these catalysts. They are produced, distributed, stored, and consumed in closed systems. Those working with these catalysts 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 zinc octoate and zirconium octoate catalysts** – Dow does not sell ACIMA zinc octoate and zirconium octoate catalysts for direct consumer use. These catalysts are expended in the chemical reaction or encapsulated at very low levels in the final product, so consumer exposure is highly unlikely. However, organic zinc and zirconium compounds are also formed in the environment by microorganisms through the methylation of inorganic zinc and zirconium. See Health Information.

- **Environmental releases** – If released to the environment, the zinc octoate and zirconium octoate components will tend to float in water and will be removed in wastewater treatment facilities by adsorption to biosolids. The solvent components will exhibit low to high tendencies to volatilize from water. In air, the solvents will degrade within days from exposure to photochemically produced hydroxyl radicals. Since the solvent components range from readily to inherently biodegradable, they are expected to be removed from water and soil environments, including biological wastewater treatment plants. In the event of a spill, the focus is on immediate containment to prevent contamination of soil, surface water, and groundwater. See Environmental, Health, and Physical Hazard Information.

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, immediately contain the spill using sand or soil. Prevent these catalysts from entering drains, sewers, or bodies of water. Evacuate personnel to safe areas. Wear appropriate personal protective equipment. Transfer liquids and solid diking materials to separate suitable containers for recovery or disposal. See Environmental, Health, and Physical Hazard Information.
In case of fire – Deny any unnecessary entry into the area. Use water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. During a fire, irritating and highly toxic gases and/or fumes may be generated. 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™ zinc octoate and zirconium octoate catalysts 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. The Safety Data Sheet is the preferred source for specific health information. These products may also contain minor components or additives that have additional health risks. An overview of health information for ACIMA™ zinc octoate and zirconium octoate catalysts appears below.

Eye contact – Contact with products or solvents can result in eye irritation.

Skin contact – Brief contact may cause moderate skin irritation with local redness. Prolonged or widespread skin contact may result in absorption of potentially harmful amounts.

Ingestion – These products have low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury and reproductive effects.

Reproductive Toxicity and Effects – When exposed to water, these products may hydrolyze into 2-ethylhexanoic acid. In laboratory animal studies, 2-ethylhexanoic acid has been toxic to the fetus at doses nontoxic to the mother.

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

Environmental Information

The zinc octoate and zirconium octoate components in these products are insoluble in water and nonvolatile. If introduced to the environment, they will float in water and eventually bind to soil, suspended particles, or sediment. The solvent components in these products exhibit a range of volatility and water solubility. When introduced, the solvents will have low to high tendencies to evaporate from water with low to high tendencies to bind to soil and sediment.

ACIMA zinc octoate and zirconium octoate catalysts are unlikely to persist in the environment. Zinc octoate and zirconium octoate can dissociate into metal ions and carboxylic acids that are readily biodegradable. The solvents range from readily to inherently biodegradable, which suggests that they will be removed from water and soil environments, including biological wastewater treatment plants. In the atmosphere, the solvents will also degrade within days by reaction with photochemically produced hydroxyl radicals.

ACIMA zinc octoate and zirconium octoate catalysts are unlikely to accumulate in the food chain (bioaccumulation potential is low). The zinc octoate and zirconium octoate components range from slightly toxic (LC50/EC50 between 10 and 100 mg/L) to moderately toxic (LC50/EC50 between 1 and 10 mg/L) to fish and other aquatic organisms on an acute basis. The solvent components range from practically nontoxic (LC50/EC50 > 100 mg/L) to moderately toxic (LC50/EC50 between 1 and 10 mg/L) to fish and other aquatic organisms on an acute basis.

For more information, request the relevant Safety Data Sheet from the Dow Customer Information Group.
Physical Hazard Information
ACIMA™ zinc octoate and zirconium octoate catalysts are stable under recommended storage and normal use conditions. Avoid contact with strong acids and oxidizing agents.

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™ zinc octoate and zirconium octoate catalysts. 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 from the Dow Customer Information Group (www.dow.com/assistance/dowcig.htm)
- Contact Us (www.dow.com/acima/contact/)

For more business information about ACIMA™ zinc octoate and zirconium octoate catalysts, visit the ACIMA Specialty Chemicals website at www.dow.com/acima/ or the Dow Customer Information Group at www.dow.com/assistance/dowcig.htm.

References
1 The Dow Chemical Company. ACIMA™ Zinkoctoat 18 [Catalyst] Safety Data Sheet
2 ACIMA Specialty Chemicals. ACIMA™ Zinc Octoate 18 [Catalyst] [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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