

Trisodium hexafluoroaluminate

Product Stewardship Summary

February 2011

Na₃AlF₆

Chemical Name:	Trisodium hexafluoroaluminate
Chemical Category (if applicable):	Alkali Metal Halide
Synonyms:	Aluminate (3-), hexafluoro-, trisodium; Aluminium trisodium hexafluoride; Sodium aluminium fluoride; and Sodium hexafluoroaluminate; Icestone; Synthetic cryolite
CAS Number:	13775-53-6
CAS Name:	Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-
EC (EINECS) Number:	237-410-6
Document Number:	GPS0046 V1.0

- Trisodium hexafluoroaluminate (synthetic cryolite) is primarily used a flux agent or bath material by aluminum smelters in the production of aluminum. It is also used in the production of synthetic resins for abrasives and in the manufacture of cutting or grinding discs. Minor uses are as a coloring agent (opacifier) in the glass, ceramic and pyrotechnic industries, and as a component of insecticides in the U.S.
- Exposure can occur at either a synthetic cryolite manufacturing facility or at other manufacturing, packaging or storage facilities that handle synthetic cryolite. Persons involved in maintenance, sampling and testing activities, or in the loading and unloading of synthetic cryolite packages are at risk of exposure, but worker exposure can be controlled with the use of proper general mechanical ventilation and personal protective equipment. Workplace exposure limits for fluoride ion have been established for use in worksite safety programs. When synthetic cryolite is a component of consumer products, users should follow manufacturer's use and/or label instructions. Synthetic cryolite dusts released to the atmosphere and deposited in soil or surface water in the vicinity of production sites have negligible impact on the environment. Please see the MSDS for additional information.
- Synthetic cryolite is a nonflammable solid that is stable under normal conditions. Contact of synthetic cryolite with water or extended skin contact under moist conditions can produce hydrofluoric acid (HF), a very dangerous acid.
- Breathing synthetic cryolite dust can irritate the nose, throat, and lungs. Ingestion or inhalation of large amounts of synthetic cryolite may cause nausea, vomiting, loss of appetite and weakness. Long-term exposure can cause deposits of fluorides in bones and teeth, a condition called fluorosis, which may result in pain, disability and discoloration or mottling of teeth. Synthetic cryolite is not considered a reproductive or developmental toxic substance.

This product stewardship summary 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 all health and safety information. Additional information on the chemical is available through the applicable Material Safety Data Sheet which should be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents. Statements concerning use of our products are made without warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.

- The cancer risk for synthetic cryolite is low.
- Synthetic cryolite is slightly soluble in water and therefore will dissociate into its constituent ions in the aquatic environment. Synthetic cryolite can be toxic to aquatic organisms, which is essentially due to the fluoride ion. Fluoride tends to accumulate preferentially in the skeletal and dental hard tissues of vertebrates (fish), exoskeletons of invertebrates, and cell walls of plants. No accumulation has been reported for edible tissues.
- For risk management, the World Health Organization (WHO) has recommended a guideline of 1.5 mg/L for fluoride in drinking water.
- Please [contact us](#) for more information. Additional information may also be found at the following links:

[ASTDR Toxicology Profile for Fluorides, Hydrogen Fluoride, and Fluorine](#)

[WHO Environmental Health Criteria 227 - Fluorides](#)

[WHO Drinking Water Guideline - Fluoride](#)

