

Benzothiazole

This document provides a brief description of Benzothiazole, its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS safety data sheet.

Identification

Product Name:	Benzothiazole
Chemical Name:	Benzothiazole
Synonym(s):	1-Thia-3-Azaindene Benzosulfonazole
CAS Number:	95-16-9

Description

Overview:	Benzothiazole is a clear to brown liquid at ambient temperatures. The chemical compound has an unpleasant odor.	
Uses:	Benzothiazole is used as an intermediate in the production of rubber accelerators and dyes; as a flavor additive in beverages, candy, baked goods, meats, gravy, soups, milk products and cheese; and as an antimicrobial agent in shoe soles.	
Properties:	Melting Point:	Approx. 35.6°F (2°C)
	Boiling Point:	Approx. 446°F (230°C)
	Flash Point:	Approx. 224.6°F (107°C)
	Solubility in Water:	Slight
	Auto-ignition:	Approx. 1,049°F (565°C)

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists from inhalation, skin or eye contact during cleaning, maintenance and repair work in manufacturing operations and at transloading, storage and staging areas. A much lower potential for exposure to Benzothiazole exists within facilities using the chemical in the manufacture of other products, since the majority of Benzothiazole sold by LANXESS is used in closed manufacturing processes by trained personnel.

Employee Training

Workers handling Benzothiazole should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. A NIOSH approved respirator is recommended in areas where insufficient ventilation is available. In addition, LANXESS recommends that goggles, permeation resistant gloves, cloth work clothes and foot protection be worn when handling Benzothiazole.

Consumer Exposure

LANXESS does not sell Benzothiazole to the general public. The chemical occurs both naturally and through heat processing of certain food products including papaya, cooked asparagus, cocoa, chocolate, peanuts, filberts, beef, popcorn and coffee. Benzothiazole is also approved for use as a flavor enhancer in foods and beverages. Trace amounts of Benzothiazole can leach from rubber products and floor coverings manufactured using the chemical as an intermediate, and the chemical has been found in drinking water and other water sources.

Short-Term Health Effects

Inhaling sufficient quantities of Benzothiazole may cause methemoglobinemia, a temporary condition that reduces the ability of blood to carry oxygen. Symptoms may include cyanosis, a purplish-blue coloring of the skin, fingernails and lips.

Skin contact may cause an allergic skin reaction in susceptible individuals. Eye contact may be irritating, with symptoms of redness, tearing and stinging. Ingestion or inhalation of Benzothiazole in sufficient quantities may be toxic.

Long-Term Health Effects

Repeated or prolonged overexposure may cause effects as noted under Short-Term Health Effects.

Physical Hazards

Benzothiazole is stable at ambient temperatures. Avoid contact with strong acids and bases. Heating to decomposition releases hazardous carbon oxides, sulfur oxides and nitrogen oxide fumes. Exposure to heat, open flames and other potential sources of ignition must be avoided.

Potential Environmental Impact

Benzothiazole vapors degrade rapidly in the presence of oxygen. Liquid Benzothiazole may persist for longer periods in water, heavy soils or sediments. Bioconcentration in aquatic organisms is low, although trace amounts may accumulate in the fatty tissues of trout and other species. An accidental release in liquid form may pose a danger to fish (moderate toxicity), invertebrates (high toxicity) and aquatic plants (low toxicity) prior to degradation. Facilities handling Benzothiazole must have a system in place for dealing with such emergencies.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, Benzothiazole is not expected to pose a significant risk to human health or the environment.

References

International Chemical Safety Card, International Programme on Chemical Safety (IPCS)

Safety Data Sheet (SDS), BENZOTHIAZOLE, LANXESS Corporation

Safety Data Sheet (SDS), BT CRUDE, LANXESS Corporation

MedlinePlus Medical Encyclopedia, U.S. National Library of Medicine and the National Institutes of Health

ToxNet Hazardous Substances Data Bank, U.S. National Library of Medicine, National Institutes of Health and the U.S. Department of Health and Human Services

Contact Information

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Notices

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