

n-Butyl Isocyanate

This document provides a brief description of n-Butyl Isocyanate, 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:	n-Butyl Isocyanate
Chemical Name:	Butane, 1-isocyanto-
Synonym(s):	1-isocyanatobutane Butyl Isocyanate
CAS Number:	111-36-4

Description

Overview:	n-Butyl Isocyanate is a colorless to yellow liquid at ambient temperatures. The chemical compound has a strong, pungent odor.	
Uses:	LANXESS Corporation's n-Butyl Isocyanate is used as an intermediate or process regulator in the production of pesticides.	
Properties:	Freezing Point:	Approx. -103°F (-75°C)
	Boiling Point:	Approx. 241°F (116.11°C)
	Flash Point:	Approx. 51.8°F (11°C)
	Solubility in Water:	Reacts violently in contact with water

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists through inhalation, skin or eye contact during the manufacture of n-Butyl Isocyanate and at transloading, storage and staging areas. A much lower potential for exposure exists in facilities using the chemical as an intermediate or process regulator in the manufacture of other products. Most of LANXESS' customers use n-Butyl Isocyanate in closed manufacturing processes.

Employee Training

Workers handling n-Butyl Isocyanate are trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. A NIOSH approved full-face, positive pressure supplied-air respirator is recommended for transloading, unloading and other operations not contained within a closed system. In addition, LANXESS recommends that goggles, permeation resistant clothing, gloves and foot protection be worn when handling n-Butyl Isocyanate. A full face shield should be worn in addition to goggles in operations where splashes may occur. Material handlers should be included in a medical surveillance program.

Consumer Exposure

LANXESS does not sell n-Butyl Isocyanate to the general public and no residual is expected to be present in products manufactured using the chemical as an intermediate or process regulator.

Short-Term Health Effects

n-Butyl Isocyanate is corrosive to the eyes, skin and respiratory system. Skin or eye contact may cause severe irritation with symptoms of redness, itching, swelling, pain or burns. Skin contact may cause an allergic reaction with symptoms of redness, itching, swelling, and rash. Inhalation of n-Butyl Isocyanate may be fatal or result in respiratory tract irritation with coughing, sore throat, runny nose or pain (a burning sensation). Ingestion may result in abdominal pain or ulceration.

Exposure to sufficient quantities of n-Butyl Isocyanate may result in permanent tissue damage, reduced lung function, bronchitis, bronchial spasm, lung inflammation or pulmonary edema (fluid in the lungs). Symptoms may be delayed. Inhalation or ingestion in high concentrations may be fatal.

Long-Term Health Effects

Long-term or repeated exposure to n-Butyl Isocyanate may result in burns, sensitization, chemical bronchitis, persistent respiratory tract damage or lung damage.

Physical Hazards

n-Butyl Isocyanate is corrosive and highly flammable. Care must be taken to avoid contact with water, alcohols, acids, bases and strong oxidizing agents. Vapors or mist may present a fire or explosion hazard, and elevated temperatures may cause the chemical to combust spontaneously. Vapors are heavier than air. Exposure to heat, open flames and other potential sources of ignition must be avoided. Do not pressurize.

Potential Environmental Impact

n-Butyl Isocyanate vapors degrade rapidly in air. In the event of a spill in liquid form, n-Butyl Isocyanate will rapidly hydrolyze in contact with water and/or moisture present in soil. As a result, this chemical is not expected to accumulate in the environment. Prior to hydrolysis, an accidental release of n-Butyl Isocyanate may pose a danger to fish (slight toxicity).

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, n-Butyl Isocyanate 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), n-Butyl Isocyanate, 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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