LANXESS
Energizing Chemistry

Isobutylene

This document provides a brief description of isobutylene, 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:	Isobutylene
Chemical Name:	Isobutylene
Synonym(s):	2-methylpropene Isobutene Isopropylidenemethylene
CAS Number:	115-11-7

Description

Overview: Isobutylene is a colorless gas at ambient temperatures, with a sweet, characteristic odor. The organic compound is compressed for shipment in liquid form.

Uses: Isobutylene is sold by LANXESS for use as a chemical intermediate in the manufacture of rubber products. The chemical is also used in industry as an antioxidant, as an additive in jet fuels and as an intermediate in the production of a wide range of chemical products.

Properties:

Boiling Point:	-6.9°C (19.58°F)
Flash Point:	-80°C (-112°F) closed cup
Auto-Ignition:	465°C (869°F) closed cup
Solubility in Water:	Insoluble in cold water
Melting Point:	-140°C (-220°F)

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during bulk loading and unloading operations, transfer hose connection/disconnection, sampling and maintenance operations in facilities where the chemical is used in the manufacture of other products. A much lower potential for exposure exists in facilities using isobutylene in closed manufacturing processes by trained personnel.

Employee Training

Workers handling isobutylene should be trained to implement proper handling procedures and to understand the potential health and physical hazards of the chemical. NIOSH-approved air purifying respirators with organic vapor cartridges may be used if the airborne concentration of the contaminant is known. Refer to product information from the respirator manufacturer for guidance. For accidental releases, spills, fires or situations where the airborne concentration is unknown, a NIOSH approved positive pressure supplied air respirator is recommended. Where possible, explosion-proof local and general exhaust ventilation equipment should be used to control levels of exposure. In addition, LANXESS recommends that splash resistant safety goggles and/or face shield, insulated gloves, long sleeved shirts and pants be worn depending of the task.

Consumer Exposure

LANXESS Corporation does not sell isobutylene to the general public. The chemical is sometimes found in ambient air due to burning of fossil fuels.

Short-Term Health Effects

Isobutylene has a low level of toxicity under normal exposure levels.

Direct contact with (or ingestion of) liquid isobutylene may result in tissue freezing and/or severe cold burns similar to frostbite. Inhalation of isobutylene may be irritating to the respiratory system. Inhalation in very high concentrations may result in central nervous system depression with symptoms of drowsiness, dizziness, nausea and anesthesia. At extremely high levels, isobutylene is a simple asphyxiant and can cause death.

Long-Term Health Effects

Chronic exposure to isobutylene may result in central nervous system damage.

Physical Hazards

Isobutylene is highly flammable and will form explosive mixtures with air. Isobutylene is heavier than air and may travel along the ground or accumulate in spaces with low ceiling height, potentially reducing oxygen levels. Heating to decomposition may release carbon oxides and other potentially toxic gases. Avoid exposure to heat, open flames and other potential sources of ignition. Isobutylene is incompatible with oxidizing materials.

Potential Environmental Impact

Isobutylene degrades rapidly with exposure to light and air. An accidental release to water will revert to gas form quickly and is not expected to pose a danger to fish (low toxicity), invertebrates (low toxicity) or aquatic plants (low toxicity). The chemical may adsorb to suspended soils and sediments prior to degradation.

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, isobutylene is not expected to pose a significant risk to human health or the environment.

References

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

Safety Data Sheet (SDS), ISOBUTYLENE, LANXESS Corporation

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

SIDS Initial Assessment Report - Isobutylene, Organization for Economic Cooperation and Development (OECD)

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

Contact Information

LANXESS Corporation, Product Safety & Regulatory Affairs, 111 RIDC Park West Drive, Pittsburgh, PA 15275-1112, USA, Phone 1-800-526-9377 [1-800-LANXESS]

Notices

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