

Sulfuryl Chloride

This document provides a brief description of Sulfuryl Chloride, 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:	Sulfuryl Chloride
Chemical Name:	Sulfuryl Chloride
Synonym(s):	Chlorosulfuric Acid Sulfuric Chloride Sulfuric Oxychloride
CAS Number:	7791-25-5

Description

Overview:	Sulfuryl Chloride is a clear to yellow liquid at ambient temperatures. The chemical compound has a pungent, irritating odor.						
Uses:	Sulfuryl Chloride is used in industry as an intermediate in the synthesis of agricultural chemicals, biocides, pharmaceutical active substances and photochemicals.						
Properties:	<table><tr><td>Melting Point:</td><td>-65.2°F (-54°C)</td></tr><tr><td>Boiling Point:</td><td>Approx. 156.74°F (69.3°C)</td></tr><tr><td>Solubility in Water:</td><td>Decomposes</td></tr></table>	Melting Point:	-65.2°F (-54°C)	Boiling Point:	Approx. 156.74°F (69.3°C)	Solubility in Water:	Decomposes
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Solubility in Water:	Decomposes						

Potential Human Health Effects

Occupational Exposure

Potential for exposure exists while performing maintenance or repair work in manufacturing operations, at transloading facilities and during transfers to storage or staging areas. Since Sulfuryl Chloride may react with moisture in the air—producing strong inorganic vapors or mists—there is an increased risk of inhalation exposure during drum and tank filling operations. A much lower potential for exposure exists at LANXESS' customer facilities, since the majority of Sulfuryl Chloride sold by LANXESS is used in closed manufacturing processes by trained personnel.

Employee Training

Workers handling Sulfuryl Chloride are trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. A NIOSH approved positive pressure air-purifying respirator or self-contained breathing apparatus (SCBA) is recommended for employees involved in transloading, unloading and other operations not contained within a closed system. In addition, LANXESS recommends that a face-shield, goggles, permeation resistant clothing, rubber apron, gloves and foot protection be worn when handling Sulfuryl Chloride.

Consumer Exposure

LANXESS does not sell Sulfuryl Chloride to the general public and no residuals are expected in products manufactured using this chemical as an ingredient or intermediate.

Short-Term Health Effects

Sulfuryl Chloride is fatal if inhaled in sufficient quantities. Symptoms of inhalation exposure range from coughing, burning, ulceration and pain to pulmonary edema (accumulation of fluid in the lungs), which may be delayed, and pneumonitis (inflammation of the lungs). Inhaling large quantities and high concentrations of the chemical may be fatal. Short-term skin contact may result in redness, itching, swelling or burns, with permanent tissue damage possible. Prolonged exposure to vapors may cause eye irritation with symptoms of burning and tearing. Direct contact of the liquid with the eye may produce reddening and burning with possible permanent damage. Sulfuryl Chloride is corrosive to the digestive tract if swallowed. Symptoms may include abdominal pain, nausea, vomiting, diarrhea, burning and ulceration.

Long-Term Health Effects

Long-term or repeated skin contact may cause dermatitis with symptoms of red, itchy, dry skin. Prolonged exposure to Sulfuryl Chloride vapors may result in conjunctivitis (redness and inflammation of the eyes). While Sulfuryl Chloride itself is not listed, it may be categorized as a "strong inorganic acid mist containing sulfuric acid" which is generically classified by the International Agency for Research on Cancer (IARC) as Group 1, human carcinogen.

Physical Hazards

Sulfuryl Chloride is stable at ambient temperatures but will react violently with water, forming sulfuric acid and releasing hydrogen chloride gas. Sulfuryl Chloride will decompose in a moist environment or if heated beyond the boiling point. Avoid contact with water, amines, alcohols, strong bases, and extreme heat. Vapors or mist may be corrosive to metals, and are heavier than air.

Potential Environmental Impact

Sulfuryl Chloride decomposes rapidly in the presence of water to form sulfuric and hydrochloric acids. These acids, in turn, degrade rapidly into common elements. As a result, Sulfuryl chloride is not adsorbed into soil and does not accumulate in the tissues of fish or other aquatic organisms.

Contact with mineral acids formed during decomposition may pose a danger to fish (high toxicity), invertebrates (high toxicity) and plants (high toxicity) prior to biodegradation.

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 Sulfuryl Chloride 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), Sulfuryl Chloride, LANXESS Corporation

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

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

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

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

Use and Application Information

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