

Phosphorus sulfochloride

This document provides a brief description of phosphorus sulfochloride, 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 Corporation safety data sheet.

Identification

Product Name:	Phosphorus sulfochloride
Chemical Name:	Phosphorus sulfochloride
Synonym(s):	Phosphorothionic trichloride Thiophosphoryl chloride Trichlorophosphine sulfide
CAS Number:	3982-91-0 (>95%), 7719-12-2 (1–5%)

Description

Overview:	Phosphorus sulfochloride is a colorless liquid at ambient temperatures. The chemical has a low viscosity and a fuming, pungent odor.						
Uses:	Phosphorus sulfochloride is sold by LANXESS for use as an intermediate in the production of thiophosphoric acid ester derivatives, which are used as insecticides. The chemical is also used in the manufacture of metal cleaning products, fertilizers, rust removers and other products.						
Properties:	<table><tr><td>Boiling Point:</td><td>125°C (257°F)</td></tr><tr><td>Freezing Point:</td><td>-35°C (-31°F)</td></tr><tr><td>Solubility in Water:</td><td>Hydrolyzes</td></tr></table>	Boiling Point:	125°C (257°F)	Freezing Point:	-35°C (-31°F)	Solubility in Water:	Hydrolyzes
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Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure to phosphorus sulfochloride exists during manufacture, at unloading, storage and staging areas, and during hose connection, maintenance and reactor vessel charging operations in facilities where the chemical is used as an intermediate in the manufacture of other products. A much lower potential for exposure exists in facilities using phosphorus sulfochloride in closed manufacturing processes by trained personnel.

Employee Training

Workers handling phosphorus sulfochloride should be trained to implement proper handling procedures and to understand the potential health and physical hazards of the chemical. A NIOSH-approved positive pressure air-supplied respirator with full face shield is recommended for transloading, unloading and other operations not contained within a closed system. In addition, LANXESS recommends that chemical splash goggles, full face shield, chemical resistant protective suit, gloves and suitable protective footwear be worn when handling phosphorus sulfochloride.

Consumer Exposure

LANXESS Corporation does not sell phosphorus sulfochloride to the general public. Consumers may be exposed to the chemical through use of household products including batteries, toilet, metal and drain cleaners, rust removers and artificial nail primers.

Short-Term Health Effects

Phosphorus sulfochloride is corrosive and highly toxic. Skin or eye contact may result in severe irritation or burns, with symptoms of redness, itching, swelling and pain. Permanent damage is possible. Inhalation is corrosive to the respiratory system. Symptoms of inhalation may include coughing, wheezing, sore throat, burning, headache, shortness of breath, vomiting, pain and unconsciousness. Ingestion of phosphorus sulfochloride is corrosive to the digestive tract. Symptoms of ingestion may include coughing, burning, ulceration, abdominal pain, shock or collapse. Exposure at high levels may be fatal.

The effects of exposure to phosphorus sulfochloride may be delayed.

Long-Term Health Effects

Phosphorus sulfochloride poses no known significant long-term health effects when recommended instructions for use are followed.

Physical Hazards

Phosphorus sulfochloride is stable under normal conditions of use. The chemical reacts violently with water and moisture, forming toxic and flammable gases. Heating to decomposition may release phosphoric acid, hydrogen chloride, hydrogen sulfide and other toxic fumes. Avoid heat, open flames and other potential sources of ignition.

Potential Environmental Impact

An accidental release of phosphorus sulfochloride to air or water will decompose rapidly into phosphoric acid, hydrogen chloride and hydrogen sulfide. A release to water in sufficient quantities may result in a significant pH shift, posing a potential danger to fish, invertebrates or aquatic plants. Protect from freezing and incompatible materials such as, alkali metals and water.

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

References

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

Safety Data Sheet (SDS), PHOSPHORUS SULFOCHLORIDE, LANXESS Corporation

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

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

Use and Application Information

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.