

Phosphorous Trichloride

This document provides a brief description of Phosphorus Trichloride, its uses, and the potential hazards associated with short-term 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 material safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS Corporation safety data sheet.

Identification

Chemical Name:	Phosphorus Trichloride
Synonym(s):	Trichlorophosphine
CAS Number:	7719-12-2

Description

Overview: Phosphorus Trichloride is a colorless or slightly yellow liquid with a pungent odor resembling that of hydrochloric acid.

Uses: Phosphorus Trichloride is used as an intermediate for pesticides, flame retardants, plasticizers, water treatment agents, and pharmaceuticals.

Properties:

Boiling Point:	76.1°C (168.98°F)
Melting Point:	-93.6°C (-136.48°F)
Vapor pressure :	120 mmhg, 25°C
Flammability:	Non-flammable

Exposure and Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture and in storage, transfer, maintenance and sampling operations at facilities using Phosphorus Trichloride as an intermediate or additive in the manufacture of other products. A much lower potential for exposure exists in facilities using the chemical compound in closed manufacturing processes by trained personnel.

Employee Training

Workers should be trained to implement proper handling procedures and to understand the potential health and physical hazards of Phosphorus Trichloride exposure. Local and general exhaust ventilation should be used to keep worker exposure to airborne contaminants below any recommended or statutory limits. In cases where airborne concentrations are unknown, a NIOSH approved air-purifying respirator and particulate prefilter should be used to minimize exposure. In addition, LANXESS recommends safety glasses with side shields, impervious gloves and suitable protective clothing be worn when handling Phosphorus Trichloride.

Consumer Exposure

LANXESS Corporation does not sell Phosphorus Trichloride to the general public. Consumers may be exposed to trace amounts of Phosphorus Trichloride through use of products manufactured using the substance as an additive or processing aid.

Short-Term Health Effects

Phosphorus Trichloride may be fatal if swallowed. The substance may be corrosive by skin contact and/ or inhalation. Symptoms may include redness, itching, dermatitis, or coughing.

Long-Term Health Effects

Repeated or prolonged inhalation exposure may cause damage to respiratory organs.

Physical Hazards

Phosphorus Trichloride is a volatile liquid that reacts violently with water or atmospheric moisture with the evolution of heat, to form phosphoric acid and hydrochloric acid. It is a reducing agent and is readily oxidized using ozone or oxygen to form phosphorus oxychloride. It is not predicted to be explosive. Isolate from any source of heat or ignition.

Potential Environmental Impact

It also does not bioaccumulate due to this reaction. An accidental release to environmental water sources may be toxic to aquatic life due to pH changes and the creation of hydrochloric and phosphoric acid; however, release according to normal use or regulation-compliant controlled release should have minimal impact on the environment.

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

References

ECHA InfoCard, Phosphorus trichloride, European Chemicals Agency

PubChem, National Library of Medicine, National Center for Biotechnology Information

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.