

Phosphoric acid, tris (2-methylpropyl) ester

This document provides a brief description of phosphoric acid, tris (2-methylpropyl) ester, 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:	99% Tri-isobutylphosphate
Chemical Name:	tri-iso-butyl phosphate
Synonym(s):	Phosphoric acid, triisobutyl ester TiBP
CAS Number:	126-71-6

Description

Overview:	Phosphoric acid, tris (2-methylpropyl) ester is a colorless to light yellow, low viscosity liquid at ambient temperatures. The chemical has a distinctive odor.	
Uses:	Phosphoric acid, tris (2-methylpropyl) ester is sold by LANXESS for use as an antifoam, pasting or wetting agent in the manufacture of concrete additives, paper coatings, textiles and adhesive products. The chemical is also used as a solvent in hydraulic fluids and as a flame-retardant plasticizer in plastics.	
Properties:	Boiling Point:	521.6°F (272°C)
	Flash Point:	271.4°F (133°C)
	Auto-ignition:	806°F (430°C)
	Solubility in Water:	Insoluble

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture, at storage and staging areas and during transfer hose connection/disconnection, sampling, charging, formulation and maintenance operations in facilities where phosphoric acid, tris (2-methylpropyl) ester is used as an additive or processing aid in the manufacture of other products. A much lower potential for exposure exists in facilities using the chemical in closed manufacturing processes by trained personnel.

Employee Training

Workers handling phosphoric acid, tris (2-methylpropyl) ester should be trained to implement proper handling procedures and to understand the potential health and physical hazards of the chemical. Suitable respiratory protection should be worn if ventilation is insufficient to maintain air concentrations below recommended guidelines. In addition, LANXESS recommends that safety glasses with side shields, permeation resistant gloves, long pants and long-sleeved shirts be worn when handling phosphoric acid, tris (2-methylpropyl) ester.

Consumer Exposure

LANXESS Corporation does not sell phosphoric acid, tris (2-methylpropyl) ester to the general public. Some packaged foods, drinking water sources and indoor/outdoor air supplies may contain trace amounts of phosphate esters (a broad category of chemical substances that includes the chemical tris (2-methylpropyl) ester).

Short-Term Health Effects

Skin and/or eye contact with phosphoric acid, tris (2-methylpropyl) ester is not expected to be irritating. The chemical may cause an allergic reaction in susceptible individuals with symptoms of redness, itching, swelling and rash. Phosphoric acid, tris (2-methylpropyl) ester is not expected to be harmful if swallowed in small amounts.

Long-Term Health Effects

Repeated or prolonged contact with phosphoric acid, tris (2-methylpropyl) ester may cause an allergic skin reaction in sensitive individuals.

Physical Hazards

Phosphoric acid, tris (2-methylpropyl) ester is stable under normal conditions of use. Avoid contact with strong oxidizing agents. Heating to decomposition may release carbon oxides, phosphorus oxides and other potentially toxic fumes. Avoid heat, open flames and other potential sources of ignition.

Potential Environmental Impact

Phosphoric acid, tris (2-methylpropyl) ester is not readily biodegradable but does degrade with exposure to sunlight and water. An accidental release to water may pose a danger to fish (low

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toxicity), invertebrates (low toxicity) and aquatic plants (low toxicity) prior to degradation. Phosphoric acid, tris (2-methylpropyl) ester may adsorb to soils and sediments.

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, phosphoric acid, tris (2-methylpropyl) ester is not expected to pose a significant risk to human health or the environment.

References

Draft Toxicological Profile for Phosphate Ester Flame Retardants (September 2009), U.S. Department of Health and Human Services, Agency for Toxic Substances & Disease Registry (ATSDR)

Safety Data Sheet (SDS), TRI-ISOBUTYL PHOSPHATE, LANXESS Corporation

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

Summary of Data and Test Plan for the Phosphoric Acid Derivatives Category, U.S. Environmental Protection Agency (EPA)

ToxNet International Toxicity Estimates for Risk (ITER), 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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