

Tributyl phosphate

This document provides a brief description of tributyl phosphate, 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 material safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS Corporation safety data sheet.

Identification

Product Name:	Tributyl phosphate
Chemical Name:	Tributyl phosphate
Synonym(s):	Tri-n-butyl phosphate TBP
CAS Number:	126-73-8

Description

Overview:	Tributyl phosphate is a viscous, colorless, odorless liquid at ambient temperatures.		
Uses:	Tributyl phosphate is sold by LANXESS primarily for use as a plasticizer in the production of plastic products and vinyl resins. The chemical is also used as an industrial solvent and as a flame retardant in hydraulic fluids.		
Properties:	Boiling Point:	289°C (552.2°F)	
	Flash Point:	146°C (294.8°F) closed cup	
	Auto-Ignition:	Approx. >482°C (>899.6°F)	
	Solubility in Water:	Soluble	

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture and in unloading, storage, staging and transfer operations at facilities using the chemical in the manufacture of other products. A much lower potential for exposure exists in facilities using tributyl phosphate in closed manufacturing processes by trained personnel.

Employee Training

Workers handling tributyl phosphate should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. Exhaust ventilation or other engineering controls should be used to keep airborne concentrations below recommended or statutory limits. A NIOSH approved, air-purifying respirator with organic vapor cartridges and N-95 filters should be worn where ventilation is inadequate or airborne concentrations unknown. In addition, LANXESS recommends safety glasses with side shields, permeation resistant gloves, long pants, long-sleeved shirts and protective footwear be worn when handling tributyl phosphate.

Consumer Exposure

LANXESS Corporation does not sell tributyl phosphate to the general public.

Short-Term Health Effects

Skin contact may cause irritation with symptoms of reddening, itching, and swelling. Eye contact may cause irritation with symptoms of reddening, tearing, stinging, and swelling. Inhalation of tributyl phosphate may cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose. Ingestion may cause irritation to the mouth, throat and stomach with symptoms of abdominal pain, nausea, vomiting, and diarrhea. Acute overexposure may cause gastrointestinal effects, including flatulence, soft stools, diarrhea and abdominal pain.

Long-Term Health Effects

Prolonged or repeated exposure to tributyl phosphate may cause damage to the bladder and blood system.

Physical Hazards

Tributyl phosphate is stable under normal conditions of use. Avoid contact with bases and strong oxidizing agents. Reacts with warm water producing corrosive phosphoric acid and butanol. Heating to decomposition may release carbon monoxide, carbon dioxide and phosphorus oxides. Avoid heat, open flames and other potential sources of ignition.

Potential Environmental Impact

Tributyl phosphate is readily biodegradable. An accidental release may pose a danger to fish (high toxicity), invertebrates (high toxicity) and aquatic plants (high toxicity) prior to degradation. Tributyl phosphate is not expected to accumulate in the tissues of aquatic organisms.

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, tributyl phosphate 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)

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

Safety Data Sheet (SDS), TRIBUTYL PHOSPHATE, RheinChemie Additives

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

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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.