

Tricresyl Phosphate

This document provides a brief description of tricresyl Phosphate, 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:	Tricresyl Phosphate
Synonym(s):	Tris(methylphenyl) phosphate
CAS Number:	1330-78-5

Description

Overview: Tricresyl Phosphate is a phosphorus-based industrial flame retardant designed for incorporation into various materials requiring enhanced fire resistance. Its hydrophobic character and low water solubility influence its behavior during handling and environmental exposure. This substance is intended exclusively for professional and industrial users, thereby minimizing potential public exposure.

Uses: Tricresyl Phosphate is used as an additive in flame retardants, plastics, and lubricant. During the manufacture of polymers, coatings, and textiles, its chemical stability facilitates integration into organic matrices, offering durable fire protection and reducing risks related to migration or volatilization throughout the product lifecycle.

Properties:	Appearance	Colorless odorless viscous liquid
	Solubility in Water:	0.271 mg/l (slightly soluble)
	Melting Point:	-4 °F (-20 °C)
	Boiling Point:	752 °F (400 °C)
	Flash Point	> 392 °F (200°C)

Exposure and Potential Human Health Effects

Occupational Exposure

Inhalation exposure is typically negligible due to low volatility and high boiling point, especially when workers wear the appropriate personal protection equipment (PPE). Dermal exposure could occur but can be minimized with appropriate wear of PPE. Oral exposure is not a problem in occupational settings.

Employee Training

Workers should be trained to implement proper handling procedures and to understand the potential health and physical hazards of the substance. Local and general exhaust ventilation should be used to keep worker exposure to airborne contaminants below any recommended or statutory limits. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. A NIOSH approved air purifying respirator with organic vapor cartridges and particulate prefilter can be used to minimize exposure. When handling the substance, PVC gloves should be worn and each pair of such gloves should only be worn for up to one hour before changing to a new pair of PVC gloves.

Consumer Exposure

LANXESS Corporation does not sell tricresyl Phosphate to the general public. The substance is not intended for consumer use. Its presence in products is restricted to industrial intermediates or finished goods, thereby minimizing public exposure throughout typical product use and disposal. Consumers may be exposed to trace amounts of the chemical compound via inhalation of indoor air or dermal contact with consumer products containing the substance.

Short-Term Health Effects

Short-term exposure may result in mild irritation of skin or eyes. This substance is characterized by low acute toxicity. Under normal handling, irritation risks are minimal; however, ingestion, inhalation, or prolonged skin contact should be avoided. The substance is not classified as a skin sensitizer or mutagen. Exposure to decomposition products in fire scenarios can result in symptoms such as carbon monoxide poisoning or phosphorus oxide effects.

Long-Term Health Effects

This substance is not a mutagen or carcinogen. Some evidence of adverse effects were found on sexual function and fertility, and/or on development, based on animal experiments. Thus, chronic exposure to this substance at sufficient levels may lead to fertility issues or harms to the unborn child.

Physical Hazards

The substance is physically stable, not susceptible to hazardous polymerization or spontaneous ignition, and does not present physical hazards except during fire events, where decomposition can produce toxic gases. Under normal conditions of storage and use, hazardous reactions will not occur.

Potential Environmental Impact

Tricresyl Phosphate is readily biodegradable in the environment. It is not bioaccumulative. Based on acute and chronic aquatic toxicity of the substance has been studies with fish, invertebrates and algae, this substance is very toxic to aquatic life in short-term and long-term exposure situations. Therefore, measures should be taken to control releases to water in order to minimize potential exposure of water species to the substance.

Conclusion

This substance is suspected to cause reproductive toxicity. It is also very toxic to aquatic species. However, under normal conditions of anticipated uses as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, tricresyl Phosphate is not expected to pose a significant risk to human health or the environment.

References

1. 2025 US SDS for DURAD 125 Aviation
2. 2025 US SDS for ADDITIN RC 3662
3. ECHA CHEM Database for Tricresyl Phosphate, CAS 1330-78-5

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.