



Product Information (203) 740-3471 / Emergency Assistance CHEMTREC 1-800-424-9300

MATERIAL SAFETY DATA SHEETS

Manufacturer: PHARMCO-AAPER
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Emergency Contact:
CHEMTREC 1-800-424-9300

Tricresyl phosphate

Section 1 - Chemical Product and Company Identification

MSDS Name: Tricresyl phosphate

Synonyms: Tricresyl phosphate; Tris(tolyloxy)phosphine oxide; Tritolyl phosphate.

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1330-78-5	Tricresyl phosphate	99	215-548-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless to pale yellow liquid.

Danger! Exposure may cause central and peripheral neuropathies with paralysis of muscles. Harmful if swallowed or absorbed through the skin. May cause eye, skin, and respiratory tract irritation. May be harmful if inhaled. Cholinergic (interferes with nerve impulse transmission).

Marine pollutant.

Target Organs: Nervous system.

Potential Health Effects

Eye: May cause eye irritation. Causes redness and pain.

Skin: May cause skin irritation. If absorbed, causes symptoms similar to those of ingestion.

Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause headache. May cause muscle paralysis, respiratory failure, and possible death. Overexposure to this product by ingestion, inhalation, or skin absorption may cause cholinesterase inhibition.

Symptoms of cholinesterase inhibition may include: headache, nausea, sweating, numbness and tingling of the hands and feet, salivation, muscle twitching, tremors, in-coordination, blurred vision, tears, abdominal cramps, diarrhea, and chest discomfort.

Inhalation: May cause respiratory tract irritation. May cause effects similar to those described for ingestion.

Chronic: May cause paralysis. Effects may be delayed. May cause adverse reproductive effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use water spray, fog or regular foam.

Flash Point: 210 deg C (410.00 deg F)

Autoignition Temperature: > 500 deg C (> 932.00 deg F)

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

Avoid runoff into storm sewers and ditches that lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use only in a chemical fume hood.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name ACGIH NIOSH OSHA - Final PELs

Tricresyl phosphate none listed none listed none listed

Triorthocresyl phosphate

0.1 mg/m³ TWA; Skin - potential significant contribution to overall exposure by the cutaneous route

0.1 mg/m³ TWA 40 mg/m³

IDLH

0.1 mg/m³ TWA

OSHA Vacated PELs: Tricresyl phosphate: No OSHA Vacated PELs are listed for this chemical.

Triorthocresyl phosphate: 0.1 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless to pale yellow
Odor: odorless
pH: Not available.
Vapor Pressure: Negligible
Vapor Density: 12.70
Evaporation Rate: Not available.
Viscosity: 34 cps @ 37.8 deg C
Boiling Point: 410 deg C
Freezing/Melting Point: -30 deg C
Decomposition Temperature: 530 deg C
Solubility: insoluble
Specific Gravity/Density: 1.1600 g/ml
Molecular Formula: C₂₁H₂₁O₄P
Molecular Weight: 368.36

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, oxides of phosphorus, carbon dioxide. Hazardous
Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 1330-78-5: TD0175000
CAS# 78-30-8: TD0350000
LD50/LC50:
CAS# 1330-78-5:
Draize test, rabbit, eye: 500 mg/24H Mild;
Oral, mouse: LD50 = 3900 mg/kg;
Oral, rat: LD50 = 3 gm/kg;
CAS# 78-30-8:
Oral, mouse: LD50 = 900 mg/kg;
Oral, rat: LD50 = 1160 mg/kg;
Skin, rabbit: LD50 = >3700 mg/kg;
Carcinogenicity:
CAS# 1330-78-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 78-30-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: Adverse reproductive effects have occurred in experimental animals. Tritolyl phosphate (specifically the ortho-tolyl form) produced testicular toxicity in roosters and testicular and perhaps epididymal toxicity in rats. Mutagenicity: No information found
Neurotoxicity: Signs of TOCP intoxication include peripheral paresthesias, ataxia, spasticity, & flaccid paralysis. TOCP may be absorbed through intact human skin & the GI tract. It is estimated that the minimum paralytic dose in humans by ingestion is 10-30 mg/kg.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT Canada TDG
Shipping Name: TRICRESYL PHOSPHATE TRICRESYL PHOSPHATE
Hazard Class: 6.1 6.1
UN Number: UN2574 UN2574
Packing Group: II II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 1330-78-5 is listed on the TSCA inventory.

CAS# 78-30-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 1330-78-5: immediate, delayed.

CAS # 78-30-8: immediate, delayed.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA: None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 1330-78-5 can be found on the following state right to know lists: New Jersey.

CAS# 78-30-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Risk Phrases:

R 39/23/24/25 Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 20/21 When using do not eat, drink or smoke.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 28A After contact with skin, wash immediately with plenty of water

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 1330-78-5: 2

CAS# 78-30-8: No information available.

Canada - DSL/NDSL

CAS# 1330-78-5 is listed on Canada's DSL List.

CAS# 78-30-8 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2A, D1A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 1330-78-5 is listed on the Canadian Ingredient Disclosure List.

CAS# 78-30-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.

