

Material Safety Data Sheet

Tritolyl phosphate, mixture of isomers

ACC# 23731

Section 1 - Chemical Product and Company Identification

MSDS Name: Tritolyl phosphate, mixture of isomers**Catalog Numbers:** AC422310000, AC422310250, AC422315000, AC611550010, T342-1**Synonyms:** Tricresyl phosphate; Tris(tolyloxy)phosphine oxide; Tritolyl phosphate.**Company Identification:**

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
1330-78-5	Tritolyl phosphate, mixture of isomers	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. Danger of very serious irreversible effects. Toxic if swallowed, inhaled or absorbed through the skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Cholinergic (interferes with nerve impulse transmission).

Target Organs: Respiratory system, gastrointestinal system, nervous system, skin.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation. Toxic in contact with skin.

Ingestion: May cause irritation of the digestive tract. May cause headache. May cause muscle paralysis, respiratory failure, and possible death. Toxic if swallowed. 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, incoordination, blurred vision, tears, abdominal cramps, diarrhea, and chest discomfort.

Inhalation: May cause respiratory tract irritation. Toxic if inhaled.

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: POISON material. In case of contact, get medical aid immediately. Immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Call a poison control center. POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: 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. POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

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. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: 234 deg C (453.20 deg F)

Autoignition Temperature: 410 deg C (770.00 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 which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7 - Handling and Storage

Handling: Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. 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
Tritolyl phosphate, mixture of isomers	none listed	none listed	none listed
Triorthocresyl phosphate	0.1 mg/m ³ TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	0.1 mg/m ³ TWA 40 mg/m ³ IDLH	0.1 mg/m ³ TWA

OSHA Vacated PELs: Tritolyl phosphate, mixture of isomers: No OSHA Vacated PELs are listed for this chemical. Triorthocresyl phosphate: 0.1 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

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: 0.03 mm Hg @25 deg C

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: Incompatible materials, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, oxides of phosphorus, carbon dioxide.

Hazardous Polymerization: Has not been reported

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

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: No information available.

Other: Do not empty into drains.

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 depletors.

This material does not contain any Class 2 Ozone depletors.

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****Hazard Symbols:**

T N

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
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MSDS Creation Date: 9/02/1997

Revision #8 Date: 6/28/2007

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