

Tris(2-chloroethyl) phosphite: sc-251392



The Power to Question

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Tris(2-chloroethyl) phosphite
Product Number: sc-251392
Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800
Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Carcinogen, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Irritant, Mutagen

Target Organs

Eyes, Lungs, Pancreas, Kidney, Liver, Central nervous system, Cardio-vascular system, Heart, Nerves. Eyes, Lungs, Pancreas, Kidney, Liver, Central nervous system, Cardio-vascular system, Heart, Nerves, Pancreas, Cardiovascular system.

GHS Classification

Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301+ H311	Toxic if swallowed or in contact with skin
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280	Wear protective gloves/ protective clothing.
P284	Wear respiratory protection.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 4
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating

Health hazard: 4
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.
Skin May be fatal if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: C₆H₁₂Cl₃O₃P

Molecular Weight: 269.49

Component	Concentration
Tris(2-chloroethyl) phosphite	
CAS-No. 140-08-9 EC-No. 205-397-6	90 - 100 %
Ethylene dichloride	
CAS-No. 107-06-2 EC-No. 203-458-1 Index-No. 602-012-00-7 Registration number 01-2119484658-20-XXXX	1 - 5 %
2-Chloroethanol	
CAS-No. 107-07-3 EC-No. 203-459-7 Index-No. 603-028-00-7	1 - 5 %
Ethylene oxide	
CAS-No. 75-21-8 EC-No. 200-849-9 Index-No. 603-023-00-X Registration number 01-2119432402-53-XXXX	0.1 - 1 %

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. Carbon oxides, Oxides of phosphorus, Hydrogen chloride gas

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Ethylene dichloride	107-06-2	TWA	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Liver damage Nausea Not classifiable as a human carcinogen			
		TWA	1 ppm 4 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	2 ppm 8 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	50 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.21-1969			
		CEIL	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.21-1969			
		Peak	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2

	Z37.21-1969			
		TWA	1 ppm 4 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			
		ST	2 ppm 8 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A			
2-Chloroethanol	107-07-3	C	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Liver & kidney damage Not classifiable as a human carcinogen Danger of cutaneous absorption			
		C	1 ppm 3 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	5 ppm 16 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Skin designation The value in mg/m3 is approximate.			
		C	1 ppm 3 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption			
Ethylene oxide	75-21-8	TWA	1 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		STEL	5 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Central Nervous System impairment Cancer Suspected human carcinogen			
		TWA	1 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	5 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Substance listed; for more information see OSHA document 1910.1047			
	See 1910.1047			
		C	5 ppm 9 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A 10 minute per day ceiling value			

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	liquid	pH	no data available
Boiling point	112 - 115 °C - lit	Flash point	190.5 °C
Ignition temperature	no data available	Lower explosion limit	no data available
Upper explosion limit	no data available	Vapor pressure	no data available
Density	1.328 g/mL at 25 °C	Water solubility	no data available
Relative vapor density	no data available	Odor	no data available
Odor Threshold	no data available	Evaporation rate	no data available
Auto-ignition temperature	no data available	Partition coefficient	no data available
Melting point	no data available	n-octanol/water	
Freezing point	no data available		

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. Carbon oxides, Oxides of phosphorus, Hydrogen chloride gas

Other decomposition products

no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50 no data available (Tris(2-chloroethyl) phosphite)

Inhalation LC50 no data available (Tris(2-chloroethyl) phosphite)

Dermal LD50 no data available (Tris(2-chloroethyl) phosphite)

Other information no data available (Tris(2-chloroethyl) phosphite)

Skin corrosion/irritation

no data available (Tris(2-chloroethyl) phosphite)

Serious eye damage/eye irritation

no data available (Tris(2-chloroethyl) phosphite)

Respiratory or skin sensitization

no data available (Tris(2-chloroethyl) phosphite)

Germ cell mutagenicity

no data available (Tris(2-chloroethyl) phosphite)

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Ethylene oxide)

ACGIH: 2B - Group 2B: Possibly carcinogenic to humans (Ethylene dichloride)

NTP: Known to be human carcinogen (Ethylene oxide)

OSHA: Reasonably anticipated to be a human carcinogen (Ethylene dichloride)

Reproductive toxicity

no data available

Teratogenicity

no data available (Tris(2-chloroethyl) phosphite)

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available (Tris(2-chloroethyl) phosphite)

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available (Tris(2-chloroethyl) phosphite)

Potential health effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.

Ingestion May be fatal if swallowed.

Skin May be fatal if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure

Prolonged or repeated exposure to skin causes defatting and dermatitis, Paresthesia, Convulsions, Conjunctivitis. Pulmonary edema. Effects may be delayed, Irregular breathing. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Tris(2-chloroethyl) phosphite)

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION**Toxicity**

no data available

Bioaccumulative potential

no data available

PBT and vPvB assessment

no data available

Persistence and degradability

no data available

Mobility in soil

no data available (Tris(2-chloroethyl) phosphite)

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS**Product**

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN number: 2810 Class: 6.1 Packing group: III

Proper shipping name: Toxic, liquids, organic, n.o.s. (Tris(2-chloroethyl) phosphite)

Reportable Quantity (RQ): 2500 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN number: 2810 Class: 6.1 Packing group: III EMS-No: F-A, S-A

Proper shipping name: TOXIC LIQUID, ORGANIC, N.O.S. (Tris(2-chloroethyl) phosphite)

Marine pollutant: No

IATA

UN number: 2810 Class: 6.1 Packing group: III

Proper shipping name: Toxic liquid, organic, n.o.s. (Tris(2-chloroethyl) phosphite)

15. REGULATORY INFORMATION

OSHA Hazards

Carcinogen, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Irritant, Mutagen

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

Ethylene oxide	CAS-No. 75-21-8
2-Chloroethanol	CAS-No. 107-07-3

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ethylene oxide	CAS-No. 75-21-8
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SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Ethylene dichloride	CAS-No. 107-06-2
2-Chloroethanol	CAS-No. 107-07-3
Ethylene oxide	CAS-No. 75-21-8

Pennsylvania Right To Know Components

Tris(2-chloroethyl) phosphite	CAS-No. 140-08-9
Water	CAS-No. 7732-18-5
Ethylene dichloride	CAS-No. 107-06-2
2-Chloroethanol	CAS-No. 107-07-3
Ethylene oxide	CAS-No. 75-21-8

New Jersey Right To Know Components

Tris(2-chloroethyl) phosphite	CAS-No. 140-08-9
Water	CAS-No. 7732-18-5
Ethylene dichloride	CAS-No. 107-06-2
2-Chloroethanol	CAS-No. 107-07-3
Ethylene oxide	CAS-No. 75-21-8

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.

Ethylene oxide	CAS-No. 75-21-8
Ethylene dichloride	CAS-No. 107-06-2

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

08/01/2013