SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-O-50017
Product Name	Tris(2,3-dichloropropyl) phosphate
CAS No.	78-43-3
Category	Building Blocks
Synonyms	-
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Not available

2.2 Label Elements

Signal Word: Warning

Not available

Hazard Statement(s)

Code	Statement
H351	Not available
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

Code	Statement
P203	Not available
P273	Not available

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P318	Not available
P391	Not available
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Tris(2,3-dichloropropyl) phosphate
CAS Number : 78-43-3
Molecular Formula : C9H15Cl6O4P
Molecular Weight : 430.9
Parent Chemical : -
Synonyms : -
Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
General advice: Seek medical attention if symptoms persist or if you feel unwell. Show this SDS to the physician.
Inhalation: Move person to fresh air. If breathing is difficult, seek medical attention.
Skin contact: Remove contaminated clothing and shoes. Wash skin with plenty of soap and water. Seek medical attention if irritation develops or persists.
Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed
Not available.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically. No data available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide (CO2).
Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture

May decompose under fire conditions to release hazardous gases/vapors. Thermal decomposition products may include phosphorus oxides and hydrogen chloride and/or other chlorinated compounds. No data available.

5.3 Advice for firefighters
Wear self-contained breathing apparatus (SCBA) and full protective gear. Use water spray to cool unopened containers. Avoid inhalation of combustion products.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. Avoid breathing vapors/mist. Provide adequate ventilation. Wear appropriate personal protective equipment.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Avoid release to the environment. Prevent entry into drains, surface waters, or soil.

6.3 Methods and material for containment and cleaning up
Contain spill. Absorb with inert material (e.g., sand, earth, vermiculite). Collect into suitable, labeled containers for disposal. Clean contaminated area with detergent and water. Dispose of waste in accordance with local regulations.

6.4 Reference to other sections
See Section 8 for personal protective equipment and Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Avoid breathing vapors/mist. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities
Store in a tightly closed container in a cool, dry, well-ventilated place. Protect from heat and sources of ignition. Keep away from incompatible materials. Incompatible materials: Not available.

7.3 Specific end use(s)
Not available.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limits: Not available.
Biological limit values: Not available.

8.2 Exposure controls

Engineering controls: Use local exhaust ventilation or general ventilation to maintain exposure below applicable limits (if established). Provide eyewash station and safety shower.
Personal protective equipment (PPE):
- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves (material not available). Wear protective clothing as appropriate.
- Respiratory protection: If ventilation is inadequate or if aerosol/vapor is generated, use appropriate respiratory protection. Specific respirator type: Not available.
- Hygiene measures: Wash hands after handling. Remove contaminated clothing and wash before reuse.
Environmental exposure controls: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available

Property	Value
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
Heat, flames, sparks, and other ignition sources. Avoid excessive heat. Other conditions: Not available.

10.5 Incompatible materials
Not available.

10.6 Hazardous decomposition products
May form phosphorus oxides and hydrogen chloride and/or other chlorinated compounds under thermal decomposition. No data available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: /OTHER TOXICITY INFORMATION/ Moderately toxic by ingestion. /OTHER TOXICITY INFORMATION/ Negative-chemical-ionization mass spectral screening of extracts of human seminal plasma has revealed a presence of a Cl7 ion cluster at a mass-to-charge ratio (m/z) of 463 in a significant number of the samples examined (34 out of 123). Experiments with different gases used to generate the negative-chemical-ionization plasma indicated that the ion at m/z 463 was a chloride adduca of a Cl6 molecule with a mass of 428 daltons. Negative-chemical-ionization mass measurement with ions from the iodoform mass spectrum used as reference peaks gave a mass of 427.882 daltons; C9H15PCl6 has a molecular weight of 427.883. Extraction of polyurethane foam with toluene produced an extract that consistently gave a negative-chemical-ionization spectrum containing an intense Cl7ion at m/z463. The component producing ion was isolated, and its proton nuclear magnetic resonance spectrum confirmed that it was tris (1,3-dichloro-2-propyl)phosphate, a mutagenic flame retardant. The negative-chemical-ionization screening evidence suggests that this flame retardant or its isomer tris(2,3-dichloro-l-propyl)phosphate, or both, are absorbed into the body from formulations in which they are used as flame retardants. Remedial action seems indicated to reduce human exposure to these compounds.
- Skin corrosion/irritation: No data available.

- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: /OTHER TOXICITY INFORMATION/ Negative-chemical-ionization mass spectral screening of extracts of human seminal plasma has revealed a presence of a Cl7 ion cluster at a mass-to-charge ratio (m/z) of 463 in a significant number of the samples examined (34 out of 123). Experiments with different gases used to generate the negative-chemical-ionization plasma indicated that the ion at m/z 463 was a chloride adduca of a Cl6 molecule with a mass of 428 daltons. Negative-chemical-ionization mass measurement with ions from the iodoform mass spectrum used as reference peaks gave a mass of 427.882 daltons; C9H15PCl6 has a molecular weight of 427.883. Extraction of polyurethane foam with toluene produced an extract that consistently gave a negative-chemical-ionization spectrum containing an intense Cl7ion at m/z463. The component producing ion was isolated, and its proton nuclear magnetic resonance spectrum confirmed that it was tris (1,3-dichloro-2-propyl)phosphate, a mutagenic flame retardant. The negative-chemical-ionization screening evidence suggests that this flame retardant or its isomer tris(2,3-dichloro-l-propyl)phosphate, or both, are absorbed into the body from formulations in which they are used as flame retardants. Remedial action seems indicated to reduce human exposure to these compounds. /GENOTOXICITY/ 9 halogenated alkanols, 9 corresponding tris (haloalkyl)phosphates, and 2 bis-(2,3-dibromopropyl)phosphate salts were evaluated for mutagenicity against Salmonella typhimurium TA98, TA100, TA1535, TA1537 and TA1538, with and without rat liver in vitro metabolic activation system (S9 mix). Most of the test samples showed mutagenic activity in the strains TA100 and TA1535, but not in the strains TA98, TA1537 and TA1538. In general, the mutagenic activities of the phosphates obtained with S9 mix were greater than the activities obtained without S9 mix. Among the phosphates, several structure--activity relationships were found; i.e., (i) the bromoalkyl derivatives were more mutagenic than the corresponding chloroalkyl derivatives, (ii) the beta-haloethyl derivatives were more mutagenic than the gamma-halopropyl derivatives, (iii) the phosphates having adjacent beta and gamma halogen atoms in the alkyl moiety, e.g., tris-(2,3-dibromopropyl)phosphate, were particularly potent mutagens, (iv) the branched carbon chain reduced the mutagenic activities in spite of the presence of beta-halogen atoms, e.g., tris(1-bromomethyl-2-bromoethyl)phosphate. However, such relations did not necessarily apply to the halogenated alkanols. It is concluded that the metabolic activation pathway via haloalkanols to mutagens must not be in common with all tris-BP-like phosphates.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: No data available.
- Aspiration hazard: No data available.

Likely routes of exposure
- /OTHER TOXICITY INFORMATION/ Moderately toxic by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics
- Not available.

SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Not available.

12.5 Results of PBT and vPvB assessment
Not available.

12.6 Endocrine disrupting properties
Not available.

12.7 Other adverse effects
Not available.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product: Dispose of contents/container in accordance with local/regional/national/international regulations. Do not discharge to drains.
Contaminated packaging: Dispose of as unused product. Empty containers may retain residues.
Waste code: Not available.

SECTION 14: Transport information

SECTION 14: Transport information

14.1 UN number
Not available.

14.2 UN proper shipping name
Not available.

14.3 Transport hazard class(es)
Not available.

14.4 Packing group
Not available.

14.5 Environmental hazards
Not available.

14.6 Special precautions for user
Not available.

14.7 Maritime transport in bulk according to IMO instruments
Not available.

SECTION 15: Regulatory information

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Not available.

15.2 Chemical safety assessment
Not available.

SECTION 16: Other information

SECTION 16: Other information

Product name: Tris(2,3-dichloropropyl) phosphate
CAS No.: 78-43-3
Catalog No.: CS-O-50017
Supplier: Clearsynth Labs Ltd., Mumbai, India
Emergency phone: +91-22-245045900

Revision date: Not available
SDS version: Not available

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