

CHAITANYA CHS, 2nd FLOOR, OFFICE # 206, SIDDHARTH NAGAR, S.V.ROAD, GOREGAON (W), MUMBAI 400062, MH, INDIA.
CONTACT: +9122 28725393 /94/ 95 | EMAILID: CARE@SUVCHEM.COM

MATERIAL SAFETY DATA SHEET (MSDS)**TRIPHOSGENE (FOR SYNTHESIS)****1 - Chemical Product**

MSDS Name: Triphosgene
Synonym: Bis(trichloromethyl)carbonat

Cas NO: 32315-10-9

Product Coad: T0209700100

Molecular Formula: C₃Cl₆O₃
Molecular Weight: 296.75

2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
32315-10-9	Triphosgene	99.0	250-986-3

3 - HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

Toxic by inhalation, in contact with skin and if swallowed. The toxicological properties of this material have not been fully investigated. Moisture sensitive. Lachrymator (substance which increases the flow of tears).

Potential Health Effects

Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Lachrymator (substance which increases the flow of tears).

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

Ingestion: Poison by ingestion. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. The toxicological properties of this substance have not been fully investigated.

Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. Toxic if inhaled. Can produce delayed pulmonary edema. Chronic: Effects may be delayed.

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 immediately. Do NOT allow victim to rub eyes or keep eyes closed.

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

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. 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:

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.

Extinguishing Media: Do NOT get water inside containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

6 - ACCIDENTAL RELEASE MEASURES

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

Spills/Leaks: Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

7 - HANDLING and STORAGE

Handling: Wash thoroughly after handling. Use with adequate ventilation.

Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Do not allow contact with water. Keep from contact with moist air and steam.

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

8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

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Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. Exposure Limits CAS# 32315-10-9: 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.

9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Crystals

Color: white to off-white

Odor: none reported

pH: Not available.

Vapor Pressure: 1010 mbar @ 206

Viscosity: Not available.

Boiling Point: 203.0 - 206.0 deg C @ 760.00m

Freezing/Melting Point: 77.00 - 80.00 deg C

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: N/A

Explosion Limits, upper: N/A

Decomposition Temperature: >350 deg C

Solubility in water: practically insoluble

Specific Gravity/Density:

10 - STABILITY AND REACTIVITY

Chemical Stability: Stable under normal temperatures and pressures. May decompose on exposure to moist air or water.

Conditions to Avoid: Incompatible materials, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, acids, amines.

Hazardous Decomposition Products: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

11 - TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 32315-10-9 unlisted.

LD50/LC50:

Not available.

Carcinogenicity:

Triphosgene - Not listed by ACGIH, IARC, or NTP.

12 - ECOLOGICAL INFORMATION**13 - DISPOSAL CONSIDERATIONS**

Dispose of in a manner consistent with federal, state, and local regulations.

14 - TRANSPORT INFORMATION

IATA

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.*

Hazard Class: 6.1

UN Number: 2811

Packing Group: II

IMO

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: 2811

Packing Group: II

RID/ADR

Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.

Hazard Class: 6.1

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UN Number: 2811
Packing group: II

15 - REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin
and if swallowed.

Safety Phrases:

S 7 Keep container tightly closed.

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

WGK (Water Danger/Protection)

CAS# 32315-10-9: No information available.

Canada

None of the chemicals in this product are listed on the DSL/NDL list.

CAS# 32315-10-9 is not listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 32315-10-9 is listed on the TSCA inventory.

16. Other Information

Product Use: Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

DISCLAIMER:

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

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