

# SAFETY DATA SHEET

## TRIPHOSGENE

### SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

|                                |                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------|
| <b>1.1 Product identifier:</b> |                                                                                          |
| <b>CAS Number:</b>             | 32315-10-9                                                                               |
| <b>EC number:</b>              | 250-986-3.                                                                               |
| <b>1.2 SYNONYMS</b>            | Triphosgene<br>Bis(trichloromethyl) carbonate<br>Carbonic acid bistrichlor methyl ester. |

### SECTION 2: Hazards identification:

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|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2.1 Classification of the substance or mixture:</b> | Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.                                                                                             |
| <b>Acute Oral toxicity:</b>                            | Category 3                                                                                                                                                                                                        |
| <b>Acute Dermal toxicity:</b>                          | Category 3                                                                                                                                                                                                        |
| <b>Acute inhalation toxicity</b>                       | Category 2                                                                                                                                                                                                        |
| <b>Skin corrosion/irritation:</b>                      | Category 1B                                                                                                                                                                                                       |
| <b>Serious eye damage/eye irritation</b>               | Category 1                                                                                                                                                                                                        |
| <b>2.2 Label elements:</b>                             |                                                                                                                                                                                                                   |
| <b>Hazard pictograms:</b>                              |                                                                                                                               |
| <b>Signal Word:</b>                                    | Danger                                                                                                                                                                                                            |
| <b>Hazard Statement:</b>                               | <b>H301</b> - Toxic if swallowed<br><b>H311</b> - Toxic in contact with skin<br><b>H314</b> - Causes severe skin burns and eye damage<br><b>H318</b> - Causes severe eye damage<br><b>H330</b> - Fatal if inhaled |
| <b>Precautionary Statements</b>                        | <b>P260</b> - Do not breathe dust/smoke/gas/smoke/steam/spray                                                                                                                                                     |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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|                        | <p><b>P264</b> - Wash face, hands and any exposed skin thoroughly after handling</p> <p><b>P271</b> - Use only outdoors or in a well-ventilated area</p> <p><b>P280</b> - Wear protective gloves/ protective clothing/ eye protection/ face protection</p> <p><b>P284</b> - Wear respiratory protection</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Response:</b>       | <p><b>P301 + P330 + P331</b> - IF SWALLOWED: rinse mouth. Do NOT induce vomiting</p> <p><b>P303 + P361 + P353</b> - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower</p> <p><b>P304 + P340</b> - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing</p> <p><b>P305 + P351 + P338</b> - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing</p> <p><b>P310</b> - Immediately call a POISON CENTER or doctor/ physician</p> <p><b>P320</b> - Specific emergency treatment (see the first aid instructions provided on this label) .</p> <p><b>P363</b> - Wash contaminated clothing before reuse</p> <p>Storage</p> <p><b>P403 + P233</b> - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up</p> |
| <b>Disposal:</b>       | <p><b>P501</b> - Dispose of contents/ container to an approved waste disposal plant</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Health Hazards:</b> | <p>Toxic if swallowed. Toxic in contact with skin. Corrosive. Causes skin and eye burns. Causes serious eye damage. Fatal if inhaled</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| <b>2.3 Other hazards:</b> | No information found |
|---------------------------|----------------------|

## SECTION 3: Composition/information on ingredients

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|---------------------------------------|----------------------------------------|
| <b>3.1 Chemical characterisation:</b> | Substances                             |
| <b>CAS No:</b>                        | Description: 32315-10-9<br>TRIPHOSGENE |
| <b>Identification number(s):</b>      | EC number: 250-986-3.                  |

## SECTION 4: First aid measures

|                                                                                       |                                                                                                                                                                                                                |
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| <b>4.1 Description of first aid measures</b>                                          |                                                                                                                                                                                                                |
| <b>General information:</b>                                                           |                                                                                                                                                                                                                |
| <b>After inhalation:</b>                                                              | Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician                                                                                   |
| <b>After Ingestion</b>                                                                | <b>DO NOT</b> induce vomiting. Call a physician or Poison Control Center immediately.                                                                                                                          |
| <b>After skin contact:</b>                                                            | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.                                                                                                    |
| <b>After eye contact:</b>                                                             | Immediately flush eyes with plenty of water for at least 15 minutes. Do not let victim rub eyes. Get medical attention.                                                                                        |
| <b>After swallowing:</b>                                                              | If symptoms persist consult doctor.                                                                                                                                                                            |
| <b>4.2 Most important symptoms and effects, both acute and delayed</b>                | can cause acute symptoms such as respiratory irritation, coughing, and chest pain, followed by potential delayed effects like pulmonary edema and difficulty breathing that may manifest up to 48 hours later. |
| <b>4.3 Indication of any immediate medical attention and special treatment needed</b> | treatment involves supportive care such as oxygen therapy, potential mechanical ventilation, and monitoring for delayed pulmonary edema, which can develop up to 48 hours post-exposure.                       |

## SECTION 5: Firefighting measures

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| <b>5.1 Extinguishing media</b>                                   | Use water spray, foam, dry chemical, or carbon dioxide (CO <sub>2</sub> ) to extinguish fires                    |
| <b>5.2 Special hazards arising from the substance or mixture</b> | The product causes burns of eyes, skin and mucous membranes. Contact with water liberates toxic gas              |
| <b>5.3 Advice for firefighters</b>                               | Wear self-contained breathing apparatus (SCBA) and full protective gear to avoid exposure to any smoke or fumes. |

## SECTION 6: Accidental release measures

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| <b>6.1 Personal precautions, protective equipment and emergency procedures</b> | Wear self-contained breathing apparatus (SCBA) and full protective gear to avoid exposure to any smoke or fumes. |
| <b>6.2 Environmental precautions:</b>                                          | Avoid release to the environment. Prevent spills from entering waterways, drains, or soil.                       |
| <b>6.3 Methods and material for containment and cleaning up:</b>               | Use absorbent materials such as sand, clay, or commercially available absorbent pads.                            |

## SECTION 7: Handling and storage

|                                                                         |                                                                                                                                                                                                                |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7.1 Precautions for safe handling</b>                                | Wear suitable gloves, eye protection, and protective clothing to prevent skin and eye contact.                                                                                                                 |
| <b>Information about fire - and explosion protection:</b>               | handle with care as it is moisture-sensitive and can react violently with water, releasing toxic gases; suitable extinguishing media include dry chemical powder, CO <sub>2</sub> , or alcohol-resistant foam. |
| <b>7.2 Conditions for safe storage, including any incompatibilities</b> | Store in a cool, dry place, away from moisture and direct sunlight.                                                                                                                                            |
| <b>Requirements to be met by storerooms and receptacles:</b>            | Ensure adequate ventilation in storage areas to prevent the accumulation of dust.                                                                                                                              |

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| <b>Information about storage in one common storage facility:</b> | When storing with other chemicals, ensure that they are compatible to prevent adverse reactions. |
| <b>7.3 Specific end use(s):</b>                                  | No information available                                                                         |

## SECTION 8: Exposure controls/personal protection

|                                                                     |                                                                                                                                                                                                                                                                                    |
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| <b>8.1 Control parameters</b>                                       |                                                                                                                                                                                                                                                                                    |
| <b>Additional information about design of technical facilities:</b> | A system of local and general exhaust is recommended                                                                                                                                                                                                                               |
| <b>8.2 Exposure controls</b>                                        |                                                                                                                                                                                                                                                                                    |
| <b>Personal protective equipment:</b>                               | Set up stations equipped with PPE (gloves, goggles, masks) near handling areas to ensure workers can quickly access necessary protective gear.                                                                                                                                     |
| <b>General protective and hygienic measures:</b>                    | Wash hands thoroughly after handling and avoid eating, drinking, or smoking in areas.                                                                                                                                                                                              |
|                                                                     | Respiratory protection: Required.                                                                                                                                                                                                                                                  |
| <b>Protection of hands:</b>                                         | The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.<br>Use gloves made of butyl rubber (butyl) - 0.7 mm coating thickness, chloroprene rubber (CR) - 0.5 mm coating thickness, fluoroelastomer (FKM) - 0.7 mm coating thickness |
|                                                                     | Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation                                                                                                                                                                  |
| <b>Penetration time of glove material:</b>                          | The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.                                                                                                                                                              |
|                                                                     | Eye protection: Required                                                                                                                                                                                                                                                           |

## SECTION 9: Physical and chemical properties

|                                                                  |                                  |
|------------------------------------------------------------------|----------------------------------|
| <b>9.1 Information on basic physical and chemical properties</b> |                                  |
| <b>General Information</b>                                       |                                  |
| <b>Appearance: Form:</b>                                         | Solid                            |
| <b>Colour:</b>                                                   | White                            |
| <b>Odour:</b>                                                    | Musty odor                       |
| <b>pH-value:</b>                                                 | No information available         |
| <b>Melting point/Melting range:</b>                              | 77 - 81 °C / 170.6 - 177.8       |
| <b>Boiling point/Boiling range:</b>                              | 203 - 206 °C / 397.4 - 402.8 ° F |
| <b>Flammability (solid, gaseous):</b>                            | No information available         |
| <b>Ignition temperature:</b>                                     | No information available         |
| <b>Decomposition temperature:</b>                                | >350°C                           |
| <b>Self-igniting:</b>                                            | No information available         |
| <b>Danger of explosion:</b>                                      | No information available         |
| <b>Explosion limits: Lower:</b>                                  | No information available         |
| <b>Vapour pressure:</b>                                          | 16 mbar @ 90 °C                  |
| <b>Density at 20 °C:</b>                                         | 1.78 g/cm <sup>3</sup>           |
| <b>Relative density:</b>                                         | 1.78 g/cm <sup>3</sup>           |
| <b>Vapour density:</b>                                           | 6.5                              |
| <b>Evaporation rate:</b>                                         | 0.3 mmHg at 25 °C (approx.)      |
| <b>Solubility in / Miscibility with-<br/>water at 20 °C:</b>     |                                  |
| <b>Partition coefficient(n-<br/>octanol/water):</b>              | practically insoluble in water   |
| <b>Viscosity:</b>                                                | No information available.        |

## SECTION 10: Stability and reactivity

|                                                |                                                                                                                      |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | Heat sensitive. Moisture sensitive. Contact with water liberates toxic gas.                                          |
| <b>10.2 Chemical stability</b>                 | stable at room temperature                                                                                           |
| <b>10.3 Possibility of hazardous reactions</b> | May release phosgene and hydrochloric acid when contact with water.                                                  |
| <b>10.4 Conditions to avoid</b>                | To avoid thermal decomposition, do not overheat. Excess heat. Incompatible products. Exposure to moist air or water. |
| <b>10.5 Incompatible materials:</b>            | Acids. Strong oxidizing agents. Strong bases. Amines.                                                                |

|                                               |                                                                                                    |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>10.6 Hazardous decomposition products:</b> | Hydrogen chloride gas. Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Chlorine. Phosgene |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|

## SECTION 11: Toxicological information

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|----------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>11.1 Information on toxicological effects</b>   |                                                                                     |
| <b>Acute toxicity:</b>                             | <b>LD50 Oral:</b> >2000mg/kg (rat)                                                  |
|                                                    | <b>LD50 Dermal:</b> 2000mg/kg (rat)                                                 |
|                                                    | <b>LC50 Inhalation:</b> 41.5 mg/m <sup>3</sup> (rat) 4h                             |
| <b>skin corrosion/irritation:</b>                  | Category 1                                                                          |
| <b>respiratory or skin sensitization:</b>          | No data available                                                                   |
| <b>Germ cell mutagenicity:</b>                     | No data available                                                                   |
| <b>Carcinogenicity:</b>                            | No carcinogenic chemicals found                                                     |
| <b>Reproductive toxicity:</b>                      | No data available                                                                   |
| <b>STOT- single exposure:</b>                      | No data available                                                                   |
| <b>STOT-repeated exposure:</b>                     | No data available                                                                   |
| <b>Aspiration hazard:</b>                          | No data available                                                                   |
| <b>11.2 Information on other hazards</b>           | No information available                                                            |
| <b>Symptoms / effects, both acute and delayed:</b> | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated |

## SECTION 12: Ecological information

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|--------------------------------------------|---------------------------------------------|
| <b>12.1 Toxicity:</b>                      | Do not empty into drains                    |
| <b>12.2 Persistence and degradability:</b> | May persist, based on information available |
| <b>12.3 Bioaccumulative potential:</b>     | May have some potential to bioaccumulate    |
| <b>12.4 Mobility in soil:</b>              | Spillage unlikely to penetrate soil         |
| <b>12.5 Other adverse effects</b>          | Not available                               |

## SECTION 13: Disposal considerations

|                                                 |                                                                          |
|-------------------------------------------------|--------------------------------------------------------------------------|
| <b>13.1 Waste treatment methods</b>             |                                                                          |
| <b>Uncleaned packaging:<br/>Recommendation:</b> | Dispose of this container to hazardous or special waste collection point |
| <b>Recommended cleansing agents:</b>            | Water, sodium bicarbonate(aqueous), toluene or chloroform.               |

## SECTION 14: Transport information

|                                                                                |                                        |
|--------------------------------------------------------------------------------|----------------------------------------|
| <b>14.1 UN-Number · ADR, ADN, IMDG, IATA:</b>                                  | UN2928                                 |
| <b>14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:</b>                    | TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S |
| <b>14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :</b>                | 6.1                                    |
| <b>14.4 Packing group · ADR, IMDG, IATA:</b>                                   | 2                                      |
| <b>14.5 Environmental hazards:</b>                                             | Yes                                    |
| <b>14.6 Special precautions for user</b>                                       | See section 2.2                        |
| <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | IBC02                                  |

## SECTION 15: Regulatory information

|                                                                                                                                     |                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture<br/>Directive 2012/18/EU</b> | classified as a substance under CLP regulation. |
| <b>Named dangerous substances</b>                                                                                                   | ANNEX I Substance is listed                     |
| <b>15.2 Chemical safety assessment:</b>                                                                                             | No data available                               |

## SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to

ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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