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

Catalogue Number	CS-BX-00651
Product Name	Tetranitromethane
CAS No.	509-14-8
Category	Fine Chemicals
Synonyms	Not available
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:

Skin irritation (Category 2)
Serious eye damage/eye irritation (Category 2)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H271	Not available
H301	Not available
H315	Causes skin irritation.

H319	Causes serious eye irritation.
H330	Not available
H335	Not available
H351	Not available
H350	Not available
H372	Not available

Precautionary Statement(s)

Code	Statement
P203	Not available
P210	Not available
P220	Not available
P260	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P264+P265	Not available
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P283	Not available
P284	Not available
P301+P316	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if presen
P306+P360	Not available
P316	Not available
P318	Not available
P319	Get medical help if you feel unwell.
P320	Not available

P321	Specific treatment (see … on this label).
P330	Not available
P332+P317	If skin irritation occurs: Get medical help.
P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Not available
P371+P380+P375	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P420	Not available
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Tetranitromethane
CAS Number : 509-14-8
Molecular Formula : CN4O8
Molecular Weight : 196.03 g/mol
Parent Chemical : Not available
Synonyms : Not available
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 immediately. Show this Safety Data Sheet to the physician. Remove contaminated clothing and shoes.
- Inhalation: Move person to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, administer oxygen by trained personnel. If not breathing, give artificial respiration by trained personnel. Get immediate medical attention.
- Skin contact: Immediately wash with plenty of water and soap for at least 15 minutes. Remove contaminated clothing. Get medical attention.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Get immediate medical attention.
- Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get immediate 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. Not available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
- Suitable extinguishing media: Use extinguishing measures appropriate to surrounding fire. Not available.
- Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture
- May decompose under fire conditions to release toxic and/or corrosive gases/vapors (e.g., nitrogen oxides). Not available.
- Explosion hazard: Not available.

5.3 Advice for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Fight fire from a safe distance and protected location.
- Prevent fire-fighting water from entering drains or waterways.
- Cool unopened containers exposed to fire with water spray if safe to do so.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Evacuate area. Avoid breathing vapors/mist. Avoid contact with skin and eyes.
- Provide adequate ventilation.
- Wear appropriate personal protective equipment (see Section 8).

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

6.3 Methods and material for containment and cleaning up
- Contain spill. Absorb with inert absorbent material (e.g., dry sand, earth, vermiculite) if compatible.
- Collect in suitable, closed containers for disposal.
- Decontaminate spill area with appropriate methods. Not available.

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 a chemical fume hood or with local exhaust ventilation.
- Avoid breathing vapors/mist. Avoid contact with skin, eyes, and clothing.

- Keep away from heat, sparks, open flames, and other ignition sources.
- Use non-sparking tools and grounded/bonded equipment where applicable.
- Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities
- Store tightly closed in a cool, dry, well-ventilated place.
- Protect from heat and direct sunlight.
- Store away from incompatible materials. Incompatibilities: 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 fume hood. Provide eyewash station and safety shower.
- Personal protective equipment (PPE):
- Eye/face protection: Safety goggles or face shield.
- Skin protection: Chemical-resistant gloves; protective clothing as appropriate.
- Respiratory protection: Use NIOSH/EN-approved respirator if ventilation is inadequate. Selection based on exposure assessment. Not available.
- Hygiene measures: Remove contaminated clothing and wash before reuse. Wash hands after handling.
- Environmental exposure controls: Avoid release to the environment. Use appropriate containment.

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

Property	Value
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
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
- Not available.

10.2 Chemical stability
- Not available.

10.3 Possibility of hazardous reactions
- Not available.

10.4 Conditions to avoid
- Heat, flames, sparks, and other ignition sources. Avoid conditions that may cause decomposition. Not available.

10.5 Incompatible materials
- Not available.

10.6 Hazardous decomposition products
- Nitrogen oxides (NOx). Other decomposition products: Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: LC50 (rat) = 18 ppm/4H /SIGNS AND SYMPTOMS/ Nasal irritation, burning eyes, dyspnea, cough, chest oppression, and dizziness in men who handled crude TNT have been attributed to tetranitromethane exposure. Headache, methemoglobinemia, and a few deaths have also been attributed to similar exposure ... Symptoms experienced in the laboratory production of TNM /are/ ... irritations of eyes, nose, and throat from acute exposures and, after more prolonged inhalation, headache and respiratory distress. Skin irritation is not anticipated when humans or animals are repeatedly exposed to TNM.
- Skin corrosion/irritation: /SIGNS AND SYMPTOMS/ Nasal irritation, burning eyes, dyspnea, cough, chest oppression, and dizziness in men who handled crude TNT have been attributed to tetranitromethane exposure. Headache, methemoglobinemia, and a few deaths have also been attributed to similar exposure ... Symptoms experienced in the laboratory production of TNM /are/ ... irritations of eyes, nose, and throat from acute exposures and, after more prolonged inhalation, headache and respiratory distress. Skin irritation is not anticipated when humans or animals are repeatedly exposed to TNM.
- Serious eye damage/eye irritation: /LABORATORY ANIMALS: Acute Exposure/ In all /acute/ experiments, exposed animals exhibited similar symptoms, chiefly those of respiratory tract irritation. The first signs are increased preening, change in the respiratory pattern, and evidences of eye irritation followed by rhinorrhea, gasping, and salivation. The symptoms progress to cyanosis, excitement, and death at higher concentrations. Methemoglobinemia occurred in exposed cats ... Animals exposed at 3 to 9 ppm for 1 to 3 days developed pulmonary edema. Lower concentrations (0.1 to 0.4 ppm) produced only mild irritation ... The results of pathological examinations of animals that died from acute exposures were all similar. There was marked lung irritation and destruction of epithelial cells, vascular congestion, pulmonary edema, and emphysema with tracheitis and bronchopneumonia. Nonspecific changes in the liver and kidney were observed in some animals.[Bingham, E.; Cohrssen, B.; Powell, C.H.; Patty's Toxicology Volumes 1-9 5th ed. John Wiley & Sons. New York, N.Y. (2001)., p. 4:563] /LABORATORY ANIMALS: Acute Exposure/ /Investigators/ exposed cats to air passed over crude TNT, which contained TNM as the main volatile impurity. Concentrations of TNM ranging from 7 to 25.2 ppm produced marked ocular and upper respiratory tract irritation, acute pulmonary edema, and mild methemoglobinemia, with fatty hepatic and renal degeneration preceding death, which occurred within a few hours. Exposure at concentrations of 0.1 to 0.4 ppm caused mild irritation in cats, but no other untoward effects were seen after exposure for 6 hours on 2 consecutive days.[American Conference of Governmental Industrial Hygienists. Documentation of the TLV's and BEI's with Other World Wide Occupational Exposure Values. CD-ROM Cincinnati, OH 45240-1634 2005., p. 1]
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: Evaluation: There is inadequate evidence in humans for the carcinogenicity of tetranitromethane. There is sufficient evidence in experimental animals for the carcinogenicity of tetranitromethane. Overall evaluation: Tetranitromethane is possibly carcinogenic to humans (Group 2B). A3: Confirmed animal carcinogen with unknown relevance to humans.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: /SIGNS AND SYMPTOMS/ EFFECTS OF SHORT-TERM EXPOSURE: ... /Tetranitromethane/ is severely irritating to the eyes, the skin and the respiratory tract. Inhalation of the vapor may cause lung edema ... The substance may cause effects on the blood, resulting in the formation of methemoglobin. The substance may cause effects on the kidneys, liver and lungs. Medical observation is indicated. The effects may be delayed ... The symptoms of lung edema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential ... EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: ... possibly carcinogenic to humans. /LABORATORY ANIMALS:

Subchronic or Prechronic Exposure/ /Investigators/ exposed 19 rats and 2 dogs 6 hours/day, 5 days/week for 6 months at 0 or 6.35 ppm /to tetranitromethane/. Eleven rats died during the exposure, but body weight gain of the surviving rats was not different from that of the control. Upon gross examination of early-death rats and those sacrificed at scheduled termination of the study, pulmonary hyperemia and distention were found. Bacterial or viral pneumonia was considered the primary cause of these early deaths and the respiratory infection was secondary to the overt pulmonary irritation caused by TNM. Both dogs survived; clinical signs of lethargy and coughing occurred only during the first 2 days of exposure. No gross or microscopic abnormalities were noted in dog respiratory tract or in any of the other organs.[American Conference of Governmental Industrial Hygienists. Documentation of the TLV's and BEI's with Other World Wide Occupational Exposure Values. CD-ROM Cincinnati, OH 45240-1634 2005., p. 2]
- Aspiration hazard: No data available.

Likely routes of exposure
- See Inhalation.

Symptoms related to the physical, chemical and toxicological characteristics
- Cough. Blue lips, fingernails and skin. Headache. Laboured breathing. Vomiting. Dizziness. Symptoms may be delayed.

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
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains or the environment.
- Incineration or disposal by a licensed hazardous waste contractor may be appropriate. Not available.

- Contaminated packaging: Dispose of as unused product unless cleaned/decontaminated in accordance with regulations.

SECTION 14: Transport information

SECTION 14: Transport information

- UN number: Not available.
- UN proper shipping name: Not available.
- Transport hazard class(es): Not available.
- Packing group: Not available.
- Environmental hazards: Not available.
- Special precautions for user: Not available.
- 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: Tetranitromethane
- CAS No.: 509-14-8
- Catalog No.: CS-BX-00651
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

Disclaimer
- The information provided is believed to be accurate based on available data; however, it is provided without warranty. Users must determine suitability for their particular application and comply with all applicable laws and regulations.

Revision information
- Not available.

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