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

Catalogue Number	CS-ED-01645
Product Name	Cyanogen chloride
CAS No.	506-77-4
Category	Fine Chemicals
Synonyms	Chlorine cyanide
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

Hazard Statement(s)

Code	Statement
H280	Not available
H300+H310+H330	Not available
H300	Not available
H310	Not available

H314	Not available
H318	Causes serious eye damage.
H330	Not available
H400	Not available
H370	Not available
H372	Not available
H371	Not available
H373	Not available

Precautionary Statement(s)

Code	Statement
P260	Not available
P262	Not available
P264	Wash hands thoroughly after handling.
P264+P265	Not available
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P273	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Not available
P301+P316	Not available
P301+P330+P331	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P302+P361+P354	Not available
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	Not available
P316	Not available
P317	Not available
P320	Not available
P321	Specific treatment (see … on this label).

P330	Not available
P361+P364	Not available
P363	Not available
P391	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P410+P403	Not available
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P308+P316	Not available
P319	Get medical help if you feel unwell.

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Cyanogen chloride
CAS Number : 506-77-4
Molecular Formula : ClCN
Molecular Weight : 61.47
Parent Chemical : Not available
Synonyms : Chlorine cyanide
Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
General advice:
- Extremely toxic by inhalation; may be fatal. Remove from exposure immediately.
- Ensure responders use appropriate respiratory protection; avoid becoming exposed.
- Seek immediate medical attention.

Inhalation:
- Move person to fresh air immediately.
- Keep at rest in a position comfortable for breathing.
- If breathing is difficult, trained personnel should administer oxygen.
- If not breathing, trained personnel should provide artificial respiration.
- Immediate medical attention required.

Skin contact:
- Remove contaminated clothing and shoes.
- Rinse skin with plenty of water for at least 15 minutes.

- Wash with soap and water.
- Get immediate medical attention.

Eye contact:
- Rinse cautiously with water for at least 15 minutes, lifting upper and lower eyelids.
- Remove contact lenses if present and easy to do; continue rinsing.
- Immediate medical attention required.

Ingestion:
- Rinse mouth with water if conscious.
- Do NOT induce vomiting.
- Never give anything by mouth to an unconscious person.
- Immediate medical attention required.

4.2 Most important symptoms and effects, both acute and delayed
- No data 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:
- Use extinguishing media appropriate for surrounding fire.
- No data available.

Unsuitable extinguishing media:
- No data available.

5.2 Special hazards arising from the substance or mixture
- Highly toxic gas/vapors may be released.
- Thermal decomposition may produce toxic and/or corrosive fumes.
- No data available.

5.3 Advice for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Approach from upwind; isolate hazard area.
- Cool exposed containers with water spray from a safe distance.
- Prevent fire-fighting water from entering drains or waterways.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Evacuate area; restrict access.
- Avoid breathing gas/vapors; avoid contact with skin and eyes.
- Ensure adequate ventilation.

- Wear appropriate PPE including respiratory protection (SCBA for unknown/high concentrations).

6.2 Environmental precautions
- Prevent release to the environment.
- Prevent entry into sewers, drains, and waterways.

6.3 Methods and material for containment and cleaning up
- Stop leak if safe to do so.
- Ventilate area.
- For gas release: contain/mitigate by isolation and controlled ventilation; use appropriate gas scrubbing if available.
- Collect contaminated materials in suitable, sealed containers for disposal.

6.4 Reference to other sections
- See Section 8 for exposure controls/personal protection.
- See Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Handle only in a well-ventilated area/fume hood or closed system.
- Avoid breathing gas/vapors; avoid contact with skin and eyes.
- Use appropriate respiratory protection where exposure may occur.
- Keep away from heat, sparks, open flames, and incompatible materials.
- 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 moisture.
- Store locked up.
- Keep away from incompatible materials.
- Incompatible materials: No data available.

7.3 Specific end use(s)
- Fine chemical. No data available.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limits:
- No data available.

Biological limit values:
- No data available.

8.2 Exposure controls
Engineering controls:
- Use local exhaust ventilation or process enclosure to minimize exposure.

- Provide eyewash station and safety shower.

Personal protective equipment (PPE):
Eye/face protection:
- Chemical safety goggles and/or face shield.

Skin protection:
- Wear chemical-resistant gloves.
- Wear appropriate protective clothing.

Respiratory protection:
- If exposure limits are exceeded or exposure is likely: use appropriate respirator.
- For emergency response/unknown concentrations: use SCBA.

Hygiene measures:
- Handle in accordance with good industrial hygiene and safety practice.
- Remove contaminated clothing and wash before reuse.

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

Property	Value
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
- No data available.

10.2 Chemical stability
- No data available.

10.3 Possibility of hazardous reactions
- No data available.

10.4 Conditions to avoid
- Heat.
- Moisture.
- No data available.

10.5 Incompatible materials
- No data available.

10.6 Hazardous decomposition products
- Toxic and/or corrosive fumes.
- No data available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Organic nitriles decompose into cyanide ions both in vivo and in vitro. Consequently the primary mechanism of toxicity for organic nitriles is their production of toxic cyanide ions or hydrogen cyanide. Cyanide is an inhibitor of cytochrome c oxidase in the fourth complex of the electron transport chain (found in the membrane of the mitochondria of eukaryotic cells). It complexes with the ferric iron atom in this enzyme. The binding of cyanide to this cytochrome prevents transport of electrons from cytochrome c oxidase to oxygen. As a result, the electron transport chain is disrupted and the cell can no longer aerobically produce ATP for energy. Tissues that mainly depend on aerobic respiration, such as the central nervous system and the heart, are particularly affected. Cyanide is also

known produce some of its toxic effects by binding to catalase, glutathione peroxidase, methemoglobin, hydroxocobalamin, phosphatase, tyrosinase, ascorbic acid oxidase, xanthine oxidase, succinic dehydrogenase, and Cu/Zn superoxide dismutase. Cyanide binds to the ferric ion of methemoglobin to form inactive cyanmethemoglobin. (L97) - Intense irritation, severe spasmodic blinking (blepharospasm), and tear production (lacrimation). - Contact with only the eyes has not been known to result in whole-body (systemic) toxicity, although this is a possibility. - See Inhalation Exposure.
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: /GENOTOXICITY/ /Cyanogen chloride tested negative in Salmonella bacterial mutagenicity assay using Salmonella strains TA100, TA1535, TA97, TA98 with or without S9 activation./
- Carcinogenicity: /LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ /EPA's Oral RfD for chlorine cyanide is based in part on a chronic toxicity study in rats conducted by Howard and Hanzal in 1955./ ... In this 2-year dietary study, rats (10/sex/group) were administered food fumigated with hydrogen cyanide. The average daily concentrations were 73 and 183 mg CN/kg diet. From the data reported on food consumption and body weight, daily estimated doses were 4.3 mg and 10.8 mg CN/kg bw. The average food CN concentrations were estimated based on the authors' data for concentration at the beginning and end of each food preparation period and by assuming a first-order rate of loss for the intervening period. There were no treatment-related effects on growth rate, no gross signs of toxicity, and no histopathological lesions.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: Human systemic effects by inhalation: lacrimation, conjunctiva irritation, and chronic pulmonary edema or congestion. Exposure to high levels of cyanide for a short time harms the brain and heart and can even cause coma, seizures, apnea, cardiac arrest and death. Chronic inhalation of cyanide causes breathing difficulties, chest pain, vomiting, blood changes, headaches, and enlargement of the thyroid gland. Skin contact with cyanide salts can irritate and produce sores. (L96, L97)
- Aspiration hazard: No data available.

Likely routes of exposure
- Human systemic effects by inhalation: lacrimation, conjunctiva irritation, and chronic pulmonary edema or congestion.

Symptoms related to the physical, chemical and toxicological characteristics
- Human systemic effects by inhalation: lacrimation, conjunctiva irritation, and chronic pulmonary edema or congestion.

SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity
- No data available.

12.2 Persistence and degradability
- No data available.

12.3 Bioaccumulative potential
- No data available.

12.4 Mobility in soil
- No data available.

12.5 Results of PBT and vPvB assessment
- No data available.

12.6 Endocrine disrupting properties
- No data available.

12.7 Other adverse effects
- No data 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.
- Treat as hazardous waste.
- Contaminated packaging: dispose of as hazardous waste.
- No data 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
- No data available.

15.2 Chemical safety assessment
- No data available.

SECTION 16: Other information

SECTION 16: Other information

Product identifier:
- Product name: Cyanogen chloride
- Synonyms: Chlorine cyanide
- CAS No.: 506-77-4
- Catalog No.: CS-ED-01645
- Molecular weight: 61.47

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, no warranty is expressed or implied. Users must determine suitability for their particular purpose and comply with applicable regulations.

Revision information:
- No data available.

DISCLAIMER

This MSDS is system-generated. Please verify and confirm all data, statements, and values with the Support Team before use or distribution.