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

Catalogue Number	CS-T-14205
Product Name	Cycloate
CAS No.	1134-23-2
Category	Pesticide Standards
Synonyms	S-ethyl cyclohexyl(ethyl)carbamothioate
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:

Acute toxicity (Category 4)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H302	Harmful if swallowed.

Precautionary Statement(s)

Code	Statement

P264	Wash hands thoroughly after handling.
P270	Not available
P301+P317	Not available
P330	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 : Cycloate
CAS Number : 1134-23-2
Molecular Formula : C11H21NOS
Molecular Weight : 215.36
Parent Chemical : -
Synonyms : S-ethyl cyclohexyl(ethyl)carbamothioate
Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
General advice: Remove contaminated clothing and shoes. Seek medical attention if symptoms persist or if exposure is significant.
Inhalation: Move person to fresh air. Keep at rest. If breathing is difficult, seek medical attention.
Skin contact: Wash with plenty of soap and water. Get 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: Use extinguishing measures appropriate to local circumstances and the surrounding environment (e.g., water spray, alcohol-resistant foam, dry chemical, carbon dioxide).
Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture
Hazardous combustion products: Not available. Thermal decomposition may produce irritating and/or toxic fumes.

5.3 Advice for firefighters
Wear self-contained breathing apparatus (SCBA) and full protective gear. Cool containers with water spray to prevent rupture. Avoid runoff to drains and waterways.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing dust/vapors/mist. Avoid contact with skin and eyes. 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 waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up
Contain spill. Collect spilled material using non-combustible absorbent (e.g., sand, earth, vermiculite) and place in a suitable, labeled container for disposal. Clean contaminated area with suitable cleaning methods. 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
Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Avoid breathing dust/vapors/mist. Do not eat, drink, or smoke when using this product. Wash hands thoroughly after handling.

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

7.3 Specific end use(s)
Pesticide standard / laboratory use. Not for food, drug, or household use.

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.
Personal protective equipment (PPE):
- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves and protective clothing appropriate to the risk of exposure.
- Respiratory protection: If ventilation is inadequate or exposure is possible, use appropriate respiratory protection.
- Hygiene measures: Wash hands and exposed skin after handling. 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
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, open flames, and other ignition sources. Other conditions: Not available.

10.5 Incompatible materials
Not available.

10.6 Hazardous decomposition products
Not available. May emit irritating and/or toxic fumes upon thermal decomposition.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Some thiocarbamates (EPTC, Molinate, Pebulate, and Cycloate) share a common mechanism of toxicity, i.e. the inhibition of acetylcholinesterase. An acetylcholinesterase inhibitor suppresses the action of acetylcholine esterase. Because of its essential function, chemicals that interfere with the action of acetylcholine esterase are potent neurotoxins, causing excessive salivation and eye-watering in low doses. Headache, salivation, nausea, vomiting, abdominal pain and diarrhea are often prominent at higher levels of exposure. Acetylcholine esterase breaks down the neurotransmitter acetylcholine, which is released at nerve and muscle junctions, in order to allow the muscle or organ to relax. The result of acetylcholine esterase inhibition is that acetylcholine builds up and continues to act so that any nerve impulses are continually transmitted and muscle contractions do not stop. Data concerning the effects of thiocarbamates on man are scarce. However, cases of irritation and sensitization have been observed among agricultural workers. Some thiocarbamates, e.g., molinate, have an effect on sperm morphology and, consequently, on reproduction. However, no teratogenic effects have been observed. The results of mutagenicity studies have shown that thiocarbamates containing dichloroallyl groups are highly mutagenic. Some thiocarbamates are acetylcholine esterase inhibitors. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved.

- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: Data concerning the effects of thiocarbamates on man are scarce. However, cases of irritation and sensitization have been observed among agricultural workers. Some thiocarbamates, e.g., molinate, have an effect on sperm morphology and, consequently, on reproduction. However, no teratogenic effects have been observed. The results of mutagenicity studies have shown that thiocarbamates containing dichloroallyl groups are highly mutagenic. Some thiocarbamates are acetylcholine esterase inhibitors. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. /LABORATORY ANIMALS: Acute Exposure/ Cycloate is a moderate eye and dermal irritant and a dermal sensitizer. /From table/
- Germ cell mutagenicity: Data concerning the effects of thiocarbamates on man are scarce. However, cases of irritation and sensitization have been observed among agricultural workers. Some thiocarbamates, e.g., molinate, have an effect on sperm morphology and, consequently, on reproduction. However, no teratogenic effects have been observed. The results of mutagenicity studies have shown that thiocarbamates containing dichloroallyl groups are highly mutagenic. Some thiocarbamates are acetylcholine esterase inhibitors. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. /GENOTOXICITY/ In a mammalian cell cytogenetics assays (chromosome aberration) ... human lymphocytes, derived from one male and one female healthy donors were exposed in culture to cycloate (98.1% ai ...), in dimethyl sulfoxide (DMSO) for 3 hours at doses of 0, 10, 50 or 100 ug/mL with and without metabolic activation (both donors). The S-9 homogenate was derived from the livers of Aroclor 1254-induced Alpk:APf Sprague-Dawley rats. Cycloate was cytotoxic, causing a > or = 30% reduction in the mitotic index (MI) at 100 ug/mL without S-9 and an = 15% reduction in the MI at 100 ug/mL with S-9 (both donor cells). In preliminary testing, few, if any metaphases were observed at 150 ug/mL and levels > or = 200 ug/mL were insoluble. The positive controls induced the expected clastogenic responses. There was, however, no indication that cycloate induced an increase in structural chromosome aberrations at any concentration. /98.1%/
- Carcinogenicity: Cancer Classification: Not Likely to be Carcinogenic to Humans Cycloate is classified as not likely to be a carcinogen to humans.
- Reproductive toxicity: Data concerning the effects of thiocarbamates on man are scarce. However, cases of irritation and sensitization have been observed among agricultural workers. Some thiocarbamates, e.g., molinate, have an effect on sperm morphology and, consequently, on reproduction. However, no teratogenic effects have been observed. The results of mutagenicity studies have shown that thiocarbamates containing dichloroallyl groups are highly mutagenic. Some thiocarbamates are acetylcholine esterase inhibitors. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved.
- STOT-single exposure: No data available.
- STOT-repeated exposure: /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ In 90 day feeding studies, no toxic symptom was noted in dogs receiving less than or equal to 240 mg/kg daily. /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ 90 day dietary feed study was conducted in rats. NOEL was established at 55 mg/kg/day.
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- Data concerning the effects of thiocarbamates on man are scarce. However, cases of irritation and sensitization have been observed among agricultural workers. Some thiocarbamates, e.g., molinate, have an effect on sperm morphology and, consequently, on reproduction. However, no teratogenic effects have been observed. The results of mutagenicity studies have shown that thiocarbamates containing dichloroallyl groups are highly mutagenic. Some thiocarbamates are acetylcholine esterase inhibitors. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved.

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
Not 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.
Contaminated packaging: Dispose of as unused product or according to local requirements.
Waste codes: 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 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
No data available.

SECTION 16: Other information

SECTION 16: Other information

Product name: Cycloate
CAS No.: 1134-23-2
Synonyms: S-ethyl cyclohexyl(ethyl)carbamothioate
Catalog No.: CS-T-14205
Supplier: Clearsynth Labs Ltd., Mumbai, India
Emergency phone: +91-22-245045900

Revision date: Not available
Disclaimer: The information provided is believed to be accurate based on available data; however, it is provided without warranty. Users are responsible for determining suitability for their particular application and for complying with applicable laws and regulations.

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