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

Catalogue Number	CS-MM-43860
Product Name	(1S,4S)-DIMETHYL CYCLOHEXANE-1,4-DICARBOXYLATE
CAS No.	3399-21-1
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
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H412	Not available

Precautionary Statement(s)

Code	Statement
P264+P265	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if presen
P337+P317	If eye irritation persists: Get medical help.
P264	Wash hands thoroughly after handling.
P273	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P321	Specific treatment (see … on this label).
P332+P317	If skin irritation occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : (1S,4S)-DIMETHYL CYCLOHEXANE-1,4-DICARBOXYLATE
CAS Number : 3399-21-1
Molecular Formula : C10H16O4
Molecular Weight : 200.24 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: Remove from exposure. Show this SDS to medical personnel if available.
- Inhalation: Move person to fresh air. If symptoms persist, get medical attention.
- Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention if irritation persists.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation persists.
- Ingestion: Rinse mouth. Do not induce vomiting unless directed by medical personnel. Get medical attention if you feel unwell.
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 surrounding fire (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
- Specific hazards: No data available.
- Hazardous combustion products: Carbon oxides. Other decomposition products: Not available.
5.3 Advice for firefighters
- Wear self-contained breathing apparatus and full protective gear.
- Cool containers with water spray if exposed to fire.
- 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
- Avoid breathing dust/vapors/mist. Avoid contact with skin and eyes.
- Use appropriate personal protective equipment (see Section 8).
- Ensure adequate ventilation.
6.2 Environmental precautions
- Avoid release to the environment. Prevent entry into drains, sewers, and waterways.
6.3 Methods and material for containment and cleaning up
- Contain spill. Collect using inert absorbent material.
- Place in suitable, closed container for disposal.
- Clean contaminated area with appropriate cleaning method. Avoid generating dust.
6.4 Reference to other sections
- See Section 8 for exposure controls/personal protection and Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage
7.1 Precautions for safe handling
- Handle in accordance with good industrial hygiene and safety practice.
- Avoid contact with skin and eyes. Avoid breathing dust/vapors/mist.
- Use with adequate ventilation.
- Keep container tightly closed when not in use.
7.2 Conditions for safe storage, including any incompatibilities
- Store in a cool, dry, well-ventilated place.

- Keep away from incompatible materials. Incompatibilities: Not available.
- Protect from moisture and excessive heat. Specific storage conditions: Not available.

7.3 Specific end use(s)
- Fine chemical / laboratory use. No further information 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
- Appropriate engineering controls: Use local exhaust ventilation or general ventilation to minimize exposure.
- Personal protective equipment:
- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves (material not specified). Protective clothing as appropriate.
- Respiratory protection: If ventilation is inadequate, use appropriate respiratory protection. Specific recommendations: Not available.
- Hygiene measures: Wash hands after handling. Do not eat, drink, or smoke when using this product.

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

Property	Value
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
- 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: Not available.
- Other conditions to avoid: Not available.
10.5 Incompatible materials
- Not available.
10.6 Hazardous decomposition products
- Carbon oxides. Other decomposition products: Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Acute Eye Irritation/Corrosion: Not irritating to the eye. Acute Dermal Irritation/Corrosion: Irritating
- Skin corrosion/irritation: Acute Dermal Irritation/Corrosion: Irritating
- Serious eye damage/eye irritation: Acute Eye Irritation/Corrosion: Not irritating to the eye.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.

- Reproductive toxicity: /LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ /Dose/ 0, 1.5, 4.5, and 15.0 mg/g of feed (0.15, 0.45, and 1.5%) Approx. 92, 276, and 888 mg/kg (male), and 111, 351, and 1124 mg/kg (female). /Rats Sprague-Dawley, exposure 38-57 days/. The study consisted of four phases: pre-mating (14 days); mating (1 to 14 days); pregnancy (21 to 23 days); and early lactation (4 to 6 days). The male rats were treated throughout the study, a period of 50 days. The female rats were treated throughout the study until they were euthanized, a period of approximately 38-57 days. The male rats were euthanized on Day 51. The female rats that delivered a litter, and their offspring, were euthanized on Days 4, 5, or 6 postpartum. Female rats that showed evidence of mating but did not deliver were euthanized on Day 23 of gestation. The study design included the additional endpoints of epididymal spermatozoan numbers and motility, and testicular spermatid head counts. Male rats that consumed diets containing 15.0 mg/g (1.50%) of the test substance exhibited reduced mean body weights and/or feed consumption values for the duration of the study. However, there were no adverse effects on fertility, histology of the testes and epididymis, or testicular and epididymal sperm counts. No treatment related effects were seen in male rats from the lower dose groups. There were no treatment related effects or histopathological alterations seen in the ovaries of female rats from any dose group and there were no biologically significant changes in their offspring. There were no toxicologically significant differences in the reproductive parameters evaluated including reproductive performance, fertility index, fecundity index, precoital interval, gestation duration, numbers of implants, number of corpora lutea, pre- and post implantation loss, pup survival, live and dead pups, male and female pups, pup body weight and body weight changes. Although the duration of the gestation phase was shorter ($p < 0.05$) for female rats from the mid dose group, there was no apparent effect on pup viability. Mean pup weight change and percent pup weight change from Days 0 to 4 were also significantly ($p < 0.05$) higher for pups from the low dose group when compared with the control group, but these changes were not considered biologically significant. /NOAEL (male, paternal) 888 mg/kg; NOAEL (female, maternal) 1124 mg/kg; NOAEL (offspring, F1) 888 mg/kg/. /LABORATORY ANIMALS: Developmental or Reproductive Toxicity/ Exposure levels: 0, 1.5, 4.5, and 15.0 mg/g of feed (0.15, 0.45, and 1.5%) Actual /oral/ dose levels: Approx. 92, 276, and 888 mg/kg (male), and 111, 351, and 1124 mg/kg (female Control group and treatment: Controls were exposed to basal diet. Duration of test: The study consisted of four phases: pre-mating (14 days); mating (1 to 14 days); pregnancy (21 to 23 days); and early lactation (4 to 6 days). The male rats were treated throughout the study, a period of 50 days. The female rats were treated throughout the study until they were euthanized, a period of approximately 38-57 days. The male rats were euthanized on Day 51. The female rats that delivered a litter, and their offspring, were euthanized on Days 4, 5, or 6 postpartum. Female rats that showed evidence of mating but did not deliver were euthanized on Day 23 of gestation. Remarks: The study design included the additional endpoints of epididymal spermatozoan numbers and motility, and testicular spermatid head counts. Maternal/Paternal toxicity NOAEL: 1.5%; or 888 mg/kg for males and 1124 mg/kg for females Repro./Develop. toxicity NOAEL: 1.5%; or 888 mg/kg for males and 1124 mg/kg for females Parental toxic responses: Male rats that consumed diets containing 15.0 mg/g (1.50%) of the test substance exhibited reduced mean body weights and/or feed consumption values for the duration of the study. However, there were no adverse effects on fertility, histology of the testes and epididymis, or testicular and epididymal sperm counts. No treatment-related effects were seen in male rats from the lower dose groups. There were no treatment-related effects or histopathological alterations seen in the ovaries of female rats from any dose group and there were no biologically significant changes in their offspring. Postnatal toxic responses: There were no toxicologically significant differences in the reproductive parameters evaluated including reproductive performance, fertility index, fecundity index, precoital interval, gestation duration, numbers of implants, number of corpora lutea, pre- and post-implantation loss, pup survival, live and dead pups, male and female pups, pup body weight and body weight changes. Although the duration of the gestation phase was shorter ($p = 0.05$) for female rats from the mid-dose group, there was no apparent effect on pup viability. Mean pup weight change and percent pup weight change from Days 0 to 4 were also significantly ($p = 0.05$) higher for pups from the low-dose group when compared with the control group, but these changes were not considered biologically significant. DMCD did not affect the

reproductive capacity of the adult animals in this study.
- STOT-single exposure: No data available.
- STOT-repeated exposure: /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Exposure levels: 0, 0.1, 0.3, and 1.0% in diet; Actual doses received: Males: 0, 81, 246, 871 mg/kg; Females: 0, 86, 259, 894 mg/kg. Repeated oral-dose toxicity /in/ Sprague-Dawley (CD(SD)BR) /rats (males and females 5/sex) for/ 4-weeks...Rats, were approximately 6-7 weeks in age and weighed 177 g (males) and 143 g (females) at study initiation. Animals were weighed and had detailed clinical observations recorded on Days 0, 4, 7, 14, 18, 22, and 29. Feed intake was assessed twice/week. At termination hematology (Hb conc., Hct, RBC count and morphology, WBC count and diff., and plt. Count) and clinical chemistries (AST, ALT, SDH, ALK, Creat., BUN, and gluc.) were conducted. At termination, animals underwent a gross examination with the following organs weighed: liver, spleen, kidneys, adrenals, testes, and thymus. Organs examined by histology included: trachea, lungs, heart, esophagus, stomach, small & large intestine, pancreas, liver, salivary glands, kidney, urinary bladder, pituitary, adrenals, thyroids, parathyroids, thymus, spleen, mesenteric lymph nodes, bone marrow, brain, testes, epididymis, accessory sex organs in males, fallopian tubes, uterus, vagina and ovaries. NOAEL (NOEL): 1.0%; [871 mg/kg (males) and 894 mg/kg (females)]. There were no mortalities or clinical signs related to exposure. There were no differences in body weights, feed consumption, hematology, clinical chemistries, and organ weights compared to controls. There were no gross or histological changes observed. CHDA induced essentially no toxicity following 4 weeks of exposure at a high exposure rate (1% of diet).
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Exposure levels: 0, 0.1, 0.3, and 1.0% in diet; Actual doses received: Males: 0, 81, 246, 871 mg/kg; Females: 0, 86, 259, 894 mg/kg. Repeated oral-dose toxicity /in/ Sprague-Dawley (CD(SD)BR) /rats (males and females 5/sex) for/ 4-weeks...Rats, were approximately 6-7 weeks in age and weighed 177 g (males) and 143 g (females) at study initiation. Animals were weighed and had detailed clinical observations recorded on Days 0, 4, 7, 14, 18, 22, and 29. Feed intake was assessed twice/week. At termination hematology (Hb conc., Hct, RBC count and morphology, WBC count and diff., and plt. Count) and clinical chemistries (AST, ALT, SDH, ALK, Creat., BUN, and gluc.) were conducted. At termination, animals underwent a gross examination with the following organs weighed: liver, spleen, kidneys, adrenals, testes, and thymus. Organs examined by histology included: trachea, lungs, heart, esophagus, stomach, small & large intestine, pancreas, liver, salivary glands, kidney, urinary bladder, pituitary, adrenals, thyroids, parathyroids, thymus, spleen, mesenteric lymph nodes, bone marrow, brain, testes, epididymis, accessory sex organs in males, fallopian tubes, uterus, vagina and ovaries. NOAEL (NOEL): 1.0%; [871 mg/kg (males) and 894 mg/kg (females)]. There were no mortalities or clinical signs related to exposure. There were no differences in body weights, feed consumption, hematology, clinical chemistries, and organ weights compared to controls. There were no gross or histological changes observed. CHDA induced essentially no toxicity following 4 weeks of exposure at a high exposure rate (1% of diet).

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.
- Recommended disposal method: Not available.
- Contaminated packaging: Dispose of as unused product unless cleaned and permitted by 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
- Regulatory listings (e.g., TSCA, REACH, DSL, EINECS/ELINCS, etc.): Not available.
- GHS classification: Not available.
- Hazard statements / precautionary statements: Not available.
15.2 Chemical safety assessment
- No data available.

SECTION 16: Other information

SECTION 16: Other information
- Product name: (1S,4S)-DIMETHYL CYCLOHEXANE-1,4-DICARBOXYLATE
- Catalog No.: CS-MM-43860
- CAS No.: 3399-21-1
- 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, but no warranty is expressed or implied. Users are responsible for determining suitability for their particular use and for compliance with applicable regulations.

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