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

Catalogue Number	CS-T-00302
Product Name	Acetoin
CAS No.	513-86-0
Category	Impurity
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
H226	Not available
H228	Not available
H315	Causes skin irritation.

H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Precautionary Statement(s)

Code	Statement
P210	Not available
P233	Not available
P240	Not available
P241	Not available
P242	Not available
P243	Not available
P264	Wash hands thoroughly after handling.
P264+P265	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P303+P361+P353	Not available
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if presen
P305+P354+P338	Not available
P317	Not available
P321	Specific treatment (see … on this label).
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
P403+P235	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 : Acetoin
CAS Number : 513-86-0

Molecular Formula : Not available
Molecular Weight : Not available
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. Seek medical attention if symptoms persist.
- 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. Remove contaminated clothing and wash before reuse. 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
- Specific hazards: Not available.
- Hazardous combustion 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.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Avoid breathing vapors/mist and 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, surface water, or soil.

6.3 Methods and material for containment and cleaning up
- Contain spill. Absorb with inert material (e.g., sand, earth, vermiculite) and place in a suitable, labeled container for disposal.
- Clean spill area with water and detergent where appropriate.

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 accordance with good industrial hygiene and safety practice.
- Avoid breathing vapors/mist. Avoid contact with skin and eyes.
- 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. Specific incompatibilities: Not available.
- Protect from physical damage.

7.3 Specific end use(s)
- Laboratory/research use. Not available for other specific uses.

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: Provide adequate general and/or local exhaust ventilation to control airborne levels.
- Personal protective equipment (PPE):
- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves (material not available). Wear protective clothing as appropriate.
- Respiratory protection: If ventilation is inadequate, use an appropriate NIOSH/EN-approved respirator (type not available).
- Hygiene measures: Wash hands after handling. Do not eat, drink, or smoke when using this product.
- Environmental exposure controls: Avoid release to the environment.

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
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, sparks, open flames, and other ignition sources: Not available.
- Other conditions: Not available.

10.5 Incompatible materials
- Not available.

10.6 Hazardous decomposition products
- Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Diacetyl and acetoin are endogenous in humans; mean fasting blood concentrations of approximately 100 ug acetoin per 100 mL blood have been reported. In rats, small (unspecified) amounts of a 30% acetoin solution were injected intraperitoneally until loss of righting reflex or respiratory failure; acetoin intoxication resembled ethyl-alcohol intoxication. With loss of righting reflex, acetoin ranged from 227 to 251 mg percent (average 235 mg). Upon respiratory failure, acetoin concentrations ranged from 742 to 770 mg percent (average 754 mg). The author concludes that acetoin is 1.4 times more intoxicating than ethyl-alcohol.
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: Acetoin (at </=4500 mg/plate) showed some mutagenicity in Salmonella typhimurium strains TA100 and TA104; as mutation frequencies were low and positive results were always accompanied by negative results, the overall conclusion was that this group of substances does not induce gene mutation in bacteria in vitro.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: In rats given acetoin in drinking water for 13 weeks at 0, 750, 3000, or 12,000 ppm, at 12,000 ppm body weight gain was reduced (associated with reduced food and water intake), liver weight increased, and slight anemia was reported; NOEL was 3000 ppm. In groups of 15 male and 15 female CFE rats given acetoin in drinking-water at 0, 750, 3000, or 12,000 mg/kg (equivalent to 0, 85, 330, or 1300 mg/kg bw/day) for 13 weeks, no animals died and condition/appearance were normal; at the high dose, male body weights decreased significantly from week 5, relative liver weight was statistically significantly greater (males at weeks 2, 6, and 13; females after 13 weeks), and hematology at 13 weeks showed a small (4-8%) statistically significant decrease in hemoglobin concentration and erythrocyte counts in each sex without a decrease in hematocrit; urinalysis, blood chemistry, and histopathology revealed no adverse effects. The NOEL was 3000 ppm, equivalent to 330 mg/kg bw/day.
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- In rats given acetoin in drinking-water for 13 weeks at 0, 750, 3000, or 12,000 mg/kg (equivalent to 0, 85, 330, or 1300 mg/kg bw/day), males at the high dose showed decreased body weights from week 5; relative liver weight increased (males at weeks 2, 6, and 13; females after 13 weeks); hematology at 13 weeks showed a small (4-8%) statistically significant decrease in hemoglobin concentration and erythrocyte counts in each sex without a decrease in hematocrit; no deaths occurred and condition/appearance were normal.

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.
- Contaminated packaging: Dispose of as unused product.

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, SARA, California Prop 65): Not available.

15.2 Chemical safety assessment
- No data available.

SECTION 16: Other information

SECTION 16: Other information

- Product name: Acetoin
- CAS No.: 513-86-0
- Catalog No.: CS-T-00302
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

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