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

| | |
|---|---|
| **Catalogue Number** | CS-MM-56541 |
| **Product Name** | Succinonitrile |
| **CAS No.** | 110-61-2 |
| **Category** | Fine Chemicals |
| **Synonyms** | Butanedinitrile<br>1,2-Dicyanoethane<br>Ethylene Cyanide<br>Ethylene Dicyanide |
| **Brand** | Clearsynth Labs Ltd. |
| **Identified uses** | Laboratory Chemicals |
| **Uses advised against** | Not available |
| **Company** | Clearsynth Labs Ltd.<br>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)
Acute toxicity (Category 4)

### 2.2 Label Elements

**Signal Word:** Warning

**Hazard Statement(s)**

| Code | Statement |
|---|---|

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H311 | Not available |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | Not available |
| H400 | Not available |
| H410 | Not available |

**Precautionary Statement(s)**

| Code | Statement |
|---|---|
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| 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. |
| P301+P317 | 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 |
| P316 | Not available |
| P319 | Get medical help if you feel unwell. |
| 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. |
| P361+P364 | Not available |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |

| | |
|---|---|
| P391 | Not available |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulatio |

## SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Succinonitrile
CAS Number : 110-61-2
Molecular Formula : C4H4N2
Molecular Weight : 80.09
Parent Chemical : .
Synonyms : Butanedinitrile
1,2-Dicyanoethane
Ethylene Cyanide
Ethylene Dicyanide
Concentration : Not available

## SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.
Inhalation: Move person to fresh air. If breathing is difficult, seek medical attention.
Skin contact: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Seek 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. Seek medical attention.
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. 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 (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
May emit toxic fumes under fire conditions. Hazardous combustion products: Not available.

5.3 Advice for firefighters
Wear self-contained breathing apparatus (SCBA) 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. Ensure adequate ventilation. Wear appropriate personal protective equipment.

6.2 Environmental precautions
Avoid release to the environment. Prevent entry into drains, sewers, or waterways.

6.3 Methods and material for containment and cleaning up
Contain spill. Collect spilled material using non-sparking tools and place in a suitable, labeled container for disposal. Clean contaminated area with appropriate method. Avoid generating dust.

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 contact with skin, eyes, and clothing. Avoid breathing dust/vapors. Use with adequate ventilation. Keep away from sources of ignition.

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

7.3 Specific end use(s)
Fine chemical / laboratory use. 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 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 (material selection dependent on use conditions). Protective clothing as appropriate.
- Respiratory protection: If ventilation is inadequate, use appropriate respiratory protection.
- Hygiene measures: Wash hands 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 |
| n) Loss on Drying | No data available |
| o) Relative Density | No data available |

| Property | Value |
|---|---|
| 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, flames, sparks, and other ignition sources. 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: 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) LD50: 450 mg/kg (Oral, Rat) (T29)
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: 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) /CASE REPORTS/ A 53 yr old male with polyarthritis and chronic bronchitis had been treated for 3 weeks with anti-catarrhal drugs, vitamins, and a daily intramuscular injection of 200 mg succinonitrile. Two hours after the last injection, the patient began vomiting and showed signs of psychomotor agitation and mental confusion accompanied by cold sweating. He was admitted to a hospital with convulsions and mental disorientation. The patient died 2 hours after he was hospitalized during a convulsion. Autopsy showed pronounced visceral congestion and cerebral and pulmonary edema. Histological examination showed a massive and vacuolar hepatic degeneration and a significant nephrosis of the tubules. Because of the odor of bitter almonds when the skull was opened, a chemical analysis for cyanide compounds was conducted. Cyanide concentrations of 0.265 to 1.500 mg/100 mL, reported as potassium-cyanide, were found in the liver, brain, kidney, lungs, and urine. No evidence of cyanide was found in the blood or gastric contents. An ampule of the pharmaceutical product containing the succinonitrile was analyzed. No trace of cyanide was found. .../It was concluded/ that death was due to cyanide poisoning, the cyanide having accumulated in the body as a result of a metabolic disorder when succinonitrile was administered.
- Aspiration hazard: No data available.

Likely routes of exposure
- 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)

Symptoms related to the physical, chemical and toxicological characteristics
- Potential symptoms of overexposure are irritation of eyes, skin, respiratory system... .

## 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
Product: Dispose of contents/container in accordance with local/regional/national/international regulations. Do not discharge to drains.
Contaminated packaging: Dispose of as unused product. Ensure containers are empty and properly labeled for disposal or recycling where permitted.

## 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
Not available.

15.2 Chemical safety assessment
Not available.

## SECTION 16: Other information

SECTION 16: Other information

Product name: Succinonitrile
CAS No.: 110-61-2
Catalog No.: CS-MM-56541
Supplier: Clearsynth Labs Ltd., Mumbai, India
Emergency phone: +91-22-245045900

Synonyms: Butanedinitrile; 1,2-Dicyanoethane; Ethylene Cyanide; Ethylene Dicyanide

Revision date: 2026-03-16

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