ALADDIN SCIENTIFIC CORPORATION
14078 Meridian Parkway, Riverside, CA. 92518

# SAFETY DATA SHEET

Version: v1
Revision Date: 2024-10-18
Print Date: 2024-10-18

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

### 1.1 Product identifiers

| | |
|---|---|
| Product name | : Hexamethylene diisocyanate |
| Product Number | : H106723 |
| Brand | : aladdin |
| CAS-No. | : 822-06-0 |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| Identified uses | : Laboratory chemicals,Manufacture of substances. |

### 1.3 Company

| | |
|---|---|
| Company | : ALADDIN SCIENTIFIC CORPORATION |
| Address | : 14078 Meridian Parkway, |
| Riverside, CA. 92518 | |
| Telephone | : +1 (833) 552-7181 |
| Fax | : no data available |

### 1.4 Emergency telephone number

| | |
|---|---|
| CHEMTREC®, Inside the USA | : 1-800-424-9300 |
| CHEMTREC®, Outside the USA | : |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 1), H330
Skin corrosion/irritation (Category 2), H315
Serious eye damage/eye irritation (Category 2A), H319
Respiratory sensitization (Category 1), H334
Skin sensitization (Category 1), H317
Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation,H335

### 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

| | |
|---|---|
| Hazard statement(s) | |
| H302 | Harmful if swallowed |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |
| H330 | Fatal if inhaled |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled |
| H335 | May cause respiratory irritation |
| Precautionary statement(s) | |
| P260 | Do not breathe dust/fume/gas/mist/vapors/spray. |
| P264 | Wash hands [and ...] thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P284 | [In case of inadequate ventilation] Wear respiratory protection. |
| P302+P352 | IF ON SKIN: wash with plenty of water. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. |
| P333+P313 | IF SKIN irritation or rash occurs: Get medical advice/attention. |
| P337+P313 | IF eye irritation persists: Get medical advice/attention. |
| P342+P311 | IF experiencing respiratory symptoms: Call a POISON CENTER/doctor/... |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |
| P501 | Dispose of contents/container to an approved waste disposal plant. |
| P301+P312+P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth. |
| P304+P340+P310 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

## SECTION 3: Composition/information on ingredients

## 3.1 Substances

| | | |
|---|---|---|
| Synonyms | : | 1,6-Diisocyanatohexane |
| Formula | : | C8H12N2O2 |
| Molecular weight | : | 168.19 |
| CAS No. | : | 822-06-0 |
| EC-NO. | : | 212-485-8 |

| Component | Classification | Concentration |
|---|---|---|

| Component | Classification | Concentration |
|---|---|---|
| **Hexamethylene diisocyanate** | | |
| | Acute toxicity Category 4; Acute toxicity Category 1; Skin corrosion/irritation Category 2; Serious eye damage/eye irritation Category 2A; Respiratory sensitization Category 1; Skin sensitization Category 1; Specific target organ toxicity - single exposure Category 3; H302, H330, H315, H319, H334, H317, H335 | Moligand™, ≥99% |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

General advice
Show this material safety data sheet to the doctor in attendance.
If inhaled
Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.
In case of skin contact
Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.
In case of eye contact
Rinse with pure water for at least 15 minutes. Consult a doctor.
If swallowed
Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

no data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media
Use dry chemical, carbon dioxide or alcohol-resistant foam.
Unsuitable extinguishing media
no data available

### 5.2 Special hazards arising from the substance or mixture

no data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

no data available

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Operators should be specially trained and strictly abide by the operating procedures. Operation and disposal should be carried out in a place with local ventilation or general ventilation facilities. Avoid eye and skin contact and avoid breathing vapor. See Section 8 for personal protective measures. Keep away from fire and heat sources, and smoking is strictly prohibited in the workplace. Use explosion-proof ventilation systems and equipment. If canning is required, the flow rate should be controlled, and there should be a grounding device to prevent the accumulation of static electricity. Avoid contact with incompatible substances such as oxidizing agents (see section 10 for incompatible substances). When handling, it should be lightly loaded and unloaded to prevent damage to packaging and containers. Empty containers may be harmful residues. Wash hands after use and prohibit eating or drinking in the workplace. Equipped with the corresponding variety and quantity of fire fighting equipment and leakage emer

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, ventilated warehouse.Sensitive to humidity and heat, reacts with water. Soluble in ether, benzene, toluene, and acetone. Store at 2-8 ℃. Fill with argon for storage.

### 7.3 Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| a) Appearance | form: liquid color: Colorless to light yellow |
| b) Odour | no data available |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | -67°C |
| f) Initial boiling point and boiling range | 255°C |
| g) Flash point | 140°C |

| | |
|---|---|
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | no data available |
| k) Vapour pressure | no data available |
| l) Vapour density | no data available |
| m) Relative density | no data available |
| n) Water solubility | no data available |
| o) Partition coefficient: n-octanol/water | no data available |
| p) Auto-ignition temperature | no data available |
| q) Decomposition temperature | no data available |
| r) Viscosity | no data available |
| s) Explosive properties N | no data available |
| t) Oxidizing properties N | no data available |

### 9.2 Other safety information

no data available

## 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

can decompose violently in contact with: Water Release of: Carbon dioxide (CO2) Risk of explosion with: Alcohols with Bases Exothermic reaction with: Alcohols amides Amines Oxidizing agents Strong acids and strong bases mercaptans phenols

### 10.4 Conditions to avoid

Heat. Avoid moisture.

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male - 746 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - 0.124 mg/l - vapor
(OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 7,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit Result: Corrosive after 1 to 4 hours of exposure - 4 h (OECD Test Guideline 404)
Serious eye damage/eye irritation
Eyes - Rabbit Result: Causes serious eye damage. (OECD Test Guideline 405)
Respiratory or skin sensitisation
Maximization Test - Guinea pig Result: positive (OECD Test Guideline 406) Sensitisation test: - Guinea pig Result: positive
Germ cell mutagenicity
Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative Remarks: (ECHA) Test Type: Micronucleus test Species: Mouse Cell type: Bone marrow Application Route: inhalation (vapor) Method: OECD Test Guideline 474 Result: negative
Carcinogenicity
no data available
Reproductive toxicity
no data available
Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation. - Respiratory system
Specific target organ toxicity - repeated exposure
no data available
Aspiration hazard
no data available
Additional Information
RTECS: MO1740000
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis,pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

To the best of our knowledge, the chemical,physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to algae static test ErC50 - Desmodesmus subspicatus (green algae) - > 77.4 mg/l - 72 h (OECD Test

Guideline 201)

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d Result: 42 % - Not readily biodegradable. (OECD Test Guideline 301F)

## 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 Other adverse effects

no data available

## SECTION 13:

## 13.1 Disposal considerations

Product

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Dispose of as unused product.

## SECTION 14: Transport information

DOT (US)

| | | |
|---|---|---|
| UN number: 2281 | Packing group: II | Class: 6.1（8） |
| Proper shipping name: HEXAMETHYLENE DIISOCYANATE | Reportable Quantity(RQ): no data available | Poison Inhalation Hazard: no data available |
| Environmental Hazards: no | | |

IMDG

| | | |
|---|---|---|
| UN number: 2281 | Packing group: II | EMS-No: no data available |
| Proper shipping name: HEXAMETHYLENE DIISOCYANATE | | |

IATA

| | | |
|---|---|---|
| UN number: 2281 | Packing group: II | Class: 6.1（8） |
| Proper shipping name: HEXAMETHYLENE DIISOCYANATE | | |

## SECTION 15: Regulatory information

ALADDIN SCIENTIFIC CORPORATION
14078 Meridian Parkway, Riverside, CA. 92518

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

## SECTION 16: Other information

| | |
|---|---|
| **Prepared By** | Regulatory Affairs<br>ALADDIN SCIENTIFIC CORPORATION<br>Email: QualityAssurance@aladdinsci.com |
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| **Print Date** | 18-Oct-2024 |
| **Revision Summary** | SDS sections updated v1 |

Disclaimer

 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Aladdin Co. Ltd. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.