
1. Identification**1.1 GHS Product identifier****Product name** 1,3-dicyclohexylcarbodiimide**1.2 Other means of identification****Product number** HF011**Other names** N,N'-Dicyclohexylcarbodiimide**1.3 Recommended use of the chemical and restrictions on use****Identified uses** For industry use only.**Uses advised against** no data available**1.4 Supplier's details****Company** Acros PharmaTech Limited

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Address Pun,HongKong

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Telephone 86(519)85265509**2. Hazard identification****2.1 Classification of the substance or mixture**

Acute toxicity - Oral, Category 4

Acute toxicity - Dermal, Category 3

Serious eye damage, Category 1

Skin sensitization, Category 1

2.2 GHS label elements, including precautionary statements**Pictogram(s)****Signal word**

Danger

H302 Harmful if swallowed

Hazard statement(s)

H311 Toxic in contact with skin

H318 Causes serious eye damage

H317 May cause an allergic skin reaction

Precautionary statement(s)

P264 Wash ... thoroughly after handling.

Prevention

P270 Do not eat, drink or smoke when using this product.



P280 Wear protective gloves/protective clothing/eye protection/face protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should not be allowed out of the workplace.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P312 Call a POISON CENTER/doctor/...if you feel unwell.

P321 Specific treatment (see ... on this label).

Response

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor/...

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

Storage

P405 Store locked up.

Disposal

P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3. Composition/information on ingredients**3.1 Substances**

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
1,3-dicyclohexylcarbodiimide	1,3-dicyclohexylcarbodiimide	538-75-0	none	≥98%

4. First-aid measures**4.1 Description of necessary first-aid measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound may include skin irritation and sensitization, severe eye irritation, irritation of the mucous membranes and upper respiratory tract, and subsequent allergic reactions. It can cause severe destruction of tissue, depending on the intensity and duration of exposure. ACUTE/CHRONIC HAZARDS: This compound is highly toxic by inhalation. It is an irritant of the skin, mucous membranes and upper respiratory tract, and is a severe irritant of the eyes. It can be corrosive to tissues if exposure is in high concentrations or over extended periods of time. When heated to decomposition it emits toxic fumes of carbon monoxide, carbon dioxide, and NOx.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Irritating materials/

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher.

5.2 Specific hazards arising from the chemical

This chemical is probably combustible.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

8. Exposure controls/personal protection**8.1 Control parameters****Occupational Exposure limit values**

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

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

8.3 Individual protection measures, such as personal protective equipment (PPE)**Eye/face protection**

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	colorless solid
Colour	Crystalline mass
Odour	Heavy sweet odor
Melting point/ freezing point	188°C(lit.)
Boiling point or initial boiling point and boiling range	122-124°C/6mmHg(lit.)
Flammability	no data available
Lower and upper explosion limit / flammability limit	no data available
Flash point	113°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	In water: Reaction
Partition coefficient n-octanol/water (log value)	log Kow = 6.83 (est; value theoretical as compound reacts with

Vapour pressure	water)
Density and/or relative density	3.39X10 ⁻³ mm Hg at 25°C (est)
Relative vapour density	1.325
Particle characteristics	no data available

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

N,N'-DICYCLOHEXYLCARBODIIMIDE is an amine. This compound is incompatible with acids and oxidizing agents. It reacts with water.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits toxic vapors of /oxides of nitrogen/.

11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 400 mg/kg
- Inhalation: LC50 Rat inhalation 159 mg/cu m/6 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/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

no data available

Aspiration hazard

no data available

12. Ecological information**12.1 Toxicity**

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Dicyclohexylcarbodiimide, present at 100 mg/L, reached 0-1% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1).

12.3 Bioaccumulative potential

Dicyclohexylcarbodiimide BCF values of <0.2 to <2.2 were measured for carp (*Carprinus carpio*) exposed to 0.1 mg/L and 1 mg/L dicyclohexylcarbodiimide over a 6 week exposure period(1). According to a classification scheme(2), these BCF values suggests bioconcentration in aquatic organisms is low(SRC). Since dicyclohexylcarbodiimide reacts with water(3), bioconcentration in aquatic organisms is not expected to be an important fate process(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of dicyclohexylcarbodiimide can be estimated to be 3×10^4 (SRC). According to a classification scheme(2), this estimated Koc value suggests that dicyclohexylcarbodiimide is expected to have slight mobility in soil. Dicyclohexylcarbodiimide reacts with water(3); in moist soils, dicyclohexylcarbodiimide can react (hydrate) to form dicyclohexylurea which has an estimated Koc of about 100(1) indicating high mobility in soil(2).

12.5 Other adverse effects

no data available

13. Disposal considerations**13.1 Disposal methods****Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: UN2811 IMDG: UN2811 IATA: UN2811

14.2 UN Proper Shipping Name

ADR/RID: TOXIC SOLID, ORGANIC, N.O.S.

IMDG: TOXIC SOLID, ORGANIC, N.O.S.

IATA: TOXIC SOLID, ORGANIC, N.O.S.

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packing group, if applicable

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
1,3-dicyclohexylcarbodiimide	1,3-dicyclohexylcarbodiimide	538-75-0	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16. Other information

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

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- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
 - IMDG: International Maritime Dangerous Goods
 - IATA: International Air Transportation Association
 - TWA: Time Weighted Average
 - STEL: Short term exposure limit
 - LC50: Lethal Concentration 50%
 - LD50: Lethal Dose 50%
 - EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.