

# OTTO CHEMIE PVT LTD

201, 51-53 Maroo Bhavan, Kalbadevi, Mumbai – 400002, India. Tel : + 91 22 2207 0099 / 6638 2599

Email : [info@ottokemi.com](mailto:info@ottokemi.com), Web : [www.ottokemi.com](http://www.ottokemi.com)

ISO 9001: 2015

## MATERIAL SAFETY DATA SHEET

### 1. Identification

#### 1.1 GHS Product identifier

N,N'-Dicyclohexylcarbodiimide, 99%

Code D 1615

### 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

Hazard statement(s)

H302 Harmful if swallowed

H311 Toxic in contact with skin

H318 Causes serious eye damage

H317 May cause an allergic skin reaction

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

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.

Response

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).

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	100%

#### 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 NO<sub>x</sub>.

##### 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 water)
Vapour pressure	3.39X10 <sup>-3</sup> mm Hg at 25\°C (est)
Density and/or relative density	1.325
Relative vapour density	no data available
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  $3 \times 10^4$ (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.

### Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.