



# **N, N'-DICYCLOHEXYLCARBODIIMIDE**

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## **1. Product Identification**

**Synonyms:** Cyclohexanamine,N,N'-methanetetraylbis-; DCC

**CAS No.:** 538-75-0

**Molecular Weight:** 206.33

**Chemical Formula:** C<sub>13</sub>H<sub>22</sub>N<sub>2</sub>

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## **2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent
Hazardous		
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N, N'-Dicyclohexylcarbodiimide	538-75-0	95 - 100%
Yes		

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## **3. Hazards Identification**

### **Emergency Overview**

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**DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT.  
HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.  
MAY CAUSE ALLERGIC SKIN REACTION.**

### **Potential Health Effects**

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**Inhalation:**

Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

**Ingestion:**

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea.

**Skin Contact:**

Corrosive. Symptoms of redness, pain, and severe burn can occur. May be absorbed through the skin with possible systemic effects. May cause allergic skin reactions.

**Eye Contact:**

Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns.

**Chronic Exposure:**

No information found.

**Aggravation of Pre-existing Conditions:**

No information found.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

**Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

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## 7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

None established.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known,

use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Other Control Measures:**

There is insufficient data in the published literature to assign complete numerical SAF-T-DATA\* ratings and laboratory protective equipment for this product. Special precautions must be used in storage, use and handling. Protective equipment for laboratory bench use should be chosen using professional judgment based on the size and type of reaction or test to be conducted and the available ventilation, with overriding consideration to minimize contact with the chemical.

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## 9. Physical and Chemical Properties

**Appearance:** White crystals.

**Odor:** Heavy sweet odor.

**Solubility:** Insoluble in water.

**Specific Gravity:** No information found.

**pH:** No information found.

**% Volatiles by volume @ 21C (70F):** 0

**Boiling Point:** 122 - 124C (252 - 255F)

**Melting Point:** 34 - 35C (93 - 95F)

**Vapor Density (Air=1):** No information found.

**Vapor Pressure (mm Hg):** 0 @ 20C (68F)

**Evaporation Rate (BuAc=1):** 0

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Acids, oxidizers.

**Conditions to Avoid:**

Moisture, heat, flames, ignition sources and incompatibles.

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## 11. Toxicological Information

Murine local lymph node assay positive for skin sensitization potential. Investigated as a tumorigen.

-----\Cancer Lists\-----

Ingredient Category	---NTP Carcinogen---		IARC
	Known	Anticipated	
N,N'-Dicyclohexylcarbodiimide None (538-75-0)	No	No	

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

**Domestic (Land, D.O.T.)**

**Proper Shipping Name:** TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (N,N'-DICYCLOHEXYLCARBODIIMIDE)

**Hazard Class:** 6.1, 8

**UN/NA:** UN2928 Packing Group: II

**Information reported for product/size:** 100G

**International (Water, I.M.O.)**

**Proper Shipping Name:** TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (N,N'-DICYCLOHEXYLCARBODIIMIDE)

**Hazard Class:** 6.1, 8

**UN/NA:** UN2928 Packing Group: II

**Information reported for product/size:** 100G

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
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Ingredient TSCA EC Japan  
Australia  
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N,N'-Dicyclohexylcarbodiimide (538-75-0) Yes Yes Yes  
Yes

-----\Chemical Inventory Status - Part 2\-----  
-----  
Ingredient Korea --Canada--  
Phil. DSL NDSL  
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-----  
N,N'-Dicyclohexylcarbodiimide (538-75-0) Yes Yes No  
Yes

-----\Federal, State & International Regulations - Part 1\-----  
-----  
313----- -SARA 302- -----SARA  
Ingredient RQ TPQ List  
Chemical Catg.  
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-----  
N,N'-Dicyclohexylcarbodiimide (538-75-0) No No No  
No

-----\Federal, State & International Regulations - Part 2\-----  
-----  
TSCA- -RCRA- -  
Ingredient CERCLA 261.33 8(d)  
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-----  
N,N'-Dicyclohexylcarbodiimide (538-75-0) No No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No  
Reactivity: No (Pure / Solid)

**Australian Hazchem Code:** 2Z

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN REACTION.

**Label Precautions:**

Do not breathe dust. Do not get in eyes, on skin, or on clothing.

Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. In all cases get medical attention immediately.

**Product Use:** Laboratory Reagent.

**Revision Information:** No Changes.

**Disclaimer:**

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