### Section I. Chemical Product and Company Identification

**Chemical Name**: N,N'-Dicyclohexylcarbodiimide  
**Catalog Number**: D0436

**Synonym**: DCC  
**Chemical Formula**: \( \text{C}_{13}\text{H}_{22}\text{N}_{2} \)

**CAS Number**: 538-75-0  
**Supplier**: TCI America  
9211 N. Harborgate St.  
Portland OR  
1-800-423-8616

**Chemtrec®**  
(U.S.): (800) 424-9300  
(International): (703) 527-3887

### Section II. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Percent (%)</th>
<th>TLV/PEL</th>
<th>Toxicology Data</th>
</tr>
</thead>
</table>
| N,N'-Dicyclohexylcarbodiimide  
(for peptide synthesis) | 538-75-0 | Min. 98.0 (T) | Not available. | Not available. |

### Section III. Hazards Identification

**Acute Health Effects**: Corrosive to skin, eyes, and respiratory system. Liquid or spray mist may produce tissue damage, particularly in mucous membranes of the eyes, mouth and respiratory tract. Skin contact may produce burns. Eye contact can result in corneal damage or blindness. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Corrosive materials may cause serious injury if ingested. Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Skin contact may result in sensitization. Always cover all exposed skin with an impermeable layer and use proper eye protection. A OSHA/MSHA approved dust and vapor respirator is required when working with this material. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Chronic Health Effects**:  
CARCINOGENIC EFFECTS: Not available.  
MUTAGENIC EFFECTS: Not available.  
TERATOGENIC EFFECTS: Not available.  
DEVELOPMENTAL TOXICITY: Not available.

Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

### Section IV. First Aid Measures

**Eye Contact**: Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.

**Skin Contact**: If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

**Inhalation**: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

**Ingestion**: DO NOT induce vomiting. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged; a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.
### Section V. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Combustible.</th>
<th>Auto-Ignition</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Points</td>
<td>&gt;109°C (246.2°F)</td>
<td>Flammable Limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Combustion Products</td>
<td>These products are toxic carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Hazards</td>
<td>No specific information is available regarding the flammability of this compound in the presence of various materials.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Explosion Hazards**: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No additional information is available regarding the risks of explosion.

- **Fire Fighting Media and Instructions**
  - SMALL FIRE: Use DRY chemicals, CO₂, water spray or foam.
  - LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.

### Section VI. Accidental Release Measures

- **Spill Cleanup Instructions**
  - Corrosive solid. Toxic solid. Procedure for decontamination of spill site:
    - Because of the hazardous nature of DCC and the corrosive nature of the clean-up reagents, it is recommended the following protective equipment be used: self-contained breathing apparatus, rubber gloves, suit, and boots. Carefully pour a sufficient quantity of acetic acid (10%-20%) or hydrochloric acid (5%) on the spill. Allow to stand several hours. Scrape off crystallized N,N-Dicyclohexylurea into a container and hold for waste disposal. Wash down spill site with a sufficient quantity of acetic acid (10%-20%) or hydrochloric acid (5%) followed by water rinse.
    - Stop leak if without risk. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

### Section VII. Handling and Storage

#### Handling and Storage Information
- CORROSIVE. TOXIC. MOISTURE SENSITIVE. Handle with caution and minimize exposure. Keep container dry. Keep away from heat and sources of ignition. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. DO NOT breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, acids, moisture.

### Section VIII. Exposure Controls/Personal Protection

- **Engineering Controls**
  - Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

- **Personal Protection**
  - Face shield. Lab coat. Vapor and dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

- **Exposure Limits**
  - Not available.

### Section IX. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical state @ 20°C</th>
<th>White crystalline solid-liquid.</th>
<th>Solubility</th>
<th>Insoluble in cold water, hot water.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>206.33</td>
<td>Partition Coefficient</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>122-124°C @ 6mmHg</td>
<td>Vapor Pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>34-35°C</td>
<td>Vapor Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>Not available.</td>
<td>Volatility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Taste</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

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*Continued on Next Page*
Section X. Stability and Reactivity Data

Stability
This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability
Moisture sensitive. Avoid excessive heat and light.

Incompatibilities
Reactive with oxidizing agents, acids, moisture.

Section XI. Toxicological Information

RTECS Number
FF2160000

Routes of Exposure
Eye contact. Inhalation. Ingestion. Skin contact.

Toxicity Data

Chronic Toxic Effects
Carcinogenic Effects: Not available.
Mutagenic Effects: Not available.
Teratogenic Effects: Not available.
Developmental Toxicity: Not available.
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Section XII. Ecological Information

Ecotoxicity
Not available.

Environmental Fate
Not available.

Section XIII. Disposal Considerations

Waste Disposal
Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of this substance.

Section XIV. Transport Information

DOT Classification
DOT CLASS 6.1: Toxic material.
DOT CLASS 8: Corrosive solid.

PIN Number
UN2928

Proper Shipping Name
Toxic solid, corrosive, organic, n.o.s.

Packing Group (PG)
II

DOT Pictograms

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)
This compound is ON the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada)
WHMIS CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).
WHMIS CLASS E: Corrosive solid.

EINECS Number (EEC)
208-704-1

EEC Risk Statements

Emergency phone number (800) 424-9300
<table>
<thead>
<tr>
<th><strong>Section XVI. Other Information</strong></th>
</tr>
</thead>
</table>

**Version 1.0**  
**Validated on 5/15/1998.**  
**Printed 12/9/2004.**

**Notice to Reader**

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