1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 101247

Product name: N-CARBAMYL-DL-ASPARTIC ACID

Synonyms: DL-Ureidosuccinic Acid

Supplier: MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH  44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits</th>
<th>OSHA Exposure Limits</th>
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<tbody>
<tr>
<td>N-CARBAMYL-DL-ASPARTIC ACID</td>
<td>923-37-5</td>
<td>90 - 100%</td>
<td>None</td>
<td>None</td>
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</table>

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause skin irritation and/or dermatitis

Principle routes of exposure: Skin
Inhalation: May cause irritation of respiratory tract
Ingestion: May be harmful if swallowed.
Skin contact: May cause allergic skin reaction
Eye contact: Avoid contact with eyes

Statements of hazard MAY CAUSE ALLERGIC SKIN REACTION.

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Inhalation: Move to fresh air. Call a physician immediately.
Skin contact: Rinse immediately with plenty of water and seek medical advice
Ingestion: Do not induce vomiting without medical advice.
Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Protection of first-aiders: No information available
Medical conditions aggravated by exposure: None known
5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam
Specific hazards: Burning produces irritant fumes.
Unusual hazards: None known
Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Specific methods:
Flash point: Water mist may be used to cool closed containers.
Autoignition temperature: Not determined
NFPA rating:
- NFPA Health: 1
- NFPA Flammability: 1
- NFPA Reactivity: 0

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment.
Environmental precautions: Prevent product from entering drains.
Methods for cleaning up: Sweep up and shovel into suitable containers for disposal.

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7. HANDLING AND STORAGE

Storage:
- +4°C

Handling: Use only in area provided with appropriate exhaust ventilation.
Safe handling advice: Wear personal protective equipment.
Incompatible products: Oxidising and spontaneously flammable products

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.
PERSONAL PROTECTIVE EQUIPMENT
Respiratory protection: Breathing apparatus only if aerosol or dust is formed.
Hand protection: PVC or other plastic material gloves
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.
Eye protection: Safety glasses with side-shields
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Powder
Formula: C5H8N2O5
Molecular weight: 176.1
Melting point/range: 175-187°C
Boiling point/range: No Data available at this time.
Density: No data available
Vapor pressure: No data available

Catalog Number: 101247
Product name: N-CARBAMYL-DL-ASPARTIC ACID
10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Polymerization: None under normal processing.
Hazardous decomposition products: Nitrogen oxides (NOx)/ammonia/CN-
Materials to avoid: Strong oxidising agents
Conditions to avoid: Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity
Components N-CARBAMYL-DL-ASPARTIC ACID
RTECS Number: Not Available
Selected LD50s and LC50s Not Determined

Chronic toxicity: Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

Local effects: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Specific effects: May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

Primary irritation: No data is available on the product itself.
Carcinogenic effects: No data is available on the product itself.
Mutagenic effects: No data is available on the product itself.
Reproductive toxicity: No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility: No data available
Bioaccumulation: No data available
Ecotoxicity effects: No data available
Aquatic toxicity: May cause long-term adverse effects in the aquatic environment.

Components

U.S. DOT - Appendix B - Marine Pollutans
N-CARBAMYL-DL-ASPARTIC ACID Not Listed

U.S. DOT - Appendix B - Severe Marine Pollutants
Not Listed

United Kingdom - The Red List:
Germany VCI (WGK) Not Listed

World Health Organization (WHO) - Drinking Water Data
N-CARBAMYL-DL-ASPARTIC ACID Not Listed

Ecotoxicity - Fish Species Data
Ecotoxicity - Freshwater Algae Data Not Listed

Ecotoxicity - Microtox Data
Not Listed

Ecotoxicity - Water Flea Data
Not Listed

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13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging: Do not re-use empty containers

14. TRANSPORT INFORMATION

UN/Id No: Not regulated

DOT:

Proper shipping name: Not Regulated

Components U.S. DOT - Appendix A Table 1 - Reportable Quantities

N-CARBAMYL-DL-ASPARTIC ACID Not Listed

TDG (Canada):

WHMIS hazard class: Non-controlled

IMDG/IMO

IMDG - Hazard Classifications Not Applicable

Components U.S. DOT - Appendix B - Marine Pollutants U.S. DOT - Appendix B - Severe Marine Pollutants

N-CARBAMYL-DL-ASPARTIC ACID Not Listed Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

N-CARBAMYL-DL-ASPARTIC ACID

Inventory - United States TSCA - Sect. 8(b) Not Listed

Canada DSL Inventory List - Not Listed

EU EINECS List - 213-096-6

Catalog Number: 101247 Product name: N-CARBAMYL-DL-ASPARTIC ACID
U.S. regulations:

Components

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<th>Massachusetts Right to Know List:</th>
<th>New Jersey Right to Know List:</th>
<th>Pennsylvania Right to Know List:</th>
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<th>SARA 313 Emission reporting/Toxic Release of Chemicals</th>
<th>NTP:</th>
<th>IARC:</th>
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SARA 313 Notification:
The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:
The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

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End of Safety Data Sheet