SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

CASMATE* DCA

Synonyms: Dicapryl Adipate, Hexanedioic Acid, Bis (1-Methylheptyl) Ester, Diisooctyl Adipate (INCI)

Chemical Abstracts Registry No: 108-63-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Not provided.

1.3. Details of the supplier of the safety data sheet

Vertellus LLC
201 North Illinois Street, Suite 1800
Indianapolis, Indiana 46204 USA
1-336-292-1781

e-mail Address: sds@vertellus.com

1.4. Emergency telephone number

Vertellus: 1-336-292-1781
CHEMTREC (USA): +1-800-424-9300 (collect calls accepted)
CHEMTREC (International): +1-703-527-3887 (collect calls accepted)
NRCC (China): +86 532 83889090

SECTION 2: Hazards identification


Not Classified as Hazardous

2.2. Label elements

Signal Word: Not required.

Hazard Precautions: Not Classified as Hazardous

Prevention Precautionary Statements: Note: These precautionary statements are not prescribed by directive 1272/2008 as this product is not classified as hazardous under this directive. Wash hands thoroughly after handling with soap and water. Wear protective gloves, protective clothing, eye protection and face protection. If swallowed, in eyes, on skin or inhaled call a poison center or doctor/physician if you feel unwell. If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. Take off contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed.

First Aid Precautionary Statements: Not required.

2.3. Other hazards

Other Hazards: Not applicable.

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SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration (weight %)</th>
<th>EC Number</th>
<th>CLP Inventory/ Annex VI</th>
<th>EU CLP Classification (1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dicapryl Adipate</td>
<td>108-63-4</td>
<td>~ 100</td>
<td>203-601-8</td>
<td>Not listed.</td>
<td>Non-Hazardous</td>
</tr>
</tbody>
</table>

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable).

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician.

Eye Contact: Immediately flush the eyes with plenty of water for at least 15 minutes. Call a physician.

Inhalation: Remove from exposure. If not breathing, give artificial respiration and call a physician.

Ingestion: Do not give anything by mouth to an unconscious person. If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Acute: Not expected to be irritating to skin or eyes. Not toxic by oral, dermal or inhalation routes. Not a sensitizer.

Delayed Effects: None known.

4.3. Indication of any immediate medical attention and special treatment needed

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Water fog, Alcohol foam, Carbon dioxide, Dry chemical

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: As with other organic materials, combustion will produce carbon monoxide and carbon dioxide.

Potential for Dust Explosion: not available

Special Flammability Hazards: Not applicable.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Firefighters should wear self-contained breathing apparatus and full protective equipment.
SAFETY DATA SHEET

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: See Section 8 for personal protective equipment recommendations. Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers and waterways.

6.3. Methods and material for containment and cleaning up

For large spills, the area may require diking to contain the spill. For small spills, use suitable absorbent material and collect for later disposal.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards: Not applicable.

Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.

Special Handling Equipment: Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations: Store in a cool place in original container and protect from sunlight

Dangerous Incompatibility Reactions: None Known

Incompatibilities with Materials of Construction: None known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Exposure Limit:</td>
<td>Not established</td>
</tr>
<tr>
<td>Air Monitoring Method:</td>
<td>Not required</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

Other Engineering Controls: All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.

Personal Protective Equipment: Chemical goggles, and impervious clothing, gloves and boots should be considered if extensive splashing is likely.


Thermal Hazards: Not applicable.

Environmental Exposure Controls: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance, State &amp; Odor (ambient temperature):</td>
<td>Colorless liquid with a mild odor.</td>
</tr>
<tr>
<td>Molecular Formula:</td>
<td>C22H42O4</td>
</tr>
<tr>
<td>Molecular Weight:</td>
<td>370.58</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>&lt;0.020 (n-Butyl acetate = 1)</td>
</tr>
<tr>
<td>Specific Gravity or Density:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor Density (air = 1):</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>211 - 216°C @ 4 MM HG</td>
</tr>
<tr>
<td>Freezing / Melting Point:</td>
<td>-32 °C-32 °C</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>&lt; 0.1% @ 25°C</td>
</tr>
<tr>
<td>Octanol / Water Coefficient:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Autoignition Temperature:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point and Method:</td>
<td>405°F 193°C COC</td>
</tr>
<tr>
<td>Flammable Limits:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive Properties:</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Oxidizing Properties:</td>
<td>Not an oxidizer.</td>
</tr>
</tbody>
</table>

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9.2. Other information
Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity
Not classified as dangerously reactive.

10.2. Chemical stability
Stable

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur

10.4. Conditions to avoid
Avoid contact with water, amines, strong bases, alcohols and copper alloys.

10.5. Incompatible materials
None Known

10.6. Hazardous decomposition products
Thermal decomposition, may release the flammable and toxic vapor mixture comprising cyanide, pyridine, ammonia, and oxides of nitrogen, and carbon, as well as hydrogen chloride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Oral LD₅₀: Oral LD50 (rat) > 58 g/kg Dicapryl Adipate

Acute Dermal LD₅₀: No data available.

Acute Inhalation LC₅₀: No data available.

Skin Irritation: Non-irritating to skin.

Eye Irritation: Non-irritating to eyes.

Skin Sensitization: No data available.

Mutagenicity: No data available.

Reproductive / Developmental Toxicity: No data available.

Carcinogenicity: No data available.

Target Organs: No data available.

Aspiration Hazard: Not likely to be an aspiration hazard.

Primary Route(s) of Exposure: Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.

Most important symptoms and effects, both acute and delayed
Not expected to be irritating to skin or eyes. Not toxic by oral, dermal or inhalation routes. Not a sensitizer. Delayed Effects: None known.

Additive or Synergistic effects: None known.

SECTION 12: Ecological information

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12.1. Toxicity
No data available.

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
No data available

12.6. Other adverse effects
No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: Non-Hazardous
Waste Classification: (per US regulations) The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal: NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number Not applicable
14.2. UN proper shipping name Chemicals, n.o.s. (Dicapryl Adipate)
14.3. Transport hazard class(es) Not applicable
14.4. Packing group Not applicable
14.5. Environmental hazards Not applicable
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemical Inventory Lists: Status:
USA TSCA: Listed
Canada(DSL/NDSL): DSL
Korea: KE-18682 Listed
China: 15774 Listed
Taiwan: Listed

EINECS: 203-601-8
Japan: (2)-861
Australia: Listed
Philippines: Not listed.
New Zealand: Listed

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German Water Hazard Classification: No data available.

SARA 313: Not listed.
Reportable Quantities: Not applicable.
State Regulations: Not applicable.
Other Regulatory Listings: INCI Name: DIISOOCTYL ADIPATE

HMIS IV: HEALTH 1 FLAMMABILITY 1 PHYSICAL HAZARD 0

15.2. Chemical safety assessment
A chemical safety assessment is not required as this substance is not classified as hazardous.

SECTION 16: Other information

Classification Method: Weight of evidence
Legend of Abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EINECS = European Inventory of Existing Commercial Chemical Substances.
ELINCS = European List of Notified Chemical Substances.
EU = European Union.
GHS = Globally Harmonized System.
LC = Lethal Concentration.
LD = Lethal Dose.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicology Program.
OSHA = Occupational Safety and Health Administration.
PEL = Permissible Exposure Limit.
RQ = Reportable Quantity.
TLV = Threshold Limit Value.
WHMIS = Workplace Hazardous Materials Information System.

Important Note: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

Revision Date: 23 Oct 2017
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Email: SDS@Vertellus.com
Revision Details: Revised in all sections to GHS format.