SAFETY DATA SHEET

1. Identification

Product identifier: CAPRYLIC ACID (NATURAL)

Other means of identification:
- BRI Product Code: 881
- FEMA number: 2799
- Synonyms: Octanoic acid * OCTANOIC ACID

Recommended use: flavors and fragrances

For Manufacturing Use Only

Recommended restrictions: Not for use in Tobacco or Nicotine delivery device applications and/or products.

Manufacturer/Importer/Supplier/Distributor information:

Manufacturer:
- Company name: Bedoukian Research
- Address: 21 Finance Drive, Danbury, CT 06810, United States
- Telephone: 1-203-830-4000
- Website: www.bedoukian.com
- E-mail: customerservice@bedoukian.com
- Contact person: Joseph Bania
- Emergency phone number:
  - Chemtrec (North America): 1-800-424-9300
  - Chemtrec (International): 1-703-527-3887

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards:
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard: Category 3
- Hazardous to the aquatic environment, long-term hazard: Category 3

OSHA defined hazards: Not classified.

Label elements:

Signal word: Danger

Hazard statement:
Causes severe skin burns and eye damage. Causes serious eye damage. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement:

Prevention:
Do not breathe mist or vapor. Wash thoroughly after handling. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response:
If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse.

Storage:
Store locked up.

Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)  
None known.

Supplemental information  
None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPRYLIC ACID (NATURAL)</td>
<td>Octanoic acid OCTANOIC ACID</td>
<td>124-07-2</td>
<td>100</td>
</tr>
</tbody>
</table>

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation  
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact  
Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

Eye contact  
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

Ingestion  
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed  
Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed  
Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

General information  
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media  
Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media  
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical  
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters  
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions  
Move containers from fire area if you can do so without risk.

Specific methods  
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards  
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures  
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up  
Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions  
Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.
7. Handling and storage

Precautions for safe handling
Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store locked up. Store in original tightly closed container. Keep tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Recommended Packaging: Glass or Plastic.

8. Exposure controls/personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles) and a face shield.

Hand protection
Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other
Wear appropriate chemical resistant clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state
Liquid.

Color
light yellow

Odor
fatty, oil odor.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
60.8 - 62.6 °F (16 - 17 °C) / 61.7 °F (16.5 °C)

Initial boiling point and boiling range
462.2 °F (239 °C) Literature reference.

Flash point
230 °F (110 °C) Pensky-Martens or Grabner Miniflash

Evaporation rate
Not available.

Flammability (solid, gas)
Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)
Not available.

Flammability limit - upper (%)
Not available.

Explosive limit - lower (%)
Not available.

Explosive limit - upper (%)
Not available.

Vapor pressure
0.0313 mmHg at 20°C; US EPA, 2014. Estimation Programs Interface Suite™ for Microsoft® Windows, v 4.11. US EPA, Washington, DC, USA.

Vapor density
5 Relative to air; air = 1

Relative density
Not available.

Solubility(ies)

Solubility (water)
Not available.

Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

Other information
- Density 0.907 - 0.911 g/cm³
- Dynamic viscosity 5.74 mPa.s
- Flammability class Combustible IIIB estimated
- Kinematic viscosity 6.329 mm²/s estimated
- Molecular formula C₈H₁₆O₂
- Molecular weight 144.17
- Specific gravity 0.907 - 0.911 at 25°C

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions Hazardous polymerization does not occur.
Conditions to avoid Contact with incompatible materials.
Incompatible materials Strong oxidizing agents.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information
Information on likely routes of exposure
- Inhalation May cause irritation to the respiratory system.
- Skin contact Causes severe skin burns.
- Eye contact Causes serious eye damage.
- Ingestion Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
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</thead>
<tbody>
<tr>
<td>CAPRYLIC ACID (NATURAL) (CAS 124-07-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td>Rabbit</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
</tbody>
</table>

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Irritation Corrosion - Skin
- 1 % Patch test, Vehicle Petrolatum.
- Result: No irritation observed.
- Species: Human
- Organ: Skin
- Notes: RIFM

Irritation Corrosion - Skin
100 % OECD 404, Full thickness necrosis observed at
observation point 48 hours in all animals. Not fully reversible
within 14 days.
Result: Corrosive.
Species: Rabbit
Organ: Skin
Notes: ECHA

Serious eye damage/eye irritation
Causes serious eye damage.

Respiratory or skin sensitization
Respiratory sensitization
Not a respiratory sensitizer.

Skin sensitization
This product is not expected to cause skin sensitization.

Skin sensitization
1 % Patch test, Vehicle Petrolatum.
Result: Not sensitizing.
Species: Human
Organ: Skin
Notes: RIFM
10 % Maximization test, Intradermal induction 10% test
material, Topical induction and challenge 10% test material.
Vehicle Ethanol. Result for similar material Lauric acid.
Result: Not sensitizing.
Species: Guinea pig
Organ: Skin
Notes: RIFM
50 % LLNA, Vehicle Acetone:Olive oil (4:1).
Result: Not sensitizing.
Species: Mouse
Organ: Skin
Notes: RIFM

Germ cell mutagenicity
No data available to indicate product or any components present at greater than 0.1% are
mutagenic or genotoxic.

Germ cell mutagenicity: Ames test
< 3333 µg/plate Preincubation, Strains TA 98, TA 100, TA
1535, TA 97 and/or TA 1537 with and without metabolic
activation. Vehicle DMSO.
Result: Not mutagenic.
Species: Salmonella typhimurium
Notes: RIFM
< 50000 µg/plate Plate incorporation, Strains TA 98, TA 100,
TA 1535, TA 1537 and TA 1538 with and without metabolic
activation. Vehicle DMSO.
Result: Not mutagenic.
Species: Salmonella typhimurium
Notes: RIFM

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Not classified.

Specific target organ toxicity - repeated exposure
Not classified.

Aspiration hazard
Not an aspiration hazard.

12. Ecological information
Ecotoxicity
Harmful to aquatic life with long lasting effects.
Persistence and degradability
No data is available on the degradability of this product.
Bioaccumulative potential
Mobility in soil: No data available.

Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations: Dispose in accordance with all applicable regulations.

Hazardous waste code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging: Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number: UN3265
UN proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Octanoic acid)
Transport hazard class(es):
- Class: 8
- Subsidiary risk: -
- Label(s): 8
Packing group: III
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
Special provisions: IB3, T7, TP1, TP28
Packaging exceptions: 154
Packaging non bulk: 203
Packaging bulk: 241

IATA

UN number: UN3265
UN proper shipping name: Corrosive liquid, acidic, organic, n.o.s. (Octanoic acid)
Transport hazard class(es):
- Class: 8
- Subsidiary risk: -
Packing group: III
Environmental hazards: No.
ERG Code: 8L
Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
Other information:
- Passenger and cargo aircraft: Allowed.
- Cargo aircraft only: Allowed.

IMDG

UN number: UN3265
UN proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Octanoic acid)
Transport hazard class(es):
- Class: 8
- Subsidiary risk: -
- Packing group: III
- Environmental hazards:
- Marine pollutant: No.
- EmS: F-A, S-B

Material name: CAPRYLIC ACID (NATURAL)
881 Version #: 01 Issue date: 05-18-2015
Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.

DOT

IATA; IMDG

15. Regulatory information

**US federal regulations**
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

- **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
  Not regulated.
- **CERCLA Hazardous Substance List (40 CFR 302.4)**
  Not listed.
- **SARA 304 Emergency release notification**
  Not regulated.
  Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

- **Hazard categories**
  Immediate Hazard - Yes
  Delayed Hazard - No
  Fire Hazard - No
  Pressure Hazard - No
  Reactivity Hazard - No

- **SARA 302 Extremely hazardous substance**
  Not listed.

- **SARA 311/312 Hazardous chemical**
  Yes

- **SARA 313 (TRI reporting)**
  Not regulated.

**Other federal regulations**

- **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
  Not regulated.

- **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
  Not regulated.

- **Safe Drinking Water Act (SDWA)**
  Not regulated.
US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law
Not listed.

US. Rhode Island RTK
Not regulated.

US. California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
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<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: 05-18-2015
Version #: 01

Disclaimer
BRI cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.