SAFETY DATA SHEET

1. Identification

Product identifier: CAPROIC ACID (NATURAL) FCC

Other means of identification:
- BRI Product Code: 880
- FEMA number: 2559
- Synonyms: Hexanoic acid

Recommended use: flavors and fragrances
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 1C
- Serious eye damage/eye irritation: Category 1

Environmental hazards: Hazardous to the aquatic environment, acute 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.

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. Wear protective gloves, clothing, eye and 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>Substances</th>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAPROIC ACID (NATURAL) FCC</td>
<td>Hexanoic acid</td>
<td>142-62-1</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. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

**Ingestion**
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. 

Most important symptoms/effects, acute and delayed

Indication of immediate medical attention and special treatment needed

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**
Prevent product from entering drains.

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

Skin protection:

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

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: colorless to pale yellow

Odor: mild fatty odor.

Odor threshold: Not available.

pH: Not available.

Melting point/freezing point: 26.6 °F (-3 °C) / 25.88 °F (-3.4 °C)

Initial boiling point and boiling range: 401.36 °F (205.2 °C) Literature reference.

Flash point: 220 °F (104 °C) Closed Cup

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

Vapor density: 4 Relative to air; air = 1

Relative density: Not available.

Solubility(ies):

Solubility (water): Not available.

Auto-ignition temperature  716 °F (380 °C)

Decomposition temperature  Not available.

Viscosity  Not available.

Other information
- Density  0.923 - 0.927 g/cm³
- Dynamic viscosity  3.23 mPa.s
- Dynamic viscosity temperature  68 °F (20 °C)
- Explosive properties  Not explosive.
- Flammability class  Combustible IIIB estimated
- Kinematic viscosity  3.499 mm²/s estimated
- Molecular formula  C₆H₁₂O₂
- Molecular weight  116.16
- Oxidizing properties  Not oxidizing.
- Specific gravity  0.923 - 0.927 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>
</tr>
</thead>
<tbody>
<tr>
<td>CAPROIC ACID (NATURAL) FCC (CAS 142-62-1)</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>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg Result for similar materials Nonanoic, Decanoic and Decanedioic acids.</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>3000 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
100 % OECD 404, Necrosis and scar tissue; not reversible in 21 days.
Result: Corrosive.
Species: Rabbit
Organ: Skin
Notes: ECHA

Serious eye damage/eye irritation

Irritation Corrosion - Eye
50 % OECD 437, Vehicle Sesame oil.
Result: Corrosive.
Species: Cattle
Organ: In vitro
Notes: ECHA

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

Germ cell mutagenicity
Germ cell mutagenicity: Ames test
< 1000 µg/plate Preincubation, Strains TA 97 and TA 102 with and without metabolic activation. Vehicle DMSO.
Result: Not mutagenic.
Species: Salmonella typhimurium
Notes: RIFM
< 75000 µg/plate Plate incorporation, Strains TA 98, TA 100, TA 1535, TA 1537 and TA 1538 with and without metabolic activation.
Result: Not mutagenic.
Species: Salmonella typhimurium
Notes: RIFM

Carcinogenicity
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity
Not listed.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.
US. National Toxicology Program (NTP) Report on Carcinogens
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.
CAPROIC ACID (NATURAL) FCC (CAS 142-62-1)

<table>
<thead>
<tr>
<th>Test Results</th>
<th>Species</th>
<th>Aquatic</th>
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<tbody>
<tr>
<td></td>
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<td>Acute</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fish</td>
</tr>
<tr>
<td>LC50</td>
<td>Fathead minnow (Pimephales promelas)</td>
<td>88 mg/l, 96 hours</td>
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<tr>
<td></td>
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<td>Chronic</td>
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<tr>
<td></td>
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<td>Crustacea</td>
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<tr>
<td>LC50</td>
<td>Daphnia</td>
<td>52.2 mg/l, 21 days Result for similar material Heptanoic acid.</td>
</tr>
</tbody>
</table>

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

### Persistence and degradability
No data is available on the degradability of this product.

### Bioaccumulative potential

**Partition coefficient n-octanol / water (log Kow)**


**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**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN2829</th>
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<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Caproic acid</td>
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<tr>
<td>Transport hazard class(es)</td>
<td>8</td>
</tr>
<tr>
<td>Class</td>
<td>8</td>
</tr>
<tr>
<td>Subsidiary risk</td>
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</tr>
<tr>
<td>Label(s)</td>
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<tr>
<td>Packing group</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
<tr>
<td>Special provisions</td>
<td>IB3, T4, TP1</td>
</tr>
<tr>
<td>Packaging exceptions</td>
<td>154</td>
</tr>
<tr>
<td>Packaging non bulk</td>
<td>203</td>
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<tr>
<td>Packaging bulk</td>
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**IATA**

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN2829</th>
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<tbody>
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<td>Class</td>
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<tr>
<td>Subsidiary risk</td>
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</tr>
<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>Environmental hazards</td>
<td>No.</td>
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<tr>
<td>ERG Code</td>
<td>8L</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>
Other information
Passenger and cargo aircraft
Cargo aircraft only
Allowed with restrictions.

IMDG
UN number
UN2829
UN proper shipping name
CAPROIC ACID
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
Not established.

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.

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

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
CAPROIC ACID (NATURAL) FCC (CAS 142-62-1)

US. New Jersey Worker and Community Right-to-Know Act
CAPROIC ACID (NATURAL) FCC (CAS 142-62-1)

US. Pennsylvania Worker and Community Right-to-Know Law
CAPROIC ACID (NATURAL) FCC (CAS 142-62-1)

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 (NDSSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<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>
<td>Yes</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>

* "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 05-27-2015
Revision date 01-08-2016
Version # 04

Disclaimer
Bedoukian Research 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.
Revision information

- Hazard(s) identification: Hazard statement
- Hazard(s) identification: Prevention
- Exposure controls/personal protection: PPE Symbols
- Physical and chemical properties: Oxidizing properties
- Physical and chemical properties: Explosive properties
- Toxicological Information: Toxicological Data
- Toxicological information: Acute toxicity
- Toxicological information: Skin contact
- Ecological Information: Ecotoxicity
- Ecological information: Ecotoxicity
- Ecological information: Persistence / degradability
- Regulatory Information: Risk Phrases - Labeling
- Other information, including date of preparation or last revision: Further information
- GHS: Classification

Material name: CAPROIC ACID (NATURAL) FCC
Version #: 04  Revision date: 01-08-2016  Issue date: 05-27-2015

SDS US
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