1. IDENTIFICATION

Product Description: HEPTYL BUTYRATE

CAS # 5870-93-9

FEMA Number 2549

Other means of identification
Vigon Item # 501799

Recommended use Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.

Recommended restrictions For Manufacturing Use Only

Company 24 Hour Emergency Response Information
Vigon International, Inc. INFOTRAC (ACCT# 78928);
127 Airport Road 1-800-535-5053 WITHIN THE U.S.A.
E. Stroudsburg, PA 18301 1-352-323-3500 OUTSIDE THE U.S.A.

For information call: 570-476-6300

Web Site: www.vigon.com

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

<table>
<thead>
<tr>
<th>Company name</th>
<th>Vigon International, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>127 Airport Road</td>
</tr>
<tr>
<td></td>
<td>E. Stroudsburg, PA 18301</td>
</tr>
<tr>
<td>United States</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Telephone</th>
<th>For information call:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>570-476-6300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Website</th>
<th><a href="http://www.vigon.com">www.vigon.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td><a href="mailto:regulatory@vigon.com">regulatory@vigon.com</a></td>
</tr>
</tbody>
</table>

Emergency phone number INFOTRAC (ACCT# 78928);

<table>
<thead>
<tr>
<th>1-800-535-5053</th>
<th>WITHIN THE U.S.A.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-352-323-3500</td>
<td>OUTSIDE THE U.S.A.</td>
</tr>
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</table>

2. HAZARD(S) IDENTIFICATION

Physical hazards Flammable liquids Category 4

Health hazards Acute toxicity, oral Category 5

Environmental hazards Not classified.

Label elements

<table>
<thead>
<tr>
<th>Hazard symbol</th>
<th>None.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal word</td>
<td>Warning</td>
</tr>
<tr>
<td>Hazard statement</td>
<td>Combustible liquid. May be harmful if swallowed.</td>
</tr>
<tr>
<td>Precautionary statement</td>
<td></td>
</tr>
</tbody>
</table>

Prevention Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear protective gloves/protective clothing/eye protection/face protection.

Response Call a POISON CENTER/doctor if you feel unwell. In case of fire: Use appropriate media to extinguish.
SAFETY DATA SHEET

501799 HEPTYL BUTYRATE

Revision Date: 05-11-2020
Version # 04
Print Date: 05-11-2020

Storage
Store in a well-ventilated place.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
100% of the substance consists of component(s) of unknown acute inhalation toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the substance consists of component(s) of unknown long-term hazards to the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEPTYL BUTYRATE</td>
<td>heptyl butanoate</td>
<td>5870-93-9</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>N-heptyl butyrate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact
Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion
Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed
Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed
Not available.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

Use water spray to cool unopened containers.

Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Collect and dispose of spillage as indicated in section 13 of the SDS.

Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

The product is immiscible with water and will spread on the water surface.

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). 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.

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

Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

This substance has no PEL, TLV, or other recommended exposure limit.

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

Use explosion-proof ventilation equipment to stay below exposure limits. Adequate ventilation should be provided so that exposure limits are not exceeded.
Individual protection measures, such as personal protective equipment

Eye/face protection
- Wear safety glasses with side shields (or goggles).

Skin protection
- Hand protection
  - Chemical resistant gloves.
- Other
  - Wear suitable protective clothing.

Respiratory protection
- Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.

Thermal hazards
- Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
- When using do not smoke. Keep away from food and drink. 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
- Refer to Spec Sheet

Physical state
- Liquid.

Form
- Liquid.

Color
- Refer to Spec Sheet

Odor
- Characteristic.

Odor threshold
- Not available.

pH
- Not available.

Melting point/freezing point
- -70.6 °F (-57 °C)

Initial boiling point and boiling range
- 437 - 438.8 °F (225 - 226 °C)

Flash point
- 195.0 °F (90.6 °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
- 0.09 mm Hg at 25 °C

Vapor density
- 6.4

Relative density
- Not available.

Solubility(ies)
- Solubility (water)
  - Insoluble

Partition coefficient
- (n-octanol/water)
  - Not available.

Auto-ignition temperature
- Not available.
Decomposition temperature: Not available.
Viscosity: Not available.
Other information:
- Explosive properties: Not explosive.
- Flammability class: Combustible IIIA estimated
- Molecular formula: C11H22O2
- Molecular weight: 186.3 g/mol
- 186.29 g/mol
- Oxidizing properties: Not oxidizing.
- Specific gravity: 0.88 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: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials: Strong oxidizing agents.
Hazardous decomposition products: No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure:
- Inhalation: Knowledge about health hazard is incomplete.
- Skin contact: Causes mild skin irritation.
- Eye contact: Knowledge about health hazard is incomplete. Causes mild eye irritation.
- Ingestion: May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on toxicological effects:
Acute toxicity: May be harmful if swallowed.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute HEPTYL BUTYRATE (CAS 5870-93-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>Rabbit</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Due to partial or complete lack of data the classification is not possible.
Due to partial or complete lack of data the classification is not possible.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**

No data is available on the degradability of this substance.

**Bioaccumulative potential**

No data available.

**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**

Do not discharge into drains, water courses or onto the ground. 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**

Not established.

**Waste from residues / unused products**

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.
SAFETY DATA SHEET

501799 HEPTYL BUTYRATE

14. TRANSPORT INFORMATION

ADN
Not regulated as dangerous goods.

ADR
Not regulated as dangerous goods.

RID
Not regulated as dangerous goods.

DOT

BULK
- UN number: NA1993
- Proper shipping name: COMBUSTIBLE LIQUID, N.O.S. (HEPTYL BUTYRATE)
- Hazard class: Combustible liq
- Packing group: III
- Environmental hazards:
  - Marine pollutant: No
- Packaging exceptions: 150
- Packaging bulk: 241
- Labels required: None

DOT

NON-BULK
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

15. REGULATORY INFORMATION

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

Toxic Substances Control Act (TSCA)
- 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)
- SARA 302 Extremely hazardous substance
  Not listed.
SARA 311/312 Hazardous chemical Yes
Classified hazard categories Flammable (gases, aerosols, liquids, or solids)
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.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date 11-30-2015
Revision date 05-11-2020
Version # 04
HMIS® ratings Health: 1
Flammability: 2
Physical hazard: 0

Disclaimer
Vigon International, Inc. 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. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, and disposal and should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Vigon International, Inc. has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its’ safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the safe handling, use, processing, storage, transportation, disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of Vigon’s knowledge as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own processes and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.
Revision information

- Physical & Chemical Properties: Multiple Properties
- Toxicological Information: Toxicological Data
- HazReg Data: International Inventories