# Product Specification

**Product Name:** ETHYL BUTYRATE NATURAL  
**Vigon Code:** 500132  
**CAS Number:** 105-54-4  
**FEMA Number:** 2427

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid Value</td>
<td>0.000 1.000</td>
</tr>
<tr>
<td>Purity %</td>
<td>98.00 100.00</td>
</tr>
<tr>
<td>Gas Chromatograph</td>
<td>PASSES TEST</td>
</tr>
<tr>
<td>Odor</td>
<td>POWERFUL, FRUITY, BANANA-LIKE ODOR.</td>
</tr>
<tr>
<td>Refractive Index (@20c)</td>
<td>1.3910 1.3940</td>
</tr>
<tr>
<td>Specific Gravity (@25c)</td>
<td>0.8700 0.8770</td>
</tr>
<tr>
<td>Color/appearance</td>
<td>COLORLESS LIQUID.</td>
</tr>
</tbody>
</table>

**Additional Product Information:**  
**Flash Point:** 75 °F  
**Shelf Life:** 36 Months  
**Storage Conditions:** Stable when stored in its original package, tightly sealed in a cool (46-90°F) and dry location out of direct heat and light.

**Effective Date:** September 11, 2012
1. IDENTIFICATION

Product Description: ETHYL BUTYRATE NATURAL
CAS # 105-54-4
FEMA Number 2427
Other means of identification
Vigon Item # 500132
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 Vigon International, Inc.
Address 127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
Company name Vigon International, Inc.
Address 127 Airport Road
E. Stroudsburg, PA 18301
United States
Telephone For information call: 570-476-6300
Website www.vigon.com
E-mail Not available.
Emergency phone number INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

2. HAZARD(S) IDENTIFICATION

Physical hazards Flammable liquids Category 3
Health hazards Acute toxicity, dermal Category 5
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Not classified.

Label elements
SAFETY DATA SHEET
500132 ETHYL BUTYRATE NATURAL

Signal word
Warning

Hazard statement
Flammable liquid and vapor. May be harmful in contact with skin. Causes skin irritation. Causes skin and eye irritation. Causes serious eye irritation. May cause respiratory irritation.

Precautionary statement
Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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. Call a POISON CENTER/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.

Storage
Keep cool. Store in a well-ventilated place. Keep container tightly closed. 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
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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL BUTYRATE</td>
<td>BUTYRIC ETHER ETHYL BUTANOATE ETHYL N-BUTYRATE N-ETHYL BUTYRATE</td>
<td>105-54-4</td>
<td>100</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.
500132 ETHYL BUTYRATE NATURAL

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**Version #:** 06  
**Print Date:** 07-17-2019  

**Most important symptoms/effects, acute and delayed**  
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

**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.

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**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.

**Fire fighting equipment/instructions**  
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.

**Specific methods**  
Use water spray to cool unopened containers.

**General fire hazards**  
Static charges generated by emptying package in or near flammable vapor may cause flash fire.

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**  
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.
Methods and materials for containment and cleaning up

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.

Environmental precautions

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.

7. HANDLING AND STORAGE

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

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

Biological limit values

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

Appropriate engineering controls

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. 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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td><strong>Refer to Spec Sheet</strong></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Color</td>
<td><strong>Refer to Spec Sheet</strong></td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-149.44 °F (-100.8 °C)</td>
</tr>
<tr>
<td>Initial boiling point and boiling</td>
<td>248 - 249.8 °F (120 - 121 °C)</td>
</tr>
<tr>
<td>range</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>75.0 °F (23.9 °C) Closed Cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>10 mm Hg at 59 °F</td>
</tr>
<tr>
<td>Vapor density</td>
<td>4</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>1.73</td>
</tr>
<tr>
<td>(n-octanol/water)</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>865 °F (462.78 °C)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>0.88 g/cm3 estimated at 20 °C</td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>0.71 mPa.s (59 °F (15 °C))</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Flammability class</td>
<td>Flammable IC estimated</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>0.809 mm²/s estimated</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

500132 ETHYL BUTYRATE NATURAL

Molecular formula  C6-H12-O2
Molecular weight  116.16 g/mol
Oxidizing properties  Not oxidizing.
Specific gravity  0.87 at 20 °C
Surface tension  24.5 mN/m (68 °F (20 °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  May cause irritation to the respiratory system.
Skin contact  May be harmful in contact with skin. Causes skin irritation.
Eye contact  Causes serious eye irritation.
Ingestion  Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity  In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. May be harmful in contact with skin.

Product  Species  Test Results

ETHYL BUTYRATE (CAS 105-54-4)

Acute
Dermal  Rabbit  > 2000 mg/kg
LD50

Skin corrosion/irritation  Causes skin irritation.
Skin - rabbit - Moderate skin irritation - 24 h

Serious eye damage/eye irritation  Causes serious eye irritation.

Respiratory or skin sensitization  Due to partial or complete lack of data the classification is not possible.
Respiratory sensitization
Skin sensitization  Due to partial or complete lack of data the classification is not possible.
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Germ cell mutagenicity
Due to partial or complete lack of data the classification is not possible.

Carcinogenicity
Due to partial or complete lack of data the classification is not possible.

- IARC Monographs. Overall Evaluation of Carcinogenicity
  Not listed.
  Not listed.
- US. National Toxicology Program (NTP) Report on Carcinogens
  Not listed.

Reproductive toxicity
Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
Due to partial or complete lack of data the classification is not possible.

Aspiration hazard
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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL BUTYRATE (CAS 105-54-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>LC50 Water flea (Daphnia magna)</td>
<td>755 mg/l, 24 hours</td>
</tr>
<tr>
<td>Fish</td>
<td>LC0 Carp (Leuciscus idus melanotus)</td>
<td>35 mg/kg, 48 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Carp (Leuciscus idus melanotus)</td>
<td>53 mg/l, 48 hours</td>
</tr>
</tbody>
</table>

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

Bioaccumulative potential
Partition coefficient n-octanol / water (log Kow)
1.73

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).
14. TRANSPORT INFORMATION

**ADN**
- UN number: 1180
- UN proper shipping name: ETHYL BUTYRATE
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packing group: III
- Environmental hazards: No
- Labels required: 3

**ADR**
- UN number: 1180
- UN proper shipping name: ETHYL BUTYRATE
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packing group: III
- Environmental hazards: No
- Labels required: 3

**RID**
- UN number: 1180
- UN proper shipping name: ETHYL BUTYRATE
- Transport hazard class(es): 3
- Subsidiary class(es): -
- Packing Group: III
- Environmental Hazards: No
- Labels required: 3
- Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

**DOT**

**BULK**
- UN number: 1180
- Proper shipping name: ETHYL BUTYRATE
- Hazard class: 3
- Packing group: III
- Environmental hazards: -
- Marine pollutant: No
- Packaging exceptions: 150
- Packaging bulk: 242
- Labels required: 3

**DOT**

**NON-BULK**
- UN number: 1180
- Proper shipping name: ETHYL BUTYRATE
- Hazard class: 3

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.
## 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.
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CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
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)
- Skin corrosion or irritation
- Serious eye damage or eye irritation
- Specific target organ toxicity (single or repeated exposure)
- Hazard not otherwise classified (HNOC)

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 05-19-2015
Revision date 07-17-2019
Version # 06
HMIS® ratings
- Health: 2
- Flammability: 3
- 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

This document has undergone significant changes and should be reviewed in its entirety.
The following product(s) Manufactured By VIGON INTERNATIONAL, INC are certified kosher with the listed restrictions.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Product Name</th>
<th>Status</th>
<th>Restriction</th>
<th>UKD#</th>
</tr>
</thead>
<tbody>
<tr>
<td>500132</td>
<td>ETHYL BUTYRATE NATURAL</td>
<td>Parve</td>
<td>Kof-K symbol required</td>
<td>KFFCJZUVE4N</td>
</tr>
</tbody>
</table>

To verify or for the most up to date certificate please go to www.koshercertificate.com

201 The Plaza, Teaneck, NJ 07666 | Phone 201.837.0500 | fax 201.837.0126
This is to certify that the following product(s) have been produced under the supervision of the Islamic Food and Nutrition Council of America (IFANCA). The production facility as well as component ingredients have been reviewed and approved. The product(s) are in compliance with the halal requirements under Islamic laws.

Date: November 15, 2019
Document #: 6718.12506.II194715

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Product Code</th>
<th>Halal-ID</th>
<th>Product Certificate #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL BUTYRATE NATURAL</td>
<td>500132</td>
<td>B79895</td>
<td>HC-19VIHP22</td>
</tr>
</tbody>
</table>

Company Name & Address: Vigon International, Inc. 127 Airport Road East Stroudsburg, Pennsylvania 18301 USA

Muhammad Munir Chaudry, Ph.D.
President

This Certificate is valid until January 31, 2021 and subject to renewal at that time.
Food Grade Certification

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132
FEMA #: 2427

Vigon International, Inc. certifies that the above flavor or ingredient is FDA/FEMA GRAS. We would like to assure you that we use only flavor ingredients that are listed as being generally recognized as safe (GRAS) on a reliable published industry association (FEMA) list and/or are approved for use in a regulation of the U.S. Food and Drug Administration. We hereby certify that this flavor or ingredient is safe for its intended use in food.

Vigon International, Inc. may terminate this certification at any time upon written notice in which this certification shall be null and void as to any material supplied after termination of the certification.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
US - Natural Status Certificate

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. certifies that the product listed above is declared natural and meets the criteria of Naturalness as defined in Section 101.22 (a) (3) of Title 21 of the United States Code of Federal Regulations.

Vigon International, Inc. certifies that the product meets the following criteria:

- Does not contain any artificial flavors
- Is not adulterated or misbranded according to Food and Drug laws

Vigon International, Inc. may terminate this certification at any time upon written notice, in which this certification shall be null and void as to any material supplied after termination of the certification.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
**Allergen/Sensitive Agents Identification Sheet**

**Product Name:** ETHYL BUTYRATE NATURAL

**Vigon Code:** 500132

* A check mark (✓) indicates the Allergen/Sensitive Agent is present. If blank it means that there is no Allergen/Sensitive present.

<table>
<thead>
<tr>
<th><strong>ALLERGEN/SENSITIVE AGENTS</strong></th>
<th>*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORN &amp; CORN PRODUCTS</strong></td>
<td></td>
</tr>
<tr>
<td>Includes modified starch, hydrolyzed protein, sweeteners, sugars, spice carriers</td>
<td></td>
</tr>
<tr>
<td><strong>EGG &amp; EGG PRODUCTS</strong></td>
<td></td>
</tr>
<tr>
<td>liquid and powders</td>
<td></td>
</tr>
<tr>
<td><strong>FISH</strong></td>
<td></td>
</tr>
<tr>
<td>Includes any and all species of fresh and salt water fish</td>
<td></td>
</tr>
<tr>
<td><strong>GARLIC</strong></td>
<td></td>
</tr>
<tr>
<td>Dehydrated, powdered, granules, and flakes</td>
<td></td>
</tr>
<tr>
<td><strong>GLUTEN</strong></td>
<td></td>
</tr>
<tr>
<td>Wheat, rye, barley, oats, flour, etc.</td>
<td></td>
</tr>
<tr>
<td><strong>MILK &amp; DAIRY PRODUCTS</strong></td>
<td></td>
</tr>
<tr>
<td>Includes whey, lactose, cheese, casein, spice carriers, milk, cream, etc.</td>
<td></td>
</tr>
<tr>
<td><strong>MONOSODIUM GLUTAMATE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>PEANUTS, PEANUT OIL &amp; PEANUT DERIVED ITEMS</strong></td>
<td></td>
</tr>
<tr>
<td>Peanut meal, flour &amp; ground nuts, szechwan sauce, mandelona nuts, etc.</td>
<td></td>
</tr>
<tr>
<td><strong>SESAME SEEDS &amp; SESAME OIL</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CRUSTACEANS</strong></td>
<td></td>
</tr>
<tr>
<td>Shrimp, lobster, rock lobster, crab, crayfish, and products made from them</td>
<td></td>
</tr>
<tr>
<td><strong>MOLLUSKS</strong></td>
<td></td>
</tr>
<tr>
<td>Clams, mussels, oysters, scallops, and products made from them</td>
<td></td>
</tr>
<tr>
<td><strong>SOY</strong></td>
<td></td>
</tr>
<tr>
<td>Includes soya powder, protein, oil, lecithin, tofu</td>
<td></td>
</tr>
<tr>
<td><strong>SULFITES</strong></td>
<td></td>
</tr>
<tr>
<td>Includes sulfur dioxide, sodium dithionite, chemicals that lists sulfite, etc.</td>
<td></td>
</tr>
<tr>
<td><strong>TREE NUTS</strong></td>
<td></td>
</tr>
<tr>
<td>Includes almonds, beechnuts, basil nuts, nutmeg, cashews, chestnuts, etc.</td>
<td></td>
</tr>
<tr>
<td><strong>WHEAT</strong></td>
<td></td>
</tr>
<tr>
<td>Includes hydrolyzed wheat protein, flour, gluten flour, starches</td>
<td></td>
</tr>
<tr>
<td><strong>MUSTARD &amp; MUSTARD OIL</strong></td>
<td></td>
</tr>
<tr>
<td><strong>LUPIN</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CELERY</strong></td>
<td></td>
</tr>
</tbody>
</table>

Vigon International, Inc. follows Good Manufacturing Practices and has implemented HACCP systems. Our personnel are trained on the proper handling of allergenic materials.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Organic Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. declares that the product listed above meets the requirements for nonagricultural (non-organic) substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic (specified ingredients or food group(s))" [7 CFR 205.605(a)(9)].

All of the flavor constituents in the natural flavor product named above meet the FDA definition of a natural flavor.

No synthetic solvents were used.

This natural flavor product, including any solvents, carriers, preservatives or other processing aids used or contained therein, was produced and handled without the use of excluded (GMO) methods.

Ionizing radiation as described in 21 CFR 179.26 was not used in the processing of this natural flavor product.

This natural flavor product was not derived from products using sewage sludge in their agricultural production.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
GMO Status Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. declares that the product listed above is not derived from or produced using genetically modified organisms or their derivatives.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

CAS #: 105-54-4  
ethyl butanoate  
100%

Vigon Regulatory Department  
Date of Issue: May 13, 2020
Irradiation and Sewage Sludge Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. declares that the product listed above has not been:

a) Exposed to Ionizing Radiation
b) Derived from Sewage Sludge
c) Treated with Ethyl Oxide

Vigon International, Inc. may terminate this statement at any time upon written notice in which this statement shall be null and void as to any material supplied after termination of the statement.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Heavy Metals and Pesticide Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. declares that, to the best of our knowledge and belief, all ingredients in the product listed above are listed as being generally recognized as safe (GRAS) by the Food and Drug administration (FDA) when used in accordance with the FDA's good manufacturing practices (GMP) and contain no residues of heavy metals and pesticides in excess of tolerances set by the FDA and the Environmental Protection Agency (EPA).

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Continuing Product Guarantee

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

In accordance with the regulations promulgated under the Federal Food, Drug, and Cosmetic Act, Vigon International, Inc. hereby provides continuing guarantee for the item listed above.

The article(s) comprising each shipment or other delivery hereafter made by Vigon International, Inc. is hereby guaranteed, as of the date of shipment or delivery, to be, on such date, not adulterated or misbranded within the meaning of the Federal Food, Drug, and Cosmetic Act, and not an article which may not, under the provisions of section 404, 505, or 512 of the act, be introduced into interstate commerce.

The guarantee herein given shall be a continuing guarantee and shall remain in full force and effect until revoked in writing by the undersigned. This guarantee shall not limit or preclude the operation and effect of any and all provisions of any agreement(s) under which the articles covered by this guarantee are sold, and the provisions of such agreement(s) shall govern in the event of any conflict or inconsistency herewith. Supplier's liability for breach of this guarantee shall in no event exceed the value of such of the articles of the supplier shipped to or on the order of Purchaser hereunder as may fail to comply with this guarantee.

This guarantee shall be void and of no effect in any instance where the particular use by Purchaser of any article to which this guarantee would otherwise apply is a use which is not in accordance with the requirements of the Federal Food, Drug and Cosmetic Act. Any and all prior guarantees and/or indemnity agreements heretofore given by supplier, are hereby revoked.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Dietary Preferences & Restrictions

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. certifies that the product listed above is suitable for consumption by:

<table>
<thead>
<tr>
<th>Dietary Preference</th>
<th>Suitable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegans</strong></td>
<td>✔️</td>
</tr>
<tr>
<td>Do not eat meat, poultry, fish/seafood, eggs, dairy products, honey</td>
<td>✔️</td>
</tr>
<tr>
<td><strong>Lacto-Vegetarians</strong></td>
<td>✔️</td>
</tr>
<tr>
<td>Do not eat meat, poultry, fish/seafood, eggs, but do eat dairy products</td>
<td>✔️</td>
</tr>
<tr>
<td><strong>Ovo-Vegetarians</strong></td>
<td>✔️</td>
</tr>
<tr>
<td>Do not eat meat, poultry, fish/seafood, dairy products, but do eat eggs</td>
<td>✔️</td>
</tr>
<tr>
<td><strong>Vegetarians</strong></td>
<td>✔️</td>
</tr>
<tr>
<td>Do not eat meat, poultry, fish/seafood, but do eat dairy products and eggs</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Animal Testing Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. is not in the practice of performing or commissioning animal testing on its finished products and actively evaluates the ingredients of its products through non-animal testing methods and through computational (predictive) toxicology programs. However, some ingredients used in our products have been subjected to animal testing by the academic community, government agencies, or within the chemical industry.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
Proposition 65 Statement

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Vigon International, Inc. certifies that the product above is not listed on the California's Safe Drinking Water and Toxic Enforcement Act of 1986, also known as Proposition 65.

Sincerely,

Amanda Moyer
Product Documentation Coordinator
Date of Issue: May 13, 2020
The USDA National Organic Program (NOP) allows the use of certain natural (non-synthetic) substances, including flavors, in products labeled as "Organic" or "Made with Organic... (specified ingredients or food groups)" providing they comply with provisions established in the USDA NOP (7 CFR Part 205).

The NOP defines Non-synthetic (natural) in 7 CFR 205.2: a substance that is derived from mineral, plant or animal matter and does not undergo a synthetic process as defined in section 6502 (21) of the Act (7 U.S.C. 6502(21)). Under the terms of the Act, "synthetic" means a substance that is formulated or manufactured by a chemical process or by a process that chemically changes a substance extracted from naturally occurring plant, animal or mineral sources, except that such term shall not apply to substances created by naturally occurring biological processes.

Non-synthetic Flavors authorized under the NOP, Section 205.605 (a)(9) must be from non-synthetic sources only and must not be produced using synthetic solvents, carrier systems or any artificial preservative.

In addition, Sections 205.105 (e)(f) respectively prohibit so-called "excluded" methods (GMOs) and ionizing radiation from being used to produce or during the handling of any ingredients or products under the NOP.

FDA Definition of Natural Flavors FDA 21 CFR Part 101.22(a)(3): "...natural flavor or natural flavoring means the essential oil, oleoresin, essence or extractive, protein hydrolysate, distillate, or any product of roasting, heating or enzymolysis, which contains the flavoring constituents derived from a spice, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, seafood, poultry, eggs, dairy products, or fermentation products thereof, whose significant function in food is flavoring rather than nutritional. Natural flavors include [but not exclusively] the natural essences or extractives obtained from plants listed in §§182.10, 182.20, 182.40, and 182.50 and part 184 of this chapter, and the substances listed in §172.510 of this chapter."

In order to approve the use of a natural flavor used in an "organic" or "made with" product, QAI requests the information below in order to determine compliance under the terms of the NOP. QAI may request additional information as needed.

Identification of Natural Flavor Product (Name/code): ETHYL BUTYRATE NATURAL/500132

Supplier Name and Address: Vigon International, Inc., 127 Airport Road East Stroudsburg, PA 18301 USA

Type of flavor (select one or more as necessary):

<table>
<thead>
<tr>
<th></th>
<th>Protein Hydrolysate</th>
<th></th>
<th>Extracts</th>
<th></th>
<th>Essential oil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compounded flavor</td>
<td></td>
<td>Oleoresin</td>
<td></td>
<td>Isolate</td>
</tr>
<tr>
<td></td>
<td>Distillate</td>
<td></td>
<td>Compounded WONF</td>
<td>N/A</td>
<td>Other</td>
</tr>
</tbody>
</table>

Natural Flavor Product

A. Flavor constituents

1. Do all of the flavor constituents in the natural flavor product named above meet the FDA definition of a natural flavor (see above)?
   □ Yes □ No □ X Yes

2. Natural flavors authorized for use in NOP "organic" or "made with organic" products, in addition, must not be produced using synthetic extraction solvents. Extraction may only use natural, non-petroleum based solvents. Is/are the natural flavor constituent(s) made using NOP-suitable extraction solvents?*
   □ Yes □ No □ X N/A, no extraction solvents used
> Please list any solvent(s) used in the production of this Natural Flavor Product:

*Allowed natural extraction solvents include water, natural ethanol, super-critical carbon dioxide, authentic essential oil, and natural vegetable oils. No hydrocarbon solvents, or chlorinated, or halogenated solvents may be used. Propane, hexane, and freon are examples of solvents that are prohibited.

B. Non-flavor constituents and other ingredients

Natural flavors authorized for use in NOP "organic" or "made with organic" products must not contain any synthetic carrier systems or any artificial preservatives, including but not limited to, propylene glycol, polyglycerol esters of fatty acids, mono- and di-glycerides, benzoic acid, polysorbate 80.

> Please list any carrier system(s) used in this Natural Flavor Product or attach an Ingredient Statement:

[X] N/A, no carrier system(s) used

> Please list any preservative(s) used in this Natural Flavor Product or attach an Ingredient Statement:

[X] N/A, no preservative(s) used

C. Genetically Modified Organism (GMO) products may not be used at any stage in the process of making natural flavor products for NOP goods. Excluded methods (= GMO use) include a variety of methods used to genetically modify organisms or influence their growth and development by means that are not possible under natural conditions or processes and are not considered compatible with organic production. Such methods include, but are not limited to, recombinant DNA technology (including gene deletion, gene doubling, introduction of a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology); therefore, GMO-plant extracts may not be used nor may natural flavors be the product of GMO-yeast fermentation.

> This natural flavor product, including any solvents, carriers, preservatives or other processing aids used or contained therein, was produced and handled without the use of excluded (GMO) methods?

[X] Yes  [ ] No

D. Ionizing Radiation is prohibited for all uses involving food preservation, pest control and pathogen control in NOP products. Other radiation uses, including food inspection, are permitted providing such use meets applicable FDA regulations, which establish limitations applicable to all (organic and non-organic) food products.

> Ionizing radiation as described in 21 CFR 179.26 was not used in the processing of this natural flavor product?

[X] Yes  [ ] No

Please sign this questionnaire below

Pursuant to 7CFR §205.605(a)(9) and §205.105(e)(f), I, on behalf of the supplier, hereby attest that the information provided in this form is accurate and truthful to the best of my knowledge.

Company Name: Vigon International Inc.

Printed Name: Amanda Moyer  Title: Product Documentation Coordinator

Signature: Amanda Moyer  Date: 05/13/20
Nanomaterials

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

We hereby confirm, to the best of our knowledge, that the above referenced product has not been formulated with engineered nanomaterials.

"Engineered nanomaterial" means any intentionally produced material that has one or more dimensions of the order of 100 nm or less or that is composed of discrete functional parts, either internally or at the surface, many of which have one or more dimensions of the order of 100 nm or less, including structures, agglomerates or aggregates, which may have a size above the order of 100 nm but retain properties that are characteristic of the nanoscale.

Vigon Regulatory Department
Date of Issue: May 13, 2020
Vigon International, Inc. products are manufactured wholly from synthetic, natural or manufactured materials and do not contain any raw materials produced from or substances derived of animal origin. Moreover, these products do not contain, and are not derived from, specified risk material as defined in Commission Decision 97/534/EC or mechanically recovered meat obtained from the vertebral column of bovine, ovine or caprine animals.

The manufacturing process does not use any ingredient of animal origin nor do our products come in contact with animal products during storage and transportation.

We further declare that our products are Dioxin Free.

Therefore, to the best of our knowledge the product listed above are free from Transmissible Spongiform Encephalopathy (TSE) and Bovine Spongiform Encephalopathy (BSE).

Vigon International, Inc. may terminate this statement at any time upon written notice, in which this statement shall be null and void as to any material supplied after termination of the statement.

Vigon Regulatory Department
Date of Issue: May 13, 2020
Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Botanical Species: Sugarcane

Part of plant used: Cane

Country of origin for the plant: China

Vigon Regulatory Department
Date of Issue: May 13, 2020
### International Inventories

**Product Name:** ETHYL BUTYRATE NATURAL  
**Vigon Code:** 500132

<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>China</td>
<td>Inventory of Existing Chemical Substances in Chine (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>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>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances and Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Vigon Regulatory Department  
Date of Issue: May 13, 2020
Solvent

Product Name: ETHYL BUTYRATE NATURAL

Vigon Code: 500132

Based on our knowledge of our production process, raw materials and equipments used we do not expect solvents to be present.

Vigon Regulatory Department
Date of Issue: May 13, 2020