1 Identification

- Product identifier
- Trade name: Myrcene natural
- Product number: 1159
- CAS Number: 123-35-3
- EC number: 204-622-5
- Application of the substance / the mixture: Food flavorings

Details of the supplier of the safety data sheet

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. Advanced Biotech makes NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the Advanced Biotech product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of an Advanced Biotech product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Advanced Biotech product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

Manufacturer/Supplier:
Advanced Biotech
10 Taft Road
Totowa, NJ 07512 USA

Information department:
Product Safety Department
productsafety@adv-bio.com

Emergency telephone number:
1(800)535-5053 (Info Trac)
1(352)323-3500 (International)

During normal business hours: 1(973)339-6242

2 Hazard(s) identification

- Classification of the substance or mixture

GHS02 Flame
Flam. Liq. 3 H226 Flammable liquid and vapor.

GHS08 Health hazard
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

GHS07
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· Label elements: Harmful in contact with skin or if inhaled.

(Continued on page 2)
GHS label elements
Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
The product is classified and labeled according to the Globally Harmonized System (GHS).

Signal word Danger

Hazard-determining components of labeling:
Myrcene
d-limonene

Hazard statements
H226 Flammable liquid and vapor.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H304 May be fatal if swallowed and enters airways.

Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P301+P310 If swallowed: Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P331 Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
NFPA ratings (scale 0 - 4)

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS-ratings (scale 0 - 4)

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  123-35-3 Myrcene
- Identification number(s)
- EC number: 204-622-5
- Description: Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>CAS: 123-35-3</th>
<th>Myrcene</th>
<th>85-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fl. Liq. 3, H226; Asp. Tox. 1, H304; Skin Irrit. 2, H315</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>d-limonene</th>
<th>85-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fl. Liq. 3, H226; Skin Irrit. 2, H315; Skin Sens. 1, H317</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation: Supply fresh air and be sure to call for a doctor.
  In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: If symptoms persist consult doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed
      No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed
      No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture: None further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.
- Additional information
  Cool endangered receptacles with water spray.
  Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Trade name: Myrcene natural

Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Protective Action Criteria for Chemicals

- PAC-1:
  d-limonene 15 ppm

- PAC-2:
  d-limonene 67 ppm

- PAC-3:
  d-limonene 170 ppm

7 Handling and storage

Handling:
- Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Prevent formation of aerosols.
- Information about protection against explosions and fires:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities

Storage:
- Requirements to be met by storerooms and receptacles:
  No special requirements.
  Please refer to product specification for product storage requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters

- Components with limit values that require monitoring at the workplace:
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- Additional information: The lists that were valid during the creation were used as a basis.

- Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
Trade name: Myrcene natural

· **Breathing equipment:**
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**
  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

  Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
  The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**
  Tightly sealed goggles

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### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
</tr>
<tr>
<td>Appearance:</td>
</tr>
<tr>
<td>Form: Liquid</td>
</tr>
<tr>
<td>Color: According to product specification</td>
</tr>
<tr>
<td>Odor: According to product specification</td>
</tr>
<tr>
<td>Odor threshold: Not determined.</td>
</tr>
<tr>
<td>pH-value: Not determined.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: 167 °C (332.6 °F)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash point:</th>
</tr>
</thead>
<tbody>
<tr>
<td>39 °C (102.2 °F)</td>
</tr>
</tbody>
</table>

| Flammability (solid, gaseous): Not applicable.       |
| Decomposition temperature: Not determined.           |

| Auto igniting: Product is not selfigniting.          |
| Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |

(Continued on page 6)
10 Stability and reactivity

- **Reactivity**
  No further relevant information available.

- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:**
    No decomposition if used according to specifications.

- **Possibility of hazardous reactions**
  No dangerous reactions known.

- **Conditions to avoid**
  No further relevant information available.

- **Incompatible materials:**
  No further relevant information available.

- **Hazardous decomposition products:**
  No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**

  **ATE (Acute Toxicity Estimate)**
  - Oral | LD50 | 220,000-440,000 mg/kg (rat)
  - d-limonene
  - Oral | LD50 | 4,400 mg/kg (rat)

- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.

- **Sensitization:** Sensitization possible through skin contact.
Safety Data Sheet
acc. to OSHA HCS

Printing date 02/11/2019
Reviewed on 02/08/2019

Trade name: Myrcene natural

(Continuation of page 6)

· Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
  · Irritant

· Carcinogenic categories

  · IARC (International Agency for Research on Cancer)
    d-limonene 3
  · NTP (National Toxicology Program)
    None of the ingredients is listed.
  · OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is listed.

12 Ecological information

· Toxicity
  · Aquatic toxicity: No further relevant information available.
  · Persistence and degradability: No further relevant information available.
  · Behavior in environmental systems:
    · Bioaccumulative potential: No further relevant information available.
    · Mobility in soil: No further relevant information available.
  · Additional ecological information:
    · General notes:
      Water hazard class 1 (Self-assessment): slightly hazardous for water
      Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.
  · Other adverse effects: No further relevant information available.

13 Disposal considerations

· Waste treatment methods
  · Recommendation:
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:
  · Recommendation: Disposal must be made according to official regulations.

14 Transport information

· UN-Number
  UN2319

· DOT, ADR, IMDG, IATA
  Terpene hydrocarbons, n.o.s.

· UN proper shipping name
  2319 TERPENE HYDROCARBONS, N.O.S.
**Trade name: Myrcene natural**

<table>
<thead>
<tr>
<th>IMDG, IATA</th>
<th>TERPENE HYDROCARBONS, N.O.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>DOT, IMDG, IATA</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>3 Flammable liquids</td>
</tr>
<tr>
<td><strong>Label</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>3 (F1) Flammable liquids</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>DOT, ADR, IMDG, IATA III</td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
<td>Marine pollutant: No</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Warning: Flammable liquids</td>
</tr>
<tr>
<td><strong>EMS Number:</strong></td>
<td>F-E, S-D</td>
</tr>
<tr>
<td><strong>Stowage Category</strong></td>
<td>A</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
<td>DOT</td>
</tr>
<tr>
<td><strong>Quantity limitations</strong></td>
<td>On passenger aircraft/rail: 60 L</td>
</tr>
<tr>
<td></td>
<td>On cargo aircraft only: 220 L</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>Code: E1</td>
</tr>
<tr>
<td><strong>Excepted quantities (EQ)</strong></td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>Limited quantities (LQ) 5L</td>
</tr>
<tr>
<td><strong>Excepted quantities (EQ)</strong></td>
<td>Code: E1</td>
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<td>Maximum net quantity per inner packaging: 30 ml</td>
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<td></td>
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</tr>
<tr>
<td><strong>UN &quot;Model Regulation&quot;:</strong></td>
<td>UN 2319 TERPENE HYDROCARBONS, N.O.S., 3, III</td>
</tr>
</tbody>
</table>

(Continued on page 9)
### 15 Regulatory information

| · Safety, health and environmental regulations/legislation specific for the substance or mixture |
| SARA |
| · Section 355 (extremely hazardous substances): |
| None of the ingredients is listed. |
| · Section 313 (Specific toxic chemical listings): |
| None of the ingredients is listed. |
| · TSCA (Toxic Substances Control Act): |
| All ingredients are listed. |
| · Proposition 65 |
| · Chemicals known to cause cancer: |
| CAS: 123-35-3 Myrcene |
| WARNING: Consuming this product can expose you to Myrcene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov/food. |
| Myrcene CAS-no.123-35-3 (85% by weight) |
| · Chemicals known to cause reproductive toxicity for females: |
| None of the ingredients is listed. |
| · Chemicals known to cause reproductive toxicity for males: |
| None of the ingredients is listed. |
| · Chemicals known to cause developmental toxicity: |
| None of the ingredients is listed. |
| · Carcinogenic categories |
| · EPA (Environmental Protection Agency) |
| None of the ingredients is listed. |
| · TLV (Threshold Limit Value established by ACGIH) |
| None of the ingredients is listed. |
| · NIOSH-Ca (National Institute for Occupational Safety and Health) |
| None of the ingredients is listed. |
| · GHS label elements |
| Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible. The product is classified and labeled according to the Globally Harmonized System (GHS). |
| · Hazard pictograms |
| GHS02  GHS07  GHS08 |
| · Signal word Danger |
| · Hazard-determining components of labeling: |
| Myrcene |
Trade name: Myrcene natural

- **Hazard statements**
  - H226 Flammable liquid and vapor.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H304 May be fatal if swallowed and enters airways.

- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - P301+P310 If swallowed: Immediately call a poison center/doctor.
  - P310 Specific treatment (see on this label).
  - P331 Do NOT induce vomiting.
  - P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P353 Take off contaminated clothing and wash it before reuse.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
  - H226 Flammable liquid and vapor.
  - H315 Causes skin irritation.
  - H304 May be fatal if swallowed and enters airways.
  - H317 May cause an allergic skin reaction.

- **Department issuing SDS:** Product Safety Department
- **Contact:**
  - Product Safety Department
  - productsafety@adv-bio.com
- **Date of preparation / last revision** 02/11/2019 / -
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Flam. Liq. 3: Flammable liquids – Category 3
<table>
<thead>
<tr>
<th>Trade name: Myrcene natural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Skin Sens. 1: Skin sensitisation – Category 1</td>
</tr>
<tr>
<td>Asp. Tox. 1: Aspiration hazard – Category 1</td>
</tr>
</tbody>
</table>

(Continuation of page 10)