Safety Data Sheet
acc. to OSHA HCS

Printed date 03/03/2020 Reviewed on 03/02/2020

1 Identification

- Product identifier
- Trade name: 2-Ethyl-3(5/6)-Dimethylpyrazine Natural
- Product number: 1711
- CAS Number: 13925-07-0/13360-65-1/1124-11-4
- Application of the substance / the mixture Flavoring Ingredients

- 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
productsafty@adv-bio.com

- Emergency telephone number:
Infotrac: 1-800-535-5053 (Domestic) & 1-352-323-3500 (International)
Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

2 Hazard(s) identification

- Classification of the substance or mixture
GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Flam. Liq. 4 H227 Combustible liquid.

- Label elements Harmful in contact with skin or if inhaled.

- 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
GHS07

- Signal word Warning

(Continued on page 2)
Trade name: 2-Ethyl-3(5/6)-Dimethylpyrazine Natural

- **Hazard-determining components of labeling:**
  - 2-Ethyl-3,6-dimethylpyrazine
  - 2-Ethyl-3,5-dimethylpyrazine
  - 2,3,5,6-tetramethylpyrazine

- **Hazard statements**
  - H227 Combustible liquid.
  - H302 Harmful if swallowed.

- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P403+P235 Store in a well-ventilated place. Keep cool.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 2
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH = 2
    - FIRE = 2
    - REACTIVITY = 0
  - **Other hazards**
  - **Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

#### Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>2-Ethyl-3,5-dimethylpyrazine</th>
<th>2-Ethyl-3,6-dimethylpyrazine</th>
<th>2,3,5,6-tetramethylpyrazine</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 13925-07-0</td>
<td>[Acute Tox. 4, H302; Flam. Liq. 4, H227]</td>
<td>[Acute Tox. 4, H302; Flam. Liq. 4, H227]</td>
<td>[Acute Tox. 4, H302]</td>
</tr>
<tr>
<td>CAS: 13660-65-1</td>
<td>40-50%</td>
<td>35-45%</td>
<td>10-15%</td>
</tr>
<tr>
<td>CAS: 1124-11-4</td>
<td>40-50%</td>
<td>35-45%</td>
<td>10-15%</td>
</tr>
</tbody>
</table>

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

(Continued on page 3)
### 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.
  - **Special hazards arising from the substance or mixture** No 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).
  - 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:
    - None of the ingredients is listed.
  - PAC-2:
    - None of the ingredients is listed.
  - PAC-3:
    - None of the ingredients is listed.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
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.
      Wash hands before breaks and at the end of work.
    - Breathing equipment: Not required.
    - 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 cannot 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: Goggles recommended during refilling.
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Trade name: 2-Ethyl-3(5/6)-Dimethylpyrazine Natural

### 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>
<tr>
<td>Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Undetermined.</td>
</tr>
<tr>
<td>Flash point: 71.2 °C (160.2 °F)</td>
</tr>
<tr>
<td>Flammability (solid, gaseous): Not applicable.</td>
</tr>
<tr>
<td>Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>Auto igniting: Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion: Not determined.</td>
</tr>
<tr>
<td>Explosion limits:</td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td>Vapor pressure: Not determined.</td>
</tr>
<tr>
<td>Density at 20 °C (68 °F): 0.94-1.015 g/cm³ (7.8443-8.47017 lbs/gal)</td>
</tr>
<tr>
<td>Specific Gravity 0.940-1.015 @ 20 °C (33.730.2 @ 68 °F)</td>
</tr>
<tr>
<td>Relative density Not determined.</td>
</tr>
<tr>
<td>Vapor density Not determined.</td>
</tr>
<tr>
<td>Evaporation rate Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with Water: Not miscible or difficult to mix.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water): Not determined.</td>
</tr>
<tr>
<td>Viscosity:</td>
</tr>
<tr>
<td>Dynamic: Not determined.</td>
</tr>
<tr>
<td>Kinematic: Not determined.</td>
</tr>
<tr>
<td>Solvent content:</td>
</tr>
<tr>
<td>VOC content: 0.00 %</td>
</tr>
<tr>
<td>0.0 g/l / 0.00 lb/gal</td>
</tr>
<tr>
<td>Solids content: 0-11 %</td>
</tr>
<tr>
<td>Other information No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

| Reactivity No further relevant information available. |

(Continued on page 6)
11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification:

| ATE (Acute Toxicity Estimate) | Oral LD50 | 391-1,000 mg/kg |
| CAS: 13925-07-0 2-Ethyl-3,5-dimethylpyrazine | Oral LD50 | 500 mg/kg (ATE) |
| CAS: 13660-65-1 2-Ethyl-3,6-dimethylpyrazine | Oral LD50 | 500 mg/kg (ATE) |
| CAS: 1124-11-4 2,3,5,6-tetramethylpyrazine | Oral LD50 | 1,910 mg/kg (rat) |

- Primary irritant effect:
  - on the skin: No irritating effect.
  - on the eye: No irritating effect.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information: Harmful

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
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
  - DOT, ADR, IMDG, IATA: Not Regulated

- UN proper shipping name
  - DOT, ADR, IMDG, IATA: Not Regulated

- Transport hazard class(es)
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

- Packing group
  - DOT, ADR, IMDG, IATA: Not Regulated

- Environmental hazards:
  - Not applicable.

- Special precautions for user:
  - Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - Not dangerous according to the above specifications.

- UN "Model Regulation": Not Regulated

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.
### Trade name: 2-Ethyl-3(5/6)-Dimethylpyrazine Natural

| · **TSCA (Toxic Substances Control Act):** | All components have the value ACTIVE. |
| · **Hazardous Air Pollutants** | None of the ingredients is listed. |
| · **Proposition 65** | |
| · **Chemicals known to cause cancer:** | None of the ingredients is listed. |
| · **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** | ![GHS07](image) |
| · **Signal word** | Warning |
| · **Hazard-determining components of labeling:** | 2-Ethyl-3,6-dimethylpyrazine  
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| · **Hazard statements** | H227 Combustible liquid.  
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P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
P330 Rinse mouth.  
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Trade name: 2-Ethyl-3(5/6)-Dimethylpyrazine Natural

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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.

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
  H227 Combustible liquid.
  H302 Harmful if swallowed.

· Department issuing SDS: Product Safety Department

· Contact:
  Product Safety Department
  productsafety@adv-bio.com

· Date of preparation / last revision 03/03/2020 / -

· 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. 4: Flammable liquids – Category 4
  Acute Tox. 4: Acute toxicity – Category 4