## 1 Identification

- **Product identifier**
  - **Trade name:** 2,3-Diethyl-5-Methyl Pyrazine synthetic
  - **Product number:** 4012
  - **CAS Number:** 18138-04-0
  - **EC number:** 242-024-6
- **Application of the substance / the mixture** Food flavorings
- **Details of the supplier of the safety data sheet**
  - **Disclaimers:** 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**
  - 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 substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** Not Applicable
- **Signal word** Warning
- **Hazard statements**
  - H227 Combustible liquid.
- **Precautionary statements**
  - **P210** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
  - **P280** Wear protective gloves/protective clothing/eye protection/face protection.
  - **P370+P378** In case of fire: Use for extinction: CO2, powder or water spray.
  - **P403+P235** Store in a well-ventilated place. Keep cool.
  - **P501** Dispose of contents/container in accordance with local/regional/national/international regulations.
3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  18138-04-0 2,3-diethyl-5-methylpyrazine
- Identification number(s)
  EC number: 242-024-6

4 First-aid measures

- Description of first aid measures
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.
- 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.
- 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.
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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:
    Substance is not listed.
  - PAC-2:
    Substance is not listed.
  - PAC-3:
    Substance is not listed.

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special precautions are necessary if used correctly.
  - Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.
- 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: Not required.
- 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: Wash hands before breaks and at the end of work.
9 Physical and chemical properties

· Information on basic physical and chemical properties
  
  · General Information
  
  · Appearance:
    
    Form: Liquid
    
    Color: According to product specification
    
    Odor: According to product specification
    
    Odor threshold: Not determined.
  
  · pH-value: Not determined.

· Change in condition
  
  Melting point/Melting range: Undetermined.
  
  Boiling point/Boiling range: Undetermined.

· Flash point: 80 °C (176 °F)

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: Not determined.

· Auto igniting: Not determined.

· Danger of explosion: Not determined.

· Explosion limits:
  
  Lower: Not determined.
  
  Upper: Not determined.

· Vapor pressure: Not determined.

· Density at 20 °C (68 °F): 0.95 g/cm³ (7.92775 lbs/gal)

· Relative density Not determined.

· Vapor density Not determined.
48.1.23

· Evaporation rate  Not determined.
· Solubility in / Miscibility with Water:  Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):  Not determined.
· Viscosity:  
  Dynamic:  Not determined.
  Kinematic:  Not determined.
  VOC content:  0.00 %
  0.0 g/l / 0.00 lb/gal
· Other information  No further relevant information available.

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:
  · Primary irritant effect:
  · on the skin:  No irritant effect.
  · on the eye:  No irritating effect.
  · Sensitization:  No sensitizing effects known.
· Additional toxicological information:
· Carcinogenic categories
  · IARC (International Agency for Research on Cancer)  
    Substance is not listed.
  · NTP (National Toxicology Program)  
    Substance is not listed.
  · OSHA-Ca (Occupational Safety & Health Administration)  
    Substance is not 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.
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- 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
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

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

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

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

- Environmental hazards:
  - Marine pollutant: No

- 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):
    Substance is not listed.
  · Section 313 (Specific toxic chemical listings):
    Substance is not listed.
  · TSCA (Toxic Substances Control Act):
    Substance is listed.
  · TSCA new (21st Century Act): (Substances not listed)
    CAS: 18138-04-0 2,3-diethyl-5-methylpyrazine
  · Proposition 65
    · Chemicals known to cause cancer:
      Substance is not listed.
    · Chemicals known to cause reproductive toxicity for females:
      Substance is not listed.
    · Chemicals known to cause reproductive toxicity for males:
      Substance is not listed.
    · Chemicals known to cause developmental toxicity:
      Substance is not listed.
  · Carcinogenic categories
    · EPA (Environmental Protection Agency)
      Substance is not listed.
    · TLV (Threshold Limit Value established by ACGIH)
      Substance is not listed.
    · NIOSH-Ca (National Institute for Occupational Safety and Health)
      Substance is not 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 substance is classified and labeled according to the Globally Harmonized System (GHS).
    · Hazard pictograms Not Applicable
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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.

- **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
  - 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)
  - 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