1 Identification

- Product identifier
- Trade name: 2,5-Dimethyl Pyrazine synthetic
- Product number: 4008
- CAS Number: 123-32-0
- EC number: 204-618-3
- Application of the substance / the mixture: Food flavorings

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 substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: 2,5-Dimethyl Pyrazine synthetic

· Hazard pictograms

![GHS07](image)

· Signal word Warning

· Hazard-determining components of labeling:
2,5-dimethylpyrazine

· 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 / 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: 1, Fire: 2, Reactivity: 0](image)

· HMIS-ratings (scale 0 - 4)

![Health: 1, Fire: 2, Reactivity: 0](image)

· 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
123-32-0 2,5-dimethylpyrazine
· Identification number(s)
· EC number: 204-618-3
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.
  - **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:** Immediately call a 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.
  - 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:**
  - Dilute with plenty of water.
  - 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.
Safety Data Sheet
acc. to OSHA HCS

Trade name: 2,5-Dimethyl Pyrazine synthetic

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:
  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.

- 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.
## 9 Physical and chemical properties

- **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: 15 °C (59 °F)
  - Boiling point/Boiling range: 155 °C (311 °F)
- **Flash point:** 64 °C (147.2 °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):** 0.99 g/cm³ (8.26155 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with Water:** Fully miscible.
- **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.
11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification:
      - ATE (Acute Toxicity Estimate)
        - Oral LD50 1,020 mg/kg (rat)
      - CAS: 123-32-0 2,5-dimethylpyrazine
        - Oral LD50 1,020 mg/kg (rat)
      - 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.
    - 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.
### 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.
  - **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, ADN, IMDG, IATA: Not Regulated

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

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

- **Packing group**
  - DOT, ADR, ADN, 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.
Trade name: 2,5-Dimethyl Pyrazine synthetic

- TSCA new (21st Century Act): (Substances not listed)
  - CAS: 123-32-0 [2,5-dimethylpyrazine]
- 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
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  The substance is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    - GHS07

- Signal word Warning
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  - P280 Wear protective gloves / 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.

- 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
  productssafety@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)
  - 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