

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 11.01.2023

Version number 1

Revision: 10.01.2023

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name: 2,3,5-Trimethylpyrazine Natural**
- **Product number: 1347**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Flavoring Ingredients
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Advanced Biotech  
10 Taft Road  
Totowa, NJ 07512 USA
- **Further information obtainable from:**  
Product Safety Department  
productsafety@adv-bio.com
- **1.4 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

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
2,3,5-Trimethylpyrazine  
2-Ethyl-5-Methyl Pyrazine  
2,6-Dimethylpyrazine  
2,5-Dimethylpyrazine
- **Hazard statements**  
H302 Harmful if swallowed.
- **Precautionary statements**  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P330 Rinse mouth.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**SECTION 3: Composition/information on ingredients**

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

| · <b>Dangerous components:</b>       |  |           |
|--------------------------------------|--|-----------|
| CAS: 14667-55-1<br>EINECS: 238-712-0 | 2,3,5-Trimethylpyrazine<br>⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 4, H302<br>ATE: LD50 oral: 810 mg/kg                         | ≥50-≤100% |
| CAS: 13360-64-0<br>EINECS: 236-416-6 | 2-Ethyl-5-Methyl Pyrazine<br>⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H311; ⚠ Acute Tox. 4, H302<br>ATE: LD50 oral: 900 mg/kg | ≥0-≤10%   |
| CAS: 13925-03-6<br>EINECS: 237-692-0 | 2-Ethyl-6-Methyl-Pyrazine<br>⚠ Flam. Liq. 3, H226  | ≥0-≤10%   |
| CAS: 108-50-9<br>EINECS: 203-589-4   | 2,6-Dimethylpyrazine<br>⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 4, H302<br>ATE: LD50 oral: 880 mg/kg                            | ≥0-≤2.5%  |
| CAS: 123-32-0<br>EINECS: 204-618-3   | 2,5-Dimethylpyrazine<br>⚠ Acute Tox. 4, H302<br>ATE: LD50 oral: 1,020 mg/kg  | ≥0-≤2.5%  |
| CAS: 13360-65-1<br>EINECS: 236-417-1 | 2-Ethyl-3,6-dimethylpyrazine<br>⚠ Acute Tox. 4, H302   | ≥0-≤2.5%  |
| CAS: 13925-07-0<br>EINECS: 237-694-1 | 2-Ethyl-3,5-dimethylpyrazine<br>⚠ Acute Tox. 4, H302<br>ATE: LD50 oral: 500 mg/kg  | ≥0-≤2.5%  |

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

**SECTION 4: First aid measures**

- **4.1 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:** Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 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.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 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.
- **6.4 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.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
No special requirements.  
Please refer to the product specification and/or Certificate of Analysis for product storage requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients 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 valid during the making were used as a basis.

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- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see item 7.
- **Individual protection measures, such as 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.
- **Respiratory protection:** Not required.
- **Hand protection**  
 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/face protection** Goggles recommended during refilling

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Fluid
- **Colour:** According to product specification
- **Odour:** According to product specification
- **Odour threshold:** Not determined.
- **Melting point/freezing point:** Undetermined.
- **Boiling point or initial boiling point and boiling range** Undetermined.
- **Flammability** Not applicable.
- **Lower and upper explosion limit**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Flash point:** 62.6 °C
- **Decomposition temperature:** Not determined.
- **pH** Not determined.
- **Viscosity:**
- **Kinematic viscosity** Not determined.
- **Dynamic:** Not determined.
- **Solubility**
- **water:** Fully miscible.
- **Partition coefficient n-octanol/water (log value)** Not determined.
- **Vapour pressure:** Not determined.
- **Density and/or relative density**
- **Density at 20 °C:** 0.965-0.985 g/cm<sup>3</sup>

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|  |   |
|--|---|
| · <b>Relative density</b>  | Not determined.                               |
| · <b>Specific Gravity</b>  | 0.965 – 0.985 @ 20 °C                         |
| · <b>Refractive Index</b>  |   |
| · <b>Vapour density</b>  | Not determined.                               |
| · <b>9.2 Other information</b>   |   |
| · <b>Appearance:</b>   |   |
| · <b>Form:</b>   | Liquid  |
| · <b>Important information on protection of health and environment, and on safety.</b> |   |
| · <b>Auto-ignition temperature:</b>  | Product is not selfigniting.                  |
| · <b>Explosive properties:</b>   | Product does not present an explosion hazard. |
| · <b>Solvent content:</b>  |   |
| · <b>VOC (EC)</b>  | 0.00 %  |
| · <b>Solids content:</b>   | 0.5-2 %                                       |
| · <b>Change in condition</b>   |   |
| · <b>Evaporation rate</b>  | Not determined.                               |
| · <b>Information with regard to physical hazard classes</b>                            |   |
| · <b>Explosives</b>  | Void  |
| · <b>Flammable gases</b>   | Void  |
| · <b>Aerosols</b>  | Void  |
| · <b>Oxidising gases</b>   | Void  |
| · <b>Gases under pressure</b>  | Void  |
| · <b>Flammable liquids</b>   | Void  |
| · <b>Flammable solids</b>  | Void  |
| · <b>Self-reactive substances and mixtures</b>   | Void  |
| · <b>Pyrophoric liquids</b>  | Void  |
| · <b>Pyrophoric solids</b>   | Void  |
| · <b>Self-heating substances and mixtures</b>  | Void  |
| · <b>Substances and mixtures, which emit flammable gases in contact with water</b>     | Void  |
| · <b>Oxidising liquids</b>   | Void  |
| · <b>Oxidising solids</b>  | Void  |
| · <b>Organic peroxides</b>   | Void  |
| · <b>Corrosive to metals</b>   | Void  |
| · <b>Desensitised explosives</b>   | Void  |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

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**SECTION 11: Toxicological information**

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed.

- **LD/LC50 values relevant for classification:**

**ATE (Acute Toxicity Estimates)**

|        |      |                           |
|--------|------|---------------------------|
| Oral   | LD50 | 786-962 mg/kg             |
| Dermal | LD50 | 30,000-60,000 mg/kg (rat) |

**CAS: 14667-55-1 2,3,5-Trimethylpyrazine**

|      |      |                                    |
|------|------|------------------------------------|
| Oral | LD50 | 810 mg/kg (ATE)<br>806 mg/kg (rat) |
|------|------|------------------------------------|

**CAS: 13360-64-0 2-Ethyl-5-Methyl Pyrazine**

|        |      |                                    |
|--------|------|------------------------------------|
| Oral   | LD50 | 900 mg/kg (ATE)<br>900 mg/kg (rat) |
| Dermal | LD50 | 900 mg/kg (rat)                    |

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

- **11.2 Information on other hazards**

- **Endocrine disrupting properties**

None of the ingredients is listed.

**SECTION 12: Ecological information**

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. (Contd. of page 6)

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
- **Recommendation**  
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

**SECTION 14: Transport information**

|   |  |
|---|--|
| · <b>14.1 UN number or ID number</b><br>· <b>ADR, IMDG, IATA</b>                            | Void   |
| · <b>14.2 UN proper shipping name</b><br>· <b>ADR, IMDG, IATA</b>                           | Void   |
| · <b>14.3 Transport hazard class(es)</b><br>· <b>ADR, ADN, IMDG, IATA</b><br>· <b>Class</b> | Void   |
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                                     | Void   |
| · <b>14.5 Environmental hazards:</b>  | Not applicable.                                      |
| · <b>14.6 Special precautions for user</b>  | Not applicable.                                      |
| · <b>14.7 Maritime transport in bulk according to IMO instruments</b>                       | Not applicable.                                      |
| · <b>Transport/Additional information:</b>  | Not dangerous according to the above specifications. |
| · <b>UN "Model Regulation":</b>   | Void   |

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to Regulation (EC) No 1272/2008**  
 The product is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS07

- **Signal word** Warning

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· **Hazard-determining components of labelling:**

2,3,5-Trimethylpyrazine  
2-Ethyl-5-Methyl Pyrazine  
2,6-Dimethylpyrazine  
2,5-Dimethylpyrazine

· **Hazard statements**

H302 Harmful if swallowed.

· **Precautionary statements**

P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
P330 Rinse mouth.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

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

**SECTION 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 vapour.  
H302 Harmful if swallowed.  
H311 Toxic in contact with skin.

· **Department issuing SDS:** Product safety department

· **Contact:**

Product Safety Department  
productsafety@adv-bio.com

· **Date of previous version:** 12.01.2021

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**Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
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)  
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  
Flam. Liq. 3: Flammable liquids – Category 3  
Acute Tox. 4: Acute toxicity – Category 4  
Acute Tox. 3: Acute toxicity – Category 3

GB