

# Safety Data Sheet

acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

## 1 Identification

- **Product identifier**
- **Trade name: 2,5-Dimethyl Pyrazine Natural**
- **Product number:** 1346
- **Application of the substance / the mixture** Flavoring Ingredients
- **Details of the supplier of the safety data sheet**  
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- **Manufacturer/Supplier:**  
 Advanced Biotech  
 10 Taft Road  
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- **Information department:**  
 Product Safety Department  
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 Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 3 H226 Flammable liquid and vapor.



GHS07

Acute Toxicity - Oral 4 H302 Harmful if swallowed.

- **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

- **Signal word** Warning

(Continued on page 2)

**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 1)

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

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

· **Hazard statements**

H226 Flammable liquid and vapor.  
H302 Harmful if swallowed.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
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

· **HMIS-ratings (scale 0 - 4)**



HEALTH 1 Health = 1  
FIRE 2 Fire = 2  
REACTIVITY 0 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:**

CAS: 123-32-0 EINECS: 204-618-3	2,5-Dimethylpyrazine ⚠ Acute Toxicity - Oral 4, H302; Flammable Liquids 4, H227	≥25-≤100%
CAS: 108-50-9 EINECS: 203-589-4	2,6-Dimethylpyrazine ⚠ Flammable Liquids 3, H226; ⚠ Acute Toxicity - Oral 4, H302	≥10-≤50%
CAS: 13925-03-6 EINECS: 237-692-0	2-Ethyl-6-Methyl-Pyrazine ⚠ Flammable Liquids 3, H226	≥2.5-≤10%
CAS: 14667-55-1 EINECS: 238-712-0	2,3,5-Trimethylpyrazine ⚠ Flammable Liquids 3, H226; ⚠ Acute Toxicity - Oral 4, H302; Eye Irritation 2A, H319	≥2.5-<10%
CAS: 13360-64-0 EINECS: 236-416-6	2-Ethyl-5-Methyl Pyrazine ⚠ Flammable Liquids 3, H226; ⚠ Acute Toxicity - Dermal 3, H311; ⚠ Acute Toxicity - Oral 4, H302	≥0-≤10%

(Continued on page 3)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 2)

**4 First-aid measures**

- **Description of first aid measures**
- **General information:**  
 Immediately remove any clothing soiled by the product.  
 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:** Immediately rinse with water.
- **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 section 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.

(Continued on page 4)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 3)

· **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.
- **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 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:** 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 section 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.
- **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 can not be calculated in advance and has therefore to be checked prior to the application.

(Continued on page 5)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 4)

· **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

**9 Physical and chemical properties**

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	According to product specification
· <b>Odor:</b>	According to product specification
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	Undetermined.

· **Flash point:** 52.1 °C (125.8 °F)

· **Flammability (solid, gaseous):** Flammable.

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapor pressure:** Not determined.

· **Density at 20 °C (68 °F):** 0.955-1.045 g/cm<sup>3</sup> (7.96948-8.72053 lbs/gal)

· **Specific Gravity** 0.955-1.045 @ 20 °C (33.7-33.9 @ 68 °F)

· **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:**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

(Continued on page 6)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

Reviewed on 01/16/2024

**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 5)

· <b>Solvent content:</b>	
<b>VOC content:</b>	0.00 % 0.0 g/l / 0.00 lb/gal
<b>Solids content:</b>	20-30 %
· <b>Other information</b>	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:**
- **LD/LC50 values that are relevant for classification:**

**ATE (Acute Toxicity Estimate)**

Oral	LD50	934-1,374 mg/kg (ATE)
Dermal	LD50	15,000-45,000 mg/kg (rat)

**CAS: 123-32-0 2,5-Dimethylpyrazine**

Oral	LD50	1,020 mg/kg (ATE) 1,020 mg/kg (rat)
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**CAS: 13360-64-0 2-Ethyl-5-Methyl Pyrazine**

Oral	LD50	900 mg/kg (ATE) 900 mg/kg (rat)
Dermal	LD50	900 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:** Harmful

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

(Continued on page 7)

**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/16/2024

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**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 6)

· **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· <b>UN-Number</b>	UN1993
· <b>DOT, IMDG, IATA</b>	
· <b>UN proper shipping name</b>	Flammable liquids, n.o.s. (2-Ethyl-5-Methyl Pyrazine, 2-Ethyl-6-Methyl-Pyrazine)
· <b>DOT</b>	
· <b>IMDG, IATA</b>	FLAMMABLE LIQUID, N.O.S. (2-Ethyl-5-Methyl Pyrazine, 2-Ethyl-6-Methyl-Pyrazine)

(Continued on page 8)



**Safety Data Sheet**  
acc. to OSHA HCS (29 CFR § 1910.1200)

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Reviewed on 01/16/2024

Trade name: 2,5-Dimethyl Pyrazine Natural

(Continuation of page 7)

· Transport hazard class(es)

· DOT



· Class  
· Label

3 Flammable liquids  
3

· IMDG, IATA



· Class  
· Label

3 Flammable liquids  
3

· Packing group  
· DOT, IMDG, IATA

III

· Environmental hazards:

Not applicable.

· Special precautions for user

Warning: Flammable liquids

· Hazard identification number (Kemler code):

30

· EMS Number:

F-E,S-E

· Stowage Category

A

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

· Transport/Additional information:

· DOT

· Quantity limitations

On passenger aircraft/rail: 60 L  
On cargo aircraft only: 220 L

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 1993 FLAMMABLE LIQUID, N.O.S. (2-ETHYL-5-METHYL PYRAZINE, 2-ETHYL-6-METHYL-PYRAZINE), 3, III

**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.

(Continued on page 9)



**Safety Data Sheet**  
 acc. to OSHA HCS (29 CFR § 1910.1200)

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**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 8)

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

CAS: 123-32-0	2,5-Dimethylpyrazine	ACTIVE
CAS: 108-50-9	2,6-Dimethylpyrazine	ACTIVE
CAS: 14667-55-1	2,3,5-Trimethylpyrazine	ACTIVE
CAS: 13360-64-0	2-Ethyl-5-Methyl Pyrazine	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)**

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

· **Signal word** Warning

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

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

· **Hazard statements**

- H226 Flammable liquid and vapor.
- H302 Harmful if swallowed.

(Continued on page 10)

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**Trade name: 2,5-Dimethyl Pyrazine Natural**

(Continuation of page 9)

· **Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 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.

· **Relevant phrases**

- H226 Flammable liquid and vapor.
- H227 Combustible liquid.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H319 Causes serious eye irritation.

· **Department issuing SDS:** Product Safety Department

· **Contact:**

Product Safety Department  
 productsafety@adv-bio.com

· **Date of preparation / last revision** 01/16/2024

· **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
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- 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
- Flammable Liquids 3: Flammable liquids – Category 3
- Flammable Liquids 4: Flammable liquids – Category 4
- Acute Toxicity - Oral 4: Acute toxicity – Category 4
- Acute Toxicity - Dermal 3: Acute toxicity – Category 3
- Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A