

Safety Data Sheet acc. to OSHA HCS

Printing date 11/20/2018

Reviewed on 11/20/2018

1 Identification

- **Product identifier**
- **Trade name: 2,6-Dimethyl Pyrazine Natural**
- **Product number:** 1497
- **CAS Number:** 123-32-0/108-50-9
- **EINECS Number:** 204-618-3/203-589-4
- **Application of the substance / the mixture** Food flavorings
- **Details of the supplier of the safety data sheet**
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- **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**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

- **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).

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· **Hazard pictograms**



GHS02 GHS06

· **Signal word** Danger

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

2,6-dimethylpyrazine
 Proprietary natural FEMA/GRAS Alkyl Pyrazine
 2,5-dimethylpyrazine
 Proprietary natural FEMA/GRAS Alkyl Pyrazine

· **Hazard statements**

H226 Flammable liquid and vapor.
 H301 Toxic if swallowed.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P301+P310 If swallowed: Immediately call a poison center/doctor.
 P321 Specific treatment (see on this label).
 P330 Rinse mouth.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P405 Store locked up.
 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 Health = 2
 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

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

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· Dangerous components:		
CAS: 108-50-9	2,6-dimethylpyrazine ⚠ Flam. Sol. 1, H228; ⚠ Acute Tox. 3, H301	90-95%
	Proprietary natural FEMA/GRAS Alkyl Pyrazine ⚠ Flam. Liq. 3, H226	
	Proprietary natural FEMA/GRAS Alkyl Pyrazine ⚠ Acute Tox. 3, H301; ⚠ Acute Tox. 3, H311; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2A, H319; STOT SE 3, H335; Flam. Liq. 4, H227	
CAS: 123-32-0	2,5-dimethylpyrazine ⚠ Acute Tox. 4, H302; Flam. Liq. 4, H227	1-3%
	Proprietary natural FEMA/GRAS Alkyl Pyrazine ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 4, H302; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2A, H319; STOT SE 3, H335	

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· **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.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **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.

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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.
- **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 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:**
 The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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- **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.
- **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:**

Form:

Slurry, solid (may solidify at low temperatures, can be reconstituted by melting for several hours at <60°C)

Color:

According to product specification

· **Odor:**

According to product specification

· **Odor threshold:**

Not determined.

· **pH-value:**

Not determined.

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· Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. Undetermined.
· Flash point:	51 °C (123.8 °F)
· Flammability (solid, gaseous):	Not applicable.
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits: Lower: Upper:	Not determined. Not determined.
· Vapor pressure:	Not determined.
· Density: · Relative density · Vapor density · Evaporation rate	Not determined. Not determined. Not determined. Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity: Dynamic: Kinematic:	Not determined. Not determined.
· Solvent content: VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
· Solids content: · Other information	90-95 % 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.

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· **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	100-108 mg/kg
Dermal	LD50	22,500-45,000 mg/kg (rat)

CAS: 108-50-9 2,6-dimethylpyrazine

Oral	LD50	100 mg/kg (ATE)
------	------	-----------------

Proprietary natural FEMA/GRAS Alkyl Pyrazine

Oral	LD50	100 mg/kg (ATE)
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:**

The product shows the following dangers according to internally approved calculation methods for preparations:
 Toxic

· **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.

· **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.

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- **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

- | | |
|---|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | <p>UN1992</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA | <p>Flammable liquids, toxic, n.o.s. (2,6-dimethylpyrazine)
 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (2,6-dimethylpyrazine)
 FLAMMABLE LIQUID, TOXIC, N.O.S. (2,6-dimethylpyrazine)</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <p>3 Flammable liquids</p> |
| <ul style="list-style-type: none"> · Class · Label | <p>3, 6.1</p> |



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<p>· ADR</p>  	
<p>· Class · Label</p>	<p>3 (FT1) Flammable liquids 3+6.1</p>
<p>· IMDG</p>  	
<p>· Class · Label</p>	<p>3 Flammable liquids 3/6.1</p>
<p>· IATA</p>  	
<p>· Class · Label</p>	<p>3 Flammable liquids 3 (6.1)</p>
<p>· Packing group · DOT, ADR, IMDG, IATA</p>	<p>III</p>
<p>· Environmental hazards:</p>	<p>Not applicable.</p>
<p>· Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category</p>	<p>Warning: Flammable liquids 36 F-E,S-D A</p>
<p>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</p>	<p>Not applicable.</p>
<p>· Transport/Additional information:</p>	
<p>· DOT · Quantity limitations</p>	<p>On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L</p>
<p>· ADR · Excepted quantities (EQ)</p>	<p>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>

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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (2,6-DIMETHYLPYRAZINE), 3 (6.1), 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.

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

None of the ingredients is listed.

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

CAS: 108-50-9	2,6-dimethylpyrazine
	Proprietary natural FEMA/GRAS Alkyl Pyrazine
CAS: 123-32-0	2,5-dimethylpyrazine
	Proprietary natural FEMA/GRAS Alkyl Pyrazine

· **TSCA new (21st Century Act) (Substances not listed)**

CAS: 108-50-9	2,6-dimethylpyrazine
	Proprietary natural FEMA/GRAS Alkyl Pyrazine
	Proprietary natural FEMA/GRAS Alkyl Pyrazine
CAS: 123-32-0	2,5-dimethylpyrazine
	Proprietary natural FEMA/GRAS Alkyl Pyrazine

· **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.

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· **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**



GHS02 GHS06

· **Signal word** Danger

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

2,6-dimethylpyrazine
 Proprietary natural FEMA/GRAS Alkyl Pyrazine
 2,5-dimethylpyrazine
 Proprietary natural FEMA/GRAS Alkyl Pyrazine

· **Hazard statements**

H226 Flammable liquid and vapor.
 H301 Toxic if swallowed.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P301+P310 If swallowed: Immediately call a poison center/doctor.
 P321 Specific treatment (see on this label).
 P330 Rinse mouth.
 P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P405 Store locked up.
 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.

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H227 Combustible liquid.
 H228 Flammable solid.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

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

· **Contact:**

Product Safety Department
 productsafety@adv-bio.com

· **Date of preparation / last revision** 11/20/2018 / -

· **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. 3: Flammable liquids – Category 3
 Flam. Liq. 4: Flammable liquids – Category 4
 Flam. Sol. 1: Flammable solids – Category 1
 Acute Tox. 3: Acute toxicity – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3