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

Date of issue: 06/23/2026 Reviewed on 06/23/2026

1 Identification

· **Product identifier**

· **Trade name: 2,3,5-Trimethylpyrazine Natural**
· **Other means of identification**

· **Product number:** 1347
· **Application of the substance / the mixture** Flavoring Ingredients

· **Details of the supplier of the safety data sheet**
DISCLAIMER: 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:**
Infotrac: 1-800-535-5053 (Domestic) & 1-352-323-3500 (International) Contract 72941
Email: responders@infotrac.net & During normal business hours: 1-973-339-6242

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS07

Acute toxicity - oral 4 H302 Harmful if swallowed.
Eye irritation 2A H319 Causes serious eye irritation.
Flammable liquids 4 H227 Combustible liquid.
· **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**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
2,3,5-Trimethylpyrazine
2-Ethyl-5-Methyl Pyrazine

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2,6-Dimethylpyrazine
2,5-Dimethylpyrazine

· **Hazard statements**
H227 Combustible liquid.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P280	Wear eye protection / face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P330	Rinse mouth.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use CO2, powder or water spray to extinguish.
P403	Store in a well-ventilated place.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Information pertaining to particular dangers for man and environment:**
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 2
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 2
Fire = 2
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Classification according to (d)(1)(ii) of § 1910.1200**
The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.
· **Hazards not otherwise classified**
There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

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· **Dangerous components:**

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	≥50-≤100%
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%
CAS: 13925-03-6 EINECS: 237-692-0	2-Ethyl-6-Methyl-Pyrazine Flammable liquids 3, H226	≥0-≤10%
CAS: 108-50-9 EINECS: 203-589-4	2,6-Dimethylpyrazine Flammable solids 2, H228; Acute toxicity - oral 4, H302	≥0-≤2.5%
CAS: 123-32-0 EINECS: 204-618-3	2,5-Dimethylpyrazine Acute toxicity - oral 4, H302; Flammable liquids 4, H227	≥0-≤2.5%
CAS: 13360-65-1 EINECS: 236-417-1	2-Ethyl-3,6-dimethylpyrazine Acute toxicity - oral 4, H302; Flammable liquids 4, H227	≥0-≤2.5%
CAS: 13925-07-0 EINECS: 237-694-1	2-Ethyl-3,5-dimethylpyrazine Acute toxicity - oral 4, H302; Flammable liquids 4, H227	≥0-≤2.5%

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. If symptoms persist, consult a doctor.
· **After swallowing:** Immediately call a 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** Not required

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· **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.
· **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.

· **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.

7 Handling and storage

· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
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

· **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**
· **Appropriate engineering controls** No further data; see section 7.
· **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.
Avoid contact with the eyes.
Avoid contact with the eyes and skin.
· **Breathing equipment:** Not required

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· **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**	
· **Physical state**	Liquid
· **Color:**	According to product specification
· **Odor:**	According to product specification
· **Odor threshold:**	Not determined
· **Melting point/Melting range:**	Undetermined
· **Boiling point/Boiling range:**	Undetermined
· **Flammability:**	Not applicable
· **Explosion limits:**	
· **Lower:**	Not determined
· **Upper:**	Not determined
· **Flash point:**	62.6 °C (144.7 °F)
· **Decomposition temperature:**	Not determined
· **pH-value:**	Not determined
· **Viscosity:**	
· **Kinematic:**	Not determined
· **Dynamic:**	Not determined
· **Solubility in / Miscibility with**	
· **Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined
· **Vapor pressure:**	Not determined

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· **Vapor pressure:**	
· **Density at 20 °C (68 °F):**	0.965-0.985 g/cm³ (8.05293-8.21983 lbs/gal)
· **Relative density**	Not determined
· **Specific Gravity**	0.965 – 0.985 @ 20 °C (33.7 – 33.8 @ 68 °F)
· **Refractive Index**	
· **Vapor density**	Not determined
· **Particle characteristics**	Not applicable

· **Other information**	
· **Appearance:**	
· **Form:**	Liquid
· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Not determined
· **Solvent content:**	
· **VOC content:**	0.00 % 0.0 g/l / 0.00 lb/gal
· **Solids content:**	0.5-2 %
· **Change in condition**	
· **Evaporation rate**	Not determined

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

CAS: 14667-55-1 2,3,5-Trimethylpyrazine		
Oral	LD50	806 mg/kg (ATE) 806 mg/kg (rat)
CAS: 13360-64-0 2-Ethyl-5-Methyl Pyrazine		
Oral	LD50	900 mg/kg (ATE) 900 mg/kg (rat)

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Dermal	LD50	900 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
· **Interactive effects** No interactive effects between components are known.

· **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.

· **Alternative sources for toxicological information**
No non-standard sources for toxicological information where used.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **Other adverse effects**
· **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.

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.

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

14 Transport information

· **UN-Number** · **DOT, IMDG, IATA**	Not Regulated
· **UN proper shipping name** · **DOT, IMDG, IATA**	Not Regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	Not Regulated
· **Packing group** · **DOT, IMDG, IATA**	Not Regulated
· **Environmental hazards:**	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.
· **Special precautions for user**	Not applicable
· **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):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

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

CAS: 14667-55-1	2,3,5-Trimethylpyrazine	ACTIVE
CAS: 13360-64-0	2-Ethyl-5-Methyl Pyrazine	ACTIVE
CAS: 108-50-9	2,6-Dimethylpyrazine	ACTIVE
CAS: 123-32-0	2,5-Dimethylpyrazine	ACTIVE
CAS: 13360-65-1	2-Ethyl-3,6-dimethylpyrazine	ACTIVE
CAS: 13925-07-0	2-Ethyl-3,5-dimethylpyrazine	ACTIVE

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

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· **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**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labeling:**
2,3,5-Trimethylpyrazine
2-Ethyl-5-Methyl Pyrazine
2,6-Dimethylpyrazine
2,5-Dimethylpyrazine

· **Hazard statements**
H227 Combustible liquid.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P280	Wear eye protection / face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P330	Rinse mouth.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P370+P378	In case of fire: Use CO2, powder or water spray to extinguish.

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P403 Store in a well-ventilated place.
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.
H228 Flammable solid.
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 previous version** 01/09/2025
· **Date of preparation** 06/23/2026
· **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
Flammable solids 2: Flammable solids – Category 2
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

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