

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

Date of issue: 01/28/2026

Reviewed on 01/28/2026

1 Identification

· **Product identifier**

- **Trade name:** Trans-2-hexenal 50% in EtOH natural
- **Other means of identification**

· **Product number:** 1451

· **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**



GHS02 Flame

Flammable liquids 3 H226 Flammable liquid and vapor.



GHS07

Acute toxicity - oral 4 H302 Harmful if swallowed.
Acute toxicity - dermal 4 H312 Harmful in contact with skin.
Skin irritation 2 H315 Causes skin irritation.
Eye irritation 2A H319 Causes serious eye irritation.
Sensitization - skin 1 H317 May cause an allergic skin reaction.

· **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).

(Continued on page 2)

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

Date of issue: 01/28/2026

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Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 1)

· **Hazard pictograms**



GHS02 GHS07

· **Signal word** Warning

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

trans-2-Hexenal

· **Hazard statements**

- H226 Flammable liquid and vapor.
- H302+H312 Harmful if swallowed or in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H317 May cause an allergic skin reaction.

· **Precautionary statements**

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P403+P235 Store in a well-ventilated place. Keep cool.
- 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 Health = 2
 FIRE 2 Fire = 2
 REACTIVITY 0 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.

(Continued on page 3)

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

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Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural






(Continuation of page 2)

- **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.

· **Dangerous components:**

CAS: 64-17-5 EINECS: 200-578-6	Ethanol  Flammable liquids 2, H225;  Eye irritation 2A, H319	25-50%
CAS: 6728-26-3 EINECS: 229-778-1	trans-2-Hexenal  Flammable liquids 3, H226;  Acute toxicity - dermal 3, H311;  Acute toxicity - oral 4, H302; Skin irritation 2, H315; Eye irritation 2A, H319; Sensitization - skin 1, H317	25-50%

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 and be sure to call for a doctor.
 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. 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.

US

(Continued on page 4)

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

Date of issue: 01/28/2026

Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 3)

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.
- **Protective Action Criteria for Chemicals**

· PAC-1:		
CAS: 64-17-5	Ethanol	1800? ppm
· PAC-2:		
CAS: 64-17-5	Ethanol	3300?* ppm
· PAC-3:		
CAS: 64-17-5	Ethanol	15000* ppm

- **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**
 Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.
- **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:**
 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 following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
 At this time, the remaining constituent has no known exposure limits.

CAS: 64-17-5 Ethanol	
PEL	Long-term value: 1900 mg/m ³ , 1000 ppm

(Continued on page 5)

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

Date of issue: 01/28/2026

Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 4)

REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1880 mg/m ³ , 1000 ppm
	A3

- **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:**
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **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

(Continued on page 6)

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

Date of issue: 01/28/2026

Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 5)

· Boiling point/Boiling range:	Undetermined
· Flammability:	Flammable.
· Explosion limits:	
· Lower:	3.5 Vol %
· Upper:	15 Vol %
· Flash point:	<50 °C (<122 °F)
· Auto igniting:	425 °C (797 °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 at 20 °C (68 °F):	59 hPa (44.3 mm Hg)
· Vapor pressure:	
· Density at 20 °C (68 °F):	0.828 g/cm ³ (6.90966 lbs/gal)
· Relative density	Not determined
· 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:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Solvent content:	
· Organic solvents:	50.0 %
· VOC content:	50.00 %
	414.0 g/l / 3.45 lb/gal
· 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.

US

(Continued on page 7)

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

Date of issue: 01/28/2026

Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 6)

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	1,560 mg/kg (rat)
Dermal	LD50	1,200 mg/kg (ATE)

CAS: 64-17-5 Ethanol

Oral	LD50	7,060 mg/kg (rat)
Inhalative	LC50/4 h	20,000 mg/l (rat)

CAS: 6728-26-3 trans-2-Hexenal

Oral	LD50	850 mg/kg (ATE)
		780 mg/kg (rat)
Dermal	LD50	600 mg/kg (ATE)
		600 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **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)**

CAS: 64-17-5	Ethanol	1
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· **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

(Continued on page 8)

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

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Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural





(Continuation of page 7)

- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**
 Water hazard class 2 (Self-assessment): hazardous for water
 Do not allow product to reach ground water, water course or sewage system.
 Danger to drinking water if even small quantities leak into the ground.

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, IMDG, IATA	UN1170
· UN proper shipping name	
· DOT	Ethanol solutions
· IMDG	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), MARINE POLLUTANT
· IATA	ETHANOL SOLUTION
· Transport hazard class(es)	
· DOT	
	 
· Class	3 Flammable liquids
· Label	3
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· IMDG	
	 
· Class	3 Flammable liquids
· Label	3

(Continued on page 9)


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

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Reviewed on 01/28/2026

Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 8)

· IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	III
· DOT, IMDG, IATA	III
· Environmental hazards:	Product contains environmentally hazardous substances: trans-2-Hexenal
· Marine pollutant:	Yes Symbol (fish and tree)
· 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
· Remarks:	Special marking with the symbol (fish and tree).
· 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
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	30
· EMS Number:	F-E,S-D
· Stowage Category	A
· UN "Model Regulation":	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 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.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

(Continued on page 10)

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Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 9)

· **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:**

CAS: 64-17-5 Ethanol

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

CAS: 64-17-5 Ethanol

A3

· **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:**

trans-2-Hexenal

· **Hazard statements**

- H226 Flammable liquid and vapor.
- H302+H312 Harmful if swallowed or in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H317 May cause an allergic skin reaction.

· **Precautionary statements**

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(Continued on page 11)

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

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Trade name: Trans-2-hexenal 50% in EtOH natural

(Continuation of page 10)

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**

- H225 Highly flammable liquid and vapor.
- H226 Flammable liquid and vapor.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.

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

· **Contact:**

Product Safety Department
 productsafety@adv-bio.com

· **Date of previous version** 10/29/2025

· **Date of preparation** 01/28/2026

· **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 2: Flammable liquids – Category 2
- Flammable liquids 3: Flammable liquids – Category 3
- Acute toxicity - oral 4: Acute toxicity – Category 4
- Acute toxicity - dermal 3: Acute toxicity – Category 3
- Skin irritation 2: Skin corrosion/irritation – Category 2
- Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
- Sensitization - skin 1: Skin sensitisation – Category 1