1 Identification

- Product identifier
- Trade name: Trans-2-Hexenol natural
- Product number: 1238
- CAS Number:
  - 928-95-0
  - 928-95-0 (USA)
  - 2305-21-7 (EU)
- EC number:
  - 213-191-2
- Application of the substance / the mixture: Food flavorings

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS02 Flame
  - Flam. Liq. 3 H226 Flammable liquid and vapor.
- 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 substance is classified and labeled according to the Globally Harmonized System (GHS).
Trade name: Trans-2-Hexenol natural

- **Hazard pictograms**
  - GHS02

- **Signal word** Warning
- **Hazard statements**
  - H226 Flammable liquid and vapor.
- **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 = 0
    - 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:** Substances
- **CAS No. Description**
  - 928-95-0 trans-2-Hexenol
- **Identification number(s)**
  - EC number: 213-191-2
4 First-aid measures

- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - 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: If symptoms persist consult 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.
  - 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.

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: Substance is not listed.
  - PAC-2: Substance is not 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.
  - 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: Not required.

- 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:
  - 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.
Trade name: Trans-2-Hexenol natural

**Penetration time of glove material**
The exact breakthrough time has to be determined by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**

![Tightly sealed goggles]

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### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - **Form:** Liquid
    - **Color:** According to product specification
  - **Odor:** According to product specification
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** Undetermined.
    - **Boiling point/Boiling range:** 158-160 °C (316.4-320 °F)
  - **Flash point:** 54 °C (129.2 °F)
  - **Flammability (solid, gaseous):** Not applicable.
  - **Decomposition temperature:** Not determined.
  - **Auto igniting:** Not determined.
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - **Explosion limits:**
    - **Lower:** Not determined.
    - **Upper:** Not determined.
  - **Vapor pressure:** Not determined.
  - **Density at 20 °C (68 °F):** 0.85 g/cm³ (7.09325 lbs/gal)
    - **Relative density:** Not determined.
    - **Vapor density:** Not determined.
    - **Evaporation rate:** Not determined.
  - **Solubility in / Miscibility with**
    - **Water:** Not miscible or difficult to mix.
  - **Partition coefficient (n-octanol/water):** Not determined.
47.0.11 ·  
Viscosity:  
Dynamic: Not determined.  
Kinematic: Not determined.  
VOC content: 0.00 %  
0.0 g/l / 0.00 lb/gal  
Other information 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 3,500 mg/kg (rat)  
Dermal LD50 4,500 mg/kg (rabbit)  
CAS: 928-95-0 trans-2-Hexenol  
Oral LD50 3,500 mg/kg (rat)  
Dermal LD50 4,500 mg/kg (rabbit)  
· Primary irritant effect:  
· on the skin: No irritant effect.  
· on the eye: No irritating effect.  
· Sensitization: No sensitizing effects known.  
· Additional toxicological information:  
· Carcinogenic categories  
· IARC (International Agency for Research on Cancer)  
Substance is not listed.  
· NTP (National Toxicology Program)  
Substance is not 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 2 (Assessment by list): 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.
- **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

- **UN-Number**
  - UN1993
- **DOT, ADR, IMDG, IATA**
  - DOT: Flammable liquids, n.o.s. (trans-2-Hexenol)
  - ADR: 1993 Flammable liquids, n.o.s. (trans-2-Hexenol)
  - IMDG, IATA: FLAMMABLE LIQUID, N.O.S. (trans-2-Hexenol)
| · Transport hazard class(es)                                                                 |
| · DOT                                                                                      |
|   · Class 3 Flammable liquids                                                              |
|   · Label 3                                                                               |
| · ADR                                                                                      |
|   · Class 3 (F1) Flammable liquids                                                        |
|   · Label 3                                                                               |
| · IMDG, IATA                                                                              |
|   · Class 3 Flammable liquids                                                              |
|   · Label 3                                                                               |
| · Packing group III                                                                        |
| · Environmental hazards:                                                                  |
|   · Marine pollutant:                                                                      |
|       No                                                                                  |
| · Special precautions for user                                                            |
|   · Warning: Flammable liquids                                                             |
|   · Danger code (Kemler): 30                                                                |
|   · EMS Number: F-E,S-D                                                                    |
| · 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                                                            |
### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - Substance is not listed.
    - **Section 313 (Specific toxic chemical listings):**
      - Substance is not listed.
  - **TSCA (Toxic Substances Control Act):**
    - Substance is listed.
  - **TSCA new (21st Century Act) (Substances not listed)**
    - CAS: 928-95-0 [trans-2-Hexenol](#)
  - **Proposition 65**
    - **Chemicals known to cause cancer:**
      - Substance is not listed.
    - **Chemicals known to cause reproductive toxicity for females:**
      - Substance is not listed.
    - **Chemicals known to cause reproductive toxicity for males:**
      - Substance is not listed.
    - **Chemicals known to cause developmental toxicity:**
      - Substance is not listed.
  - **Carcinogenic categories**
    - **EPA (Environmental Protection Agency)**
      - Substance is not listed.
    - **TLV (Threshold Limit Value established by ACGIH)**
      - Substance is not listed.
Safety Data Sheet
acc. to OSHA HCS

Trade name: Trans-2-Hexenol natural

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  Substance is not 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 substance is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms
  ![GHS02]

- Signal word Warning
- Hazard statements
  H226 Flammable liquid and vapor.

- 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.

- Department issuing SDS: Product Safety Department
- Contact:
  Product Safety Department
  productsafety@adv-bio.com
- Date of preparation / last revision 08/24/2018 / -
- 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
  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
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<th><strong>Trade name: Trans-2-Hexenol natural</strong></th>
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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