1 Identification

· Product identifier
  · Trade name: 2-Heptanol natural
  · Product number: 1422
  · CAS Number: 543-49-7
  · EC number: 208-844-3
· Application of the substance / the mixture: Food flavorings

· 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:
  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.

  GHS07
  Acute Tox. 4  H312 Harmful in contact with skin.
  Eye Irrit. 2A  H319 Causes serious eye irritation.

· 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: 2-Heptanol natural

- Hazard pictograms

GHS02 GHS07

- Signal word Warning

- Hazard-determining components of labeling:
  2-Heptanol

- Hazard statements
  H226 Flammable liquid and vapor.
  H312 Harmful in contact with skin.
  H319 Causes serious eye irritation.

- Precautionary statements
  P210 Keep away from heat/sparks/open flames/hot surfaces. - 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/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.

- 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

- Chemical characterization: Substances
- CAS No. Description
  543-49-7 2-Heptanol
- Identification number(s)
- EC number: 208-844-3
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. If symptoms persist, consult a doctor.
  - 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.
    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: 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:
      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.
    · 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.
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: 160 °C (320 °F)
- Flash point: 59 °C (138.2 °F)
- Flammability (solid, gaseous): Not applicable.
- Decomposition temperature: Not determined.
- Auto igniting: Not determined.
- Danger of explosion: Not determined.
- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapor pressure at 20 °C (68 °F): 1.33 hPa (1 mm Hg)
- Density at 20 °C (68 °F): 0.82 g/cm³ (6.8429 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.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
  - VOC content: 0.00 %
    - 0.0 g/l / 0.00 lb/gal

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Safety Data Sheet
acc. to OSHA HCS

Trade name: 2-Heptanol natural

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· 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 2,580 mg/kg (rat)
    Dermal| LD50 1,780 mg/kg (rabbit)

    CAS: 543-49-7 2-Heptanol
    
    Oral  | LD50 2,580 mg/kg (rat)
    Dermal| LD50 1,780 mg/kg (rabbit)

· Primary irritant effect:
  · on the skin: No irritant effect.
  · on the eye: 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.

    OSHA-Ca (Occupational Safety & Health Administration)
    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.
### 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**
  - DOT, ADR, IMDG, IATA: UN1993

- **UN proper shipping name**
  - DOT: Flammable liquids, n.o.s. (2-Heptanol)
  - ADR: 1993 FLAMMABLE LIQUID, N.O.S. (2-Heptanol)
  - IMDG, IATA: FLAMMABLE LIQUID, N.O.S. (2-Heptanol)

- **Transport hazard class(es)**
  - DOT, IMDG, IATA
    - **Class:** 3 Flammable liquids
    - **Label:** 3

- **ADR**
  - **Class:** 3 (F1) Flammable liquids
  - **Label:** 3

- **Packing group**
  - DOT, ADR, IMDG, IATA: III
### 15 Regulatory information

| 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: 543-49-7 2-Heptanol |
| Proposition 65 | |
| Chemicals known to cause cancer: | Substance is not listed. |
| Chemicals known to cause reproductive toxicity for females: | Substance is not listed. |

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### 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.

- **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
- GHS07

### Signal word

**Warning**

### Hazard-determining components of labeling:

- **2-Heptanol**

### Hazard statements

- **H226** Flammable liquid and vapor.
- **H312** Harmful in contact with skin.
- **H319** Causes serious eye irritation.

### Precautionary statements

- **P210** Keep away from heat/sparks/open flames/hot surfaces. - 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/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.

### Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

### 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
**Trade name: 2-Heptanol natural**

- **Contact:**
  Product Safety Department
  productsafety@adv-bio.com

- **Date of preparation / last revision:** 02/11/2019 / -

- **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
  - 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
  - Acute Tox. 4: Acute toxicity – Category 4
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A