1 Identification

- **Product identifier**
- **Trade name:** Methyl Isobutyrate natural
- **Product number:** 1582
- **CAS Number:** 547-63-7
- **EC number:** 208-929-5
- **Application of the substance / the mixture** Food flavorings

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS02 Flame
  - Flam. Liq. 2 H225 Highly 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).
- **Hazard pictograms**
  - GHS02

- **Signal word** Danger
Trade name: Methyl Isobutylate natural

- **Hazard statements**
  - H225 Highly 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 = 4
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 4
    - 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**
  - 547-63-7 methyl isobutyrate
- **Identification number(s)**
- **EC number:** 208-929-5

### 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.
  - PAC-3: 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: Store in a cool location.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions:
    - Keep receptacle tightly sealed.
    - Store in cool, dry conditions in well sealed receptacles.
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.
- 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: 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:** -84.65 °C (-120.4 °F)
- **Boiling point/Boiling range:** 92.3 °C (198.1 °F)
- **Flash point:** 14 °C (57.2 °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 at 20 °C (68 °F):** 49 hPa (36.8 mm Hg)
- **Density at 20 °C (68 °F):** 0.89 g/cm³ (7.42705 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**
- **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:
  - CAS: 547-63-7 methyl isobutyrate
  - Oral LD50 16,000 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:
- 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.
- 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.
14 Transport information

| · UN-Number               | UN3272 |
| · DOT, ADR, IMDG, IATA   |        |

| · UN proper shipping name | Esters, n.o.s. (methyl isobutyrate) |
| · DOT                    | 3272 ESTERS, N.O.S. (methyl isobutyrate) |
| · ADR, IMDG, IATA        | ESTERS, N.O.S. (methyl isobutyrate) |

| · 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 |
| · Class         | II |

| · Environmental hazards: | Marine pollutant: |
| · No |

| · Special precautions for user | Warning: Flammable liquids |
| · Danger code (Kemler): | 33 |
| · EMS Number: | F-E,S-D |
| · Stowage Category | B |

| · 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: - |
| | On cargo aircraft only: - |
## 15 Regulatory information

### ADR
- Code: E2
- Excepted quantities (EQ)
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml

### UN "Model Regulation":
- UN 3272 ESTERS, N.O.S. (METHYL ISOBUTYRATE), 3, II

### 15.1 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: 547-63-7 methyl isobutyrate

#### 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.

- **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).
Trade name: Methyl Isobutyrate natural

· Hazard pictograms

GHS02

· Signal word Danger
· Hazard statements
H225 Highly 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 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. 2: Flammable liquids – Category 2