# Safety Data Sheet
## acc. to OSHA HCS

Printing date 02/11/2019 Reviewed on 02/08/2019

## 1 Identification

· **Product identifier**

· **Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

· **Product number:** 4040
· **CAS Number:**
3188-00-9
· **EC number:**
221-685-4
· **Application of the substance / the mixture** Food flavorings

· **Details of the supplier of the safety data sheet**
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· **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.

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· **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** Warning

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**Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

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· **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 = 0
Fire = 2
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**
3188-00-9 2-methyltetrahydrofuran-3-one
· **Identification number(s)**
· **EC number:** 221-685-4

## 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.



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## 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:**
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.

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· **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.
· **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. |

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**Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

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| | |
|---|---|
| · **Change in condition** | |
| **Melting point/Melting range:** | Undetermined. |
| **Boiling point/Boiling range:** | 139 °C (282.2 °F) |
| · **Flash point:** | 39 °C (102.2 °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:** | 0.9 Vol % |
| **Upper:** | 8.4 Vol % |
| · **Vapor pressure:** | Not determined. |
| · **Density at 20 °C (68 °F):** | 1.035 g/cm³ (8.63707 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 %<br>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:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.

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· **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 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** | |
| · **DOT, ADR, IMDG, IATA** | UN1224 |
| · **UN proper shipping name** | |
| · **DOT** | Ketones, liquid, n.o.s. (2-methyltetrahydrofuran-3-one) |

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**Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

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| | |
|---|---|
| · **ADR** | 1224 KETONES, LIQUID, N.O.S. (2-methyltetrahydrofuran-3-one) |
| · **IMDG, IATA** | KETONES, LIQUID, N.O.S. (2-methyltetrahydrofuran-3-one) |
| · **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 |
| · **Environmental hazards:** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Warning: Flammable liquids |
| · **Danger code (Kemler):** | 30 |
| · **EMS Number:** | F-E,S-E |
| · **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<br>On cargo aircraft only: 220 L |
| · **ADR** | |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| · **IMDG** | |
| · **Limited quantities (LQ)** | 5L |
| · **Excepted quantities (EQ)** | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |

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**Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

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| | |
|---|---|
| · **UN "Model Regulation":** | UN 1224 KETONES, LIQUID, N.O.S. (2-METHYLTETRAHYDROFURAN-3-ONE), 3, III |

## 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: 3188-00-9 | 2-methyltetrahydrofuran-3-one |

· **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).

· **Hazard pictograms**

GHS02

· **Signal word** Warning

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**Trade name: 2-Methyl Tetrahydrofuran-3-one synthetic**

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· **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** 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)
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



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