

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

## 1 Identification

- **Product identifier**
- **Trade name: Acetoin powder natural**
- **Product number:** 1432
- **CAS Number:**  
513-86-0
- **EC number:**  
208-174-1
- **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. Sol. 2 H228 Flammable solid.

- **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

(Continued on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

**Trade name: Acetoin powder natural**

(Continuation of page 1)

- **Hazard statements**  
H228 Flammable solid.
- **Precautionary statements**  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.

· **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**  
513-86-0 Acetoin
- **Identification number(s)**
- **EC number:** 208-174-1

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **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.

(Continued on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

**Trade name: Acetoin powder natural**

(Continuation of page 2)

- **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:** 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.
- **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.

(Continued on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

**Trade name: Acetoin powder natural**

(Continuation of page 3)

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** 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:** Not required.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Crystalline  
   **Color:** According to product specification

· **Odor:** According to product specification

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

**Melting point/Melting range:** Undetermined.  
   **Boiling point/Boiling range:** 148 °C (298.4 °F)

· **Flash point:** 45 °C (113 °F)

· **Flammability (solid, gaseous):** Product is not flammable.

· **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.

(Continued on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

Trade name: Acetoin powder natural

(Continuation of page 4)

· <b>Vapor pressure:</b>	Not applicable.
· <b>Density at 20 °C (68 °F):</b>	0.997 g/cm <sup>3</sup> (8.31997 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	Not applicable.
· <b>Kinematic:</b>	Not applicable.
· <b>VOC content:</b>	0.00 % 0.0 g/l / 0.00 lb/gal
· <b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
Exposure to heat and temperatures equivalent to cooking or higher may cause the release of diacetyl which may cause lung damage if repeatedly inhaled.
- **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:** Diacetyl
- **Additional information:**  
Exposure to heat and temperatures equivalent to cooking or higher may cause the release of diacetyl which may cause lung damage if repeatedly inhaled.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

**CAS: 513-86-0 Acetoin**

Oral	LD50	>50,000 mg/kg (rat)
Dermal	LD50	>50,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Continued on page 6)

**Safety Data Sheet**  
 acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

Trade name: Acetoin powder natural

(Continuation of page 5)

- **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 (Assessment by list): 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.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- |                                  |   |
|----------------------------------|---|
| · <b>UN-Number</b>               |   |
| · <b>DOT, ADR, IMDG, IATA</b>    | UN1325  |
| · <b>UN proper shipping name</b> |   |
| · <b>DOT</b>                     | Flammable solids, organic, n.o.s. (Acetoin)     |
| · <b>ADR</b>                     | 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (Acetoin) |
| · <b>IMDG, IATA</b>              | FLAMMABLE SOLID, ORGANIC, N.O.S. (Acetoin)      |

(Continued on page 7)

**Safety Data Sheet**  
 acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

Trade name: Acetoin powder natural

(Continuation of page 6)

· Transport hazard class(es)

· DOT, IMDG, IATA



· Class

4.1 Flammable solids, self-reactive substances and solid desensitized explosives

· Label

4.1

· ADR



· Class

4.1 (F1) Flammable solids, self-reactive substances and solid desensitized explosives

· Label

4.1

· Packing group

· DOT, ADR, IMDG, IATA

III

· Environmental hazards:

· Marine pollutant:

No

· Special precautions for user

Warning: Flammable solids, self-reactive substances and solid desensitized explosives

· Danger code (Kemler):

30

· EMS Number:

F-A,S-G

· 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: 25 kg  
 On cargo aircraft only: 100 kg

· ADR

· Excepted quantities (EQ)

Code: E1  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 1000 g

· IMDG

· Limited quantities (LQ)

5 kg

· Excepted quantities (EQ)

Code: E1  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 1000 g

(Continued on page 8)



**Safety Data Sheet**  
 acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

**Trade name: Acetoin powder natural**

(Continuation of page 7)

· **UN "Model Regulation":** UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (ACETOIN), 4.1, 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.

· **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

· **Hazard statements**

H228 Flammable solid.

(Continued on page 9)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/11/2019

Reviewed on 02/08/2019

**Trade name: Acetoin powder natural**

(Continuation of page 8)

· **Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.

· **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 / 1

· **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. Sol. 2: Flammable solids – Category 2