



# Beta Acid Oil

## Safety Data Sheet

### 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

**1.1 Product Identifier**                      **Beta Acid Oil**

**1.2 Synonyms**                                **BAO, Beta acid-enriched hop extract**

**1.3 Relevant Uses**                            For use as an ingredient in the brewing of beer.

**1.4 Supplier**                                 **BarthHaas / BarthHaas UK Ltd.**

**1.5 Emergency Contact**                      Hop Pocket Lane, Paddock Wood, Kent, TN12 6DQ, UK  
**Details**    Emergency phone: +44 1892 833 415 (09:00 – 17:30 Mon-Thurs; 09:00 – 16:30 Fri, UK time)  
Email: [enquiries@barthhaas.co.uk](mailto:enquiries@barthhaas.co.uk)



## 2. HAZARD IDENTIFICATION

### 2.1 Classification

According to Regulation (EC) 1272/2008 [CLP]:

- Skin Sensitization Category 1
- Skin Irritation Category 2
- Eye Irritation Category 2
- Acute toxicity (oral) Category 4
- Acute toxicity (dermal) Category 4

### 2.2 Label Elements

According to Regulation (EC) 1272/2008 [CLP]:

- **Hazard Pictogram**



- **Signal Word:**

- **Warning**

- **Hazard Statement**

- H302 Harmful if swallowed
- H312 Harmful in contact with skin
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation

- **Precautionary Statement**

- P301+P312: IF SWALLOWED: Call a Poison Centre/Doctor if you feel unwell
- P280: Wear protective gloves and eye protection
- P302+P352: IF ON SKIN: Wash with plenty of soap and water
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
- P264 Wash hands thoroughly after handling

### 2.3 Other Hazards

None

## 3. COMPONENTS/INFORMATION ON INGREDIENTS

### Components

The product is a mixture of bitter and aroma substances, extracted from the dried cones of the cultivated hop plant *Humulus lupulus*.

Hop Extract, CAS: 8060-28-4

EINECS No . 232-504-3

REACH Registration no. 01-2120766018-52-0000



## 4. FIRST AID MEASURES

### 4.1 Description of First

#### Aid Methods:

- **Inhalation**
  - **Skin Contact**
  - **Eye Contact**
  - **Oral Ingestion**
- Move to fresh air
  - Wash skin thoroughly with soap and water. If any symptoms persist obtain medical attention.
  - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
  - Rinse mouth out with water and drink a portion of water (ca. 200ml). Vomiting may occur but should not be induced. Obtain medical attention if symptoms persist.

### 4.2 Most important symptoms and Effects

See labelling (Section 2.2) and Section 11.

### 4.3 Indications of Immediate Medical

No data available

## 5 FIRE AID MEASURES

**5.1 Extinguishing Media** Carbon dioxide, dry powder, foam.

**5.2 Special Hazards Arising from Substance** Contains hop oil. Hop oil is combustible any may give rise to hazardous fumes in a fire

**5.3 Advice for Firefighters** Fire fighters should wear self-contained positive pressure breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal Protection** Wear appropriate protective clothing – see Section 8.

**6.2 Environmental Precautions** Avoid sub-soil penetration. Prevent entry to sewers and public waters. Do not discharge onto the ground or into watercourses.

**6.3 Methods for Cleaning Up** Contain spillage using earth, sand or other inert material. Transfer to suitable sealed container prior to disposal. Flush area with hot soapy water to remove final traces. Use adequate ventilation or a respirator if in a confined area.



## 7. HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

Avoid excessive contact with product. Use appropriate protective clothing as indicated in Section 8. Wash hands after use.

### 7.2 Conditions for Safe Storage

Store at 0 – 5 °C (32 – 41 °F). Suitable storage is high grade stainless steel, glass, high-density polyethylene and high phenolic lacquered mild steel

### 7.3 Specific End Uses

For use as a food ingredient. It should be used in accordance with applicable food legislation.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control Parameters

Not applicable.

### 8.2 Exposure Controls:

- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>- <b>Engineering Controls</b></li><li>- <b>Eye/Face Protection</b></li><li>- <b>Hand Protection</b></li><li>- <b>Skin Protection</b></li><li>- <b>Respiratory Protection</b></li></ul> | <ul style="list-style-type: none"><li>- Provide adequate ventilation.</li><li>- Chemical goggles must be worn during handling.</li><li>- PVC, rubber, latex or nitrile gloves</li><li>- If danger of splashing wear PVC or rubber apron.</li><li>- Not normally required</li></ul> |
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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>a) Physical state</b>	Resinous paste
<b>b) Color</b>	Dark yellow to brown
<b>c) Odor</b>	Characteristic, typical hoppy, resinous aroma
<b>d) Melting point/Freezing point</b>	No clear melting point. Becomes fluid at 40 – 60 °C (104 – 140 °F), depending on Variety
<b>e) Boiling point</b>	No data available. Hop extract: no clear boiling point – decomposes before boiling
<b>f) Flammability</b>	Non flammable
<b>g) Lower and upper explosion limit</b>	Not practical to measure
<b>h) Flash point</b>	Hop extracts containing hop oils have a flash point of ca. 80 °C (176 °F) or above, depending on variety
<b>i) Auto-ignition temperature</b>	Not practical to measure
<b>j) Decomposition temperature</b>	Not practical to measure
<b>k) pH</b>	Not practical to measure
<b>l) Kinematic viscosity</b>	Not practical to measure – available on request
<b>m) Solubility</b>	Insoluble; forms an emulsion.
<b>n) Partition coefficient n-octanol/water (log value)</b>	LogP <sub>ow</sub> : Hop extract contains components with Log P values of 3 – 7 at pH 7
<b>o) Vapor pressure</b>	Not practical to measure



- p) Density [kg/m<sup>3</sup>]** Ca. 1000
- q) Relative vapor density** Not practical to measure
- r) Particle characteristics** Not practical to measure

## 10. STABILITY AND REACTIVITY

- 10.1 Reactivity** No reactivity hazards known.
- 10.2 Chemical Stability** Stable if stored according to Section 7.2 and 10.5
- 10.3 Possibility of Hazardous Reaction** None known
- 10.4 Conditions to Avoid** Keep container closed when not in use; high temperatures
- 10.5 Incompatible Materials** None known
- 10.6 Hazardous Decomposition Products** None known



## 11. TOXICOLOGICAL INFORMATION

<b>11.1 Acute Toxicity</b>	Beta-acid enriched hop extracts containing 30 - 70% $\beta$ -acids have an estimated ATE value (oral, dermal) of 1,000 - 2,300 mg per kg bw. This signifies classification under Category 4 for Acute Toxicity, oral and dermal, according to Regulation (EC) 1272/2008.
<b>11.2 Skin Corrosion/Irritation</b>	Skin Irritation Category 2
<b>11.3 Serious Eye Damage/Irritation</b>	Eye Irritation Category 2
<b>11.4 Respiratory or Skin Sensitization</b>	Skin Sensitisation Category 1
<b>11.5 Germ Cell Mutagenicity</b>	OECD Guideline 471 (Bacterial Reverse Mutation Assay) mutagenic Bacterial reverse Mutations Assay on 40% beta-acids: not mutagenic
<b>11.6 Carcinogenicity</b>	Hop extracts have a long history of safe use as a component of beer. Bacterial reverse mutation assay: not mutagenic.
<b>11.7 Reproductive Toxicity</b>	Weight of evidence indicates lack of reproductive toxicity. Long history of safe use as a component of beer. Hop extracts are generally recognised as safe (GRAS) in accordance with US FDA regulation 21 CFR 182.20.
<b>11.8 STOT- Single Exposure</b>	Weight of evidence indicates safety when used for its intended use - see (11.7) above.
<b>11.9 STOT-Repeated Exposure</b>	Weight of evidence indicates safety when used for its intended use - see (11.7) above.
<b>11.10 Aspiration Hazard</b>	Not an aspiration hazard.



## 12. ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity

Toxicity to fish:

- *Carassius auratus* (goldfish) - Etude pharmacologique de l'action du lupulin et de la fleur d'organer sur le poisson. *Pharmaceutica acta Helvetiae* (1953) **28**(7-8), pp.183-206: lowest dose causing adverse effects estimated by calculation as ca. 80 mg/l.

Toxicity to Daphnia and other aquatic invertebrates:

- EC50 - *Daphnia magna* (Water flea) - >5.8 mg/l - 48 h.
- NOEC - *Daphnia magna* - ca. 2.2 mg/l - 48 h.

Toxicity to freshwater algae:

- EC50 - 42.7 mg/l - 48 h
- NOEC - 12.5 mg/l - 72 h

### 12.2 Persistence and Degradability

Ultimate biodegradation (natural product).

### 12.3 Bioaccumulative Potential

Natural product, not expected to bioaccumulate.

### 12.4 Mobility in Soil

Log Koc 1.7 - <4.5 (modelling by EPISuite™)

Other information: low hazardous to water

Water contaminant class 1 (self assessment) according to VwVwS from May 17th 1999 appendix 3. Do not discharge onto the ground or into watercourses.

### 12.5 Results of PBT Exposure:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other Adverse Effects Exposure

No data available

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Product Disposal

Dispose in accordance with all applicable local and national regulations.

### 13.2 Container Disposal

Labels should not be removed from containers until they have been cleaned. Contaminated containers should not be treated as household waste. Containers should be cleaned using appropriate methods and then re-used or disposed of by landfill or incineration as appropriate.





## 14. TRANSPORT INFORMATION

**14.1 UN-Number** Non-hazardous for transport

**14.2 Shipping Name** Non-hazardous for transport

**14.3 Transport Hazard Class** N/A

**14.4 Packing Group** Non-hazardous for transport

**14.5 Marine Pollutant** No data available

## 15. REGULATORY INFORMATION

**15.1 Safety, Health, and Environmental Regulations** Germany: Water contaminant class 1 (self assessment) according to VwVwS from May 17th 1999 appendix 3. Do not discharge onto the ground or into watercourses.

**15.2 Chemical Safety Assessments** N/A when used for food applications

## 16. OTHER INFORMATION

(b) Key literature references and sources for data:

- REACH registration dossier for EC 232-504-3

(c) Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

- Skin Irritation Category 2: *in vitro* test data for REACH registration dossier for EC 232-504-3
- Eye Irritation Category 2: *in vitro* test data for REACH registration dossier for EC 232-504-3
- Skin Sensitisation Category 1: *in vitro* test data for REACH registration dossier for EC 232-504-3

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