# HopHaze™

## Safety Data Sheet

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

| | |
|---|---|
| **1.1 Product Identifier** | **HopHaze™** |
| **1.2 Synonyms** | |
| **1.3 Relevant Uses** | Food processing aid |
| **1.4 Supplier** | **John I. Haas** |
| **1.5 Emergency Contact Details** | **BarthHaas / John I. Haas, Inc.**<br>1600 River Rd., Yakima, WA 98902, USA.<br>Emergency phone: +1 509 469 4000 (office hours)<br>Email: info@johnihaas.com |

## 2. HAZARD INDENTIFCATION

**2.1 Classification**

Classification according to Regulation (EC) No 1272/2008 [CLP]:

- Skin Irritation Category 2
- Eye Irritation Category 2
- Skin Sensitisation Category 1

**2.2 Label Elements**

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

- **Hazard Pictogram**

- **Signal Word:**
  - Warning
- **Hazard Statemenet**
  - H315: Causes skin irritation
  - H317: May cause an allergic skin reaction
  - H319: Causes serious eye irritation
- **Precautionary Statement**
  - 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.

**2.3 Other Hazards**

None

## 3. COMPONENTS/INFORMATION ON INGREDIENTS

| **Components** | Concentration (% m/m) | CAS. No | EC. No | Classification according to Regulation (EC) 1272/2008 [CLP] |
|---|---|---|---|---|
| **Fraction of hop extract** | 10 | 468-28-0 | 207-405-3 | Acute Tox. 4 H302, H312<br>Skin Irritation Category 2<br>Eye Irritation Category 2<br>Skin Sensitization Category 1 |

## 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
- Flood the eye with plenty of water. If any symptoms persist obtain medical attention.
- 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**

Skin and eye irritation

**4.3 Indications of Immediate Medical**

Action as indicated in Section 4.1 above

## 5 FIRE AID MEASURES

**5.1 Extinguishing Media**

Carbon dioxide, dry powder, foam.

**5.2 Special Hazards Arising from Substance**

The product is an aqueous solution and is therefore not expected to burn.
No known unusual fire or explosion hazards

**5.3 Advice for Firefighters**

Fire fighters should wear self-contained positive pressure breathing apparatus.

## 6. ACCDIENTAL RELEASE MEASURES

**6.1 Personal Protection**

Wear appropriate protective clothing – see Section 8.

**6.2 Environmental Precautions**

Small amounts (< 10 liters) can be safely diluted with water and flushed into the drain. Do not discharge large amounts onto the ground or into watercourses – hold for disposal, or in the case of spillages, deal with this as indicated in Section 6.3

**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 5 – 25 °C (41 – 77 °F). Keep container closed, out of direct sunlight and prevent from freezing.

**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:**

- **Engineering Controls** – Not required.
- **Eye/Face Protection** – Safety googles.
- **Hand Protection** – PVC, rubber, latex, or nitrile gloves are all suitable and should be used.
- **Skin Protection** – Not normally required. Long-sleeved workwear recommended to avoid accidental skin contact.
- **Respiratory Protection** – Not normally required

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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|---|---|
| **a) Physical state** | Liquid |
| **b) Color** | Amber/Brown |
| **c) Odor** | Slight hop aroma |
| **d) Melting point/Freezing point** | Not practical to measure/ < 0 °C |
| **e) Boiling point** | 93 – 104 °C (200 – 220 °F) |
| **f) Flammability** | Not practical to measure |
| **g) Lower and upper explosion limit** | Not practical to measure |
| **h) Flash point** | Not practical to measure |
| **i) Auto-ignition temperature** | Not practical to measure |
| **j) Decomposition temperature** | Not practical to measure |
| **k) pH** | Not practical to measure |
| **l) Kinematic viscosity** | Ca. 5 mPas at 20 °C |
| **m) Solubility** | Dilution can lead to participation. |
| **n) Partition coefficient n-octanol/water (log value)** | $LogP_{ow}$: for purified active component is 4 – 5.5 at pH 7 |
| **o) Vapor pressure** | Vapor pressure of fraction of hop extract is *ca.* 6 x $10^{-11}$ Pa |

| | |
|---|---|
| **p) Density [kg/m³]** | Not practical to measure |
| **q) Relative vapor density** | Not applicable – low vapor pressure *ca*. 1,020 |
| **r) Particle characteristics** | Not practical to measure |

## 10. STABILITY AND REACTIVITY

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|---|---|
| **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** | Avoid strong oxidizing agents. Precipitation may occur on mixing with any material. |
| **10.5 Incompatible Materials** | Precipitation may occur on mixing with any material. |
| **10.6 Hazardous Decomposition Products** | None known |

## 11. TOXICOLOGICAL INFORMATION

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|---|---|
| **11.1 Acute Toxicity** | At concentration present, the material is not classified as hazardous. Estimated ATE values (oral, dermal) are 7000 mg/kg bw for a 10% m/m solution. |
| **11.2 Skin Corrosion/Irritation** | Hop extracts are classified as skin irritant according to OECD Guideline 439 (In vitro skin irritation). Therefore, a mixture containing 10% hop extract will be classified as Skin Irritation Category 2. |
| **11.3 Serious Eye Damage/Irritation** | HopHaze™ [10% m/m solution of hop extract in water] is classified as Eye Irritation Category 2 as a precaution based on skin irritation results and based on pH 10 – 11.5 (see Section 9). |
| **11.4 Respiratory or Skin Sensitization** | HopHaze™ is classified for skin sensitization by reading across from Hop Extract (EC 232-504-3), which is classified as a skin sensitizer to in vitro methods. Fractions of hop extract are present >1% HopHaze™, hence HopHaze™ is classified as Skin Sensitization Category 1. The vapor pressure of hop extract is very low: $6 \times 10^{-11}$ Pa (estimated by EPISuite™) and therefore respiratory sensitization is not applicable. |
| **11.5 Germ Cell Mutagenicity** | OECD Guideline 471 (Bacterial Reverse Mutation Assay) on read-across substance Hop Extract EC 232-504-3: not mutagenic. Bacterial reverse Mutations Assay on 40% hop extract: not mutagenic |
| **11.6 Carcinogenicity** | Hop acids are a natural component of hop extract. A dossier supporting GRAS status for hop acids as antimicrobial agents for frankfurters, cooked meats and poultry products sold ready-to-eat is available in the public domain. Hop acids are approved for use in France as a processing aid in the production of yeast, sugar and bioethanol Bacterial reverse mutation assay: not mutagenic |
| **11.7 Reproductive Toxicity** | Weight of evidence indicates lack of reproductive toxicity.<br>See 11.6 |
| **11.8 STOT- Single Exposure** | Weight of evidence indicates safety when used for its intended use.<br>See (11.6) above. |
| **11.9 STOT-Repeated Exposure** | Weight of evidence indicates safety when used for its intended use.<br>See (11.6) above. |
| **11.10 Aspiration Hazard** | Not an aspiration hazard. |

## 12. ECOLOGICAL INFORMATION

**12.1 Ecotoxicity**

Read across from hop extract EC 232-504-3, 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:
Active component of HopHaze™, hop acids:
EC50 - Daphnia magna (Water flea) – 1.87 mg/l - 48 h.
NOEC – Daphnia magna (Water flea) – 1.54 mg/L – 48 h.
Toxicity to freshwater algae:
Active component of HopHaze™, Hop-acids:
ErC50 - *Pseudokirchneriella subcapitata* strain: CCAP 278/4 – 18.57 mg/l - 72 h.
NOEC - *Pseudokirchneriella subcapitata* strain: CCAP 278/4 – 0.992 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 $K_{oc}$ 2.7 – 2.9 (modelling by EPISuite™)

**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

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|---|---|
| **14.1 UN-Number** | Not listed |
| **14.2 Shipping Name** | N/A |
| **14.3 Transport Hazard Class** | Non-hazardous for transport |
| **14.4 Packing Group** | Not listed |
| **14.5 Marine Pollutant** | Not listed |
| **14.6 Special Precautions** | Not required |

## 15. REGULATORY INFORMATION

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|---|---|
| **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.<br>Wassergefährdungsklasse:<br>WGK1 (Selbsteinstufung): schwach wassergefährdend<br>Gemäß Anhang 3 der Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) vom 17.05.1999 Kenn-Nr.: 6390 |
| **15.2 Chemical Safety Assessments** | N/A – for food use. |

## 16. OTHER INFORMATION

(a) Key literature references and sources for data:

REACH registration dossier for EC 305-203-0

(b) Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:
Skin Irritation Category 2: On basis of test data and read-across from similar substance, together with bridging principle "dilution"

Eye Irritation Category 2: On basis of expert judgment and read-across from similar substance, together with bridging principle "dilution"

Skin Sensitization Category 1: On basis of expert judgment and read-across from similar substance, together with bridging principle "dilution"

The information in this safety data sheet is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on our present knowledge and should be used only as a supplement to information already in your possession concerning this product. It does not represent any guarantee of the properties of the product. The determination of whether and under what condition the product should be used is yours to make. We do not accept any liability for loss, injury or damage that may result from its use.