FLEX®

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product Identifier FLEX®

1.2 Synonyms Flowable Hop Bittering Product

1.3 Relevant Uses For use as an ingredient in the brewing of bee

1.4 Supplier **BarthHaas / John I. Haas, Inc.**

1.5 Emergency Contact Details

BarthHaas / John I. Haas, Inc.

1600 River Rd., Yakima, WA 98902, USA.

Emergency phone: +1 509 469 4000 (office hours)

Email: info@johnihaas.com

2. HAZARD INDENTIFCATION

2.1 Classification Not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.2 Label Elements N/A (not classified)

2.3 Other Hazards This product is a natural product produced from hops for use as an ingredient for the brewing of beer. Ingestion of a large dose may cause irritation of mouth, throat and digestive tract. The product may cause eye irritation and prolonged handling may cause dermatitis

3. COMPONENTS/INFORMATION ON INGREDIENTS

The product is a mixture of bittering and aroma substances produced from the dried cones of the cultivated hop plant Humulus lupulus.

CAS: 8060-28-4

EINECS No. 232-504-3

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
- Drink large amounts of water to dilute. Vomiting may occur but should not be induced. Obtain medical attention if symptoms persist.

4.2 Most important symptoms and Effects

May cause irritation of eyes if in contact with eyes.

4.3 Indications of Immediate Medical

None known

5 FIRE AID MEASURES

5.1 Extinguishing Media

Carbon dioxide, dry powder, foam.

5.2 Special Hazards Arising from Substance

Some components of FLEX® are combustible and 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. ACCDIENTAL RELEASE MEASURES

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

6.2 Environmental Precautions 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 13 – 24 °C (55 – 75 °F). Suitable storage is high grade stainless steel glass, high-density polyethylene and high phenolic lacquered mild steel.

7.3 Specific End Uses The substance is manufactured for use as a food ingredient and for such uses is not to registration via REACH (Regulation (EC) No.1907/2006). 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** – Provide adequate ventilation.
- **Eye/Face Protection** – Chemical goggles must be worn during handling.
- **Hand Protection** – PVC, rubber, latex or nitrile gloves
- **Skin Protection** – If danger of splashing wear PVC or rubber apron
- **Respiratory Protection** – Not normally required

9. PHYSICAL AND CHEMICAL PROPERTIES

a) Physical state	Viscous liquid
b) Color	light amber to yellow
c) Odor	Characteristic, typical hoppy, resinous aroma
d) Melting point/Freezing point	Not practical to measure
e) Boiling point	Not practical to measure
f) Flammability	Not practical to measure
g) Lower and upper explosion limit	Not practical to measure
h) Flash point	> 60 °C
i) Auto-ignition temperature	Not practical to measure
j) Decomposition temperature	Not practical to measure
k) pH	Not practical to measure
l) Kinematic viscosity	Typically in the range of 1400 - 1700 mPa-s at 22 °C
m) Solubility	Insoluble; forms an emulsion
n) Partition coefficient n-octanol/water (log value)	Not practical to measure
o) Vapor pressure	Not practical to measure

p) Density [kg/m³]	800 – 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
10.3 Possibility of Hazardous Reaction	None known
10.4 Conditions to Avoid	Keep container closed when not in use
10.5 Incompatible Materials	None known
10.6 Hazardous Decomposition Products	None known

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity	No data available. Hops and hop extracts are generally recognized as safe (GRAS) for their intended use in accordance with US FDA regulation, 21 CFR 170.30(c) and 170.3(f). Supported by a long history of safe use in brewing
11.2 Skin Corrosion/Irritation	No data available
11.3 Serious Eye Damage/Irritation	No data available
11.4 Respiratory or Skin Sensitization	No data available
11.5 Germ Cell Mutagenicity	No data available
11.6 Carcinogenicity	No data available
11.7 Reproductive Toxicity	No data available
11.8 STOT- Single Exposure	No data available
11.9 STOT-Repeated Exposure	No data available
11.10 Aspiration Hazard	No data available

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity	No data available
12.2 Persistence and Degradability	No data available
12.3 Bioaccumulative Potential	No data available
12.4 Mobility in Soil	No data available
12.5 Results of PBT Exposure:	No data available
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	N/A
14.3 Transport Hazard Class	Non-hazardous for transport
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	No data available
15.2 Chemical Safety Assessments	No data available

16. OTHER INFORMATION

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.