

Kettle Redi®

Kettle Redi® is not classified as a dangerous product according to European Union legislation, and it is used as a flavoring for food, for example in the brewing of beer. However, this safety data sheet is provided voluntarily according (as appropriate) to the principles of the Classification, Labelling and Packaging Regulations (Regulation (EC) No. 1272/2008).

Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Product Identifier **Kettle Redi®**

1.2 Synonyms

1.3 Relevant Uses Food use: for use as a processing aid for brewing beer

1.4 Supplier **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 IDENTIFICATION

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 Statement**

- 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

This product is a bittering ingredient for beer. It is therefore extremely bitter. Ingestion of a large dose may cause irritation of mouth, throat and digestive tract.



3. COMPONENTS/INFORMATION ON INGREDIENTS

Component	Concentration (% m/m)	CAS no.	EINECS no.
Rho-isohumulones	40 +/- 2 %	25522-96-7	-
Hop extract	Balance	8060-28-4	232-504-3

4. FIRST AID MEASURES

4.1 Description of First

Aid Methods:

- **Inhalation**
- **Skin Contact**
- **Eye Contact**
- **Oral Ingestion**

- Rinse nose and mouth with water. Obtain medical attention if discomfort continues.
- Wash skin thoroughly with soap and water
- Wash eye with plenty of water. Obtain medical attention if irritation persists.
- Rinse mouth out with water and drink a portion of water (ca. 200 ml). Vomiting may occur but should not be induced. Consult a physician if any 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** Contains hop oil. Hop oil is combustible and may give rise to hazardous fumes in a fire
- 5.3 Advice for Firefighters** Wear self-contained 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.

7. HANDLING AND STORAGE

- 7.1 Precautions for Safe Handling** Use appropriate protective clothing as indicated in Section 8. Wash hands after use
- 7.2 Conditions for Safe Storage** Store at 4 – 10 °C (39 – 50 °F). Keep container closed. Store in original container. Do not allow to freeze. Opened containers should be used within a few days.
- 7.3 Specific End Uses** For use as a food ingredient. It should be used in accordance with applicable legislation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1 Control Parameters** Not applicable.
- 8.2 Exposure Controls:**
- **Engineering Controls** - Provide adequate ventilation.



- | | |
|---------------------------------|--|
| - Eye/Face Protection | - Safety glasses if danger of splashing. |
| - Hand Protection | - PVC, rubber or nitrile gloves if danger of splashing |
| - Skin Protection | - If danger of splashing, wear PVC or rubber apron |
| - Respiratory Protection | - Not required |

9. PHYSICAL AND CHEMICAL PROPERTIES

- | | |
|---|---|
| a) Physical state | Thick liquid (some separation may occur) |
| b) Color | Amber/brown |
| c) Odor | Slight odor of hops |
| d) Melting point/Freezing point | No clear melting point. Becomes fluid at 40 – 60°C (104 – 140°F), depending on variety. |
| e) Boiling point | No clear boiling point – decomposes before boiling |
| f) Flammability | Not flammable |
| g) Lower and upper explosion limit | Not practical to measure |
| h) Flash point | Hop extracts containing hop oils have a flash point of ca. 80 °C (176 °F) or above, depending on variety. |
| i) Auto-ignition temperature | Not practical to measure |
| j) Decomposition temperature | No hazardous decomposition when used for its intended use. |
| k) pH | Not practical to measure |
| l) Kinematic viscosity | approx. 1 – 3 Pas at 30 – 40 °C (86 – 104 °F) |
| 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]	900 - 1.100
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; avoid high temperatures.

10.5 Incompatible Materials None known

10.6 Hazardous Decomposition Products None known

11. TOXICOLOGICAL INFORMATION

Hop extracts have a long history of safe use as a beer ingredient. Substance has not been fully tested. Data below are for the ingredient hop extract. Read-across from data for isohumulones indicates the same hazard classifications for rho-isohumulones and for hop extract.

11.1 Acute Toxicity Typical hop extracts are not classified as hazardous. Estimated ATE values (oral, dermal) are > 2000 mg/kg bw.

11.2 Skin Corrosion/Irritation Skin irritation Category 2.

11.3 Serious Eye Damage/Irritation Eye irritation Category 2.

11.4 Respiratory or Skin Sensitization Skin Sensitization Category 1.

11.5 Germ Cell Mutagenicity OECD Guideline 471 (Bacterial Reverse Mutation Assay) not mutagenic. Bacterial Reverse Mutation Assay on 40 % rho iso alpha acids: not mutagenic.

11.6 Carcinogenicity Hop extracts have a long history of safe use as a component of beer. Bacterial reverse mutation assay: not mutagenic.

11.7 Reproductive Toxicity Weight of evidence indicates lack of reproductive toxicity. Long history of safe use as a component of beer. Hop extracts are generally recognized as safe (GRAS) in accordance with US FDA regulation 21 CFR 182.20.

11.8 STOT- Single Exposure Weight of evidence indicates safety when used for its intended use. See (11.7) above.

11.9 STOT-Repeated Exposure Weight of evidence indicates safety when used for its intended use. See (11.7) above.

11.10 Aspiration Hazard Not hazardous

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Substance has not been fully tested. Data below are for the ingredient hop extract. Read-across from data for isohumulones indicates the same hazard classifications for rho-isohumulones and for hop extract.

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

Hop extract: Ultimate biodegradation (natural product).

12.3 Bioaccumulative Potential

Hop extract: Natural product, not expected to bioaccumulate.

12.4 Mobility in Soil

Hop extract: 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 N/A

14.3 Transport Hazard Class Non-hazardous for transport

14.4 Packing Group Non-hazardous for transport

14.5 Marine pollutant: Not 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 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.