

## Note

Redihop® is not classified as dangerous products according to European Union legislation, and its use is as a food product 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).

## 1. Identification of the Substance and of the Company

1.1 Product Identifier:	<b>Redihop®</b>
Synonyms:	Reduced isomerized hop extract, Reduced Isohumulone, 'Rho', Dihydro-iso-alpha extract, Dihydro-iso-alpha-acids, Dihydroisohumulone
1.2 Relevant Uses:	For use as an ingredient in brewing of beer.
1.3 Supplier:	<b>BarthHaas / BarthHaas UK</b>
1.4 Emergency Contact Details:	Hop Pocket Lane, Paddock Wood, Kent, TN12 6DQ, UK Emergency phone: +44 1892 833 415 (09:00 - 17:30 Mon-Thurs; 09:00 - 16:30 Fri, UK time) Email: <a href="mailto:enquiries@barthhaas.co.uk">enquiries@barthhaas.co.uk</a>  <b>BarthHaas Group / John I. Haas, Inc.</b> 5185 MacArthur Boulevard, N.W., Suite 300, Washington DC, 20016 USA. Emergency phone: +1 202 777 4800 (office hours) Email: <a href="mailto:info@johnihaas.com">info@johnihaas.com</a>

## 2. Hazards Identification

2.1 Classification:	Not classified (Regulation (EC) No. 1272/2008) Not classified (Directive 67/548/EEC)
2.2 Label Elements	N/A (not classified)
2.3 Other Hazards:	This product is a bittering ingredient for beer. It is therefore extremely bitter, and it is mildly alkaline. Ingestion of a large dose may cause irritation of mouth, throat and digestive tract. Since the product is mildly alkaline, it may cause eye irritation if in contact with eyes.



3. Components/Information on Ingredients		
Component	Concentration	Hazard classification
Potassium salts of dihydro-isohumulones in aqueous solution	ca. 30%	Not classified
Water	Balance	Not classified

4. First Aid Measures	
4.1 Description of First Aid Methods:	<p><u>Inhalation:</u> None</p> <p><u>Skin contact:</u> Wash skin thoroughly with soap and water.</p> <p><u>Eye contact:</u> Flood the eye with plenty of water. If any symptoms persist obtain medical attention.</p> <p><u>Oral ingestion:</u> The product is extremely bitter and so it is very unlikely that anyone would ingest large amounts. Nevertheless, should this happen, drink large amounts of water to dilute. Vomiting may occur but should not be induced. Consult a physician if any symptoms persist.</p>
4.2 Most Important Symptoms and Effects	May cause irritation of eyes if in contact with eyes.
4.3 Indication of Immediate Medical Attention or Special Treatment	None known.

5. Fire-Fighting Measures	
5.1 Extinguishing Media:	Dry powder, foam, carbon dioxide or water
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:	Wear self contained breathing apparatus.

6. Accidental 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.

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 15 - 25 °C (60 - 77°F). Keep container closed. Use open containers as soon as possible. Store in original container or suitable high-grade stainless steel, low silicate glass or high-density polyethylene.
7.3 Specific End Uses:	The substance is a food ingredient and is therefore not subject 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	Not applicable.

Parameters:	
8.2 Exposure Controls:	<u>Engineering Controls:</u> Not required. <u>Eye/Face Protection:</u> Safety goggles. <u>Hand Protection:</u> PVC, rubber, latex or nitrile gloves. <u>Skin Protection:</u> If danger of splashing, wear a PVC or rubber apron. <u>Respiratory Protection:</u> Not required.
<b>9. Physical and Chemical Properties</b>	
Appearance:	Amber/reddish-brown liquid
Odour:	Hoppy, resinous
Odour Threshold:	No data available
pH:	8 - 11
Freezing Point:	No data available
Boiling Point:	93 - 104 °C (200 - 220 °F)
Flash Point:	Not applicable due to high water content
Evaporation Rate:	Not measured (high water content; substantial evaporation not expected at normal conditions)
Flammability:	Non flammable
Upper/Lower Flammability:	N/A
Vapour Pressure:	No data available
Vapour Density:	No data available
Density:	ca. 1,090 kg.m <sup>-3</sup>
Solubility in Water:	Miscible.
Partition Coefficient:	Miscible in water
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Viscosity at 20 °C:	Approx. 20 - 40 mPas at 20 °C (68 °F)
Explosive Properties:	None known
Oxidising Properties:	None known
<b>10. Stability and Reactivity</b>	
10.1 Reactivity:	No reactivity hazards known
10.2 Stability:	Stable under normal conditions, if stored in accordance with 7.2 and 10.5
10.4 Conditions to Avoid:	None known
10.5 Incompatible Materials	Will precipitate if acidified.
10.6 Hazardous Decomposition Products	None known



### 11. Toxicological Information

Substance contains modified hop extracts, which may be safely used in beer, e.g. in accordance with US FDA regulation 21 CFR 172.560. The substance has not been fully assessed.  
 Not considered harmful by ingestion (see 4.1; the product is extremely bitter).  
 Not considered harmful in contact with skin, but observe precautions in section 8.2. May cause slight skin irritation due to its alkaline nature, but does not require classification as an irritant.  
 May cause slight eye irritation due to its alkaline nature, but does not require classification as an irritant. Observe precautions in section 8.2.  
 Skin sensitization – although some plant extracts can be sensitizing to the skin, there is no evidence of sensitization caused by this product.

### 12. Ecological Information

To the best of our knowledge, the substance has not been fully assessed so its ecological information is not available.

### 13. Disposal Considerations

Product disposal:	Dispose of in accordance with all applicable local and national regulations.
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, recycled or disposed of in accordance with applicable local or national regulations.

### 14. Transport Information

14.1 UN-Number:	Not listed
14.2 Shipping Name:	N/A
14.3 Transport Hazard Classes:	Not hazardous for transport.
14.4 Packing group:	Not listed
14.5 Environmental Hazards	Not listed
14.6 Special Precautions	None known

### 15. Regulatory Information

Not classified (Regulation (EC) No. 1272/2008)  
 Not classified (Directive 67/548/EEC)  
 The substance is a food ingredient and is therefore not subject to registration via REACH (Regulation (EC) No. 1907/2006).

### 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.