

PHA[®] Varietals

Safety Data Sheet

PHA[®] products are not classified as dangerous products according to European Union legislation, and they are used as flavourings 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).

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

| | |
|--------------------------------------|--|
| 1.1 Product Identifier | PHA[®] Varietals in PG |
| 1.2 Synonyms | PHA [®] Topnotes are PHA [®] products manufactured from single variety hop oils, and will be named as the hop variety, e.g. 'PHA [®] Varietal Topnote Goldings', 'PHA [®] Varietal Topnote Saaz' |
| 1.3 Relevant Uses | To be used as a flavouring for foods and beverages. Not for direct consumption as an undiluted product |
| 1.4 Supplier | BarthHaas / BarthHaas UK |
| 1.5 Emergency Contact Details | BarthHaas / BarthHaas UK 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: enquiries@barthhaas.co.uk |

2. HAZARD 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 | None |

3. COMPONENTS/INFORMATION ON INGREDIENTS

| Component | Concentration (% m/m) | CAS no. | EINECS no. | Hazard classification of the individual component |
|---------------------------------------|--------------------------|-----------|------------|---|
| Propylene glycol (propan-1,2-diol) | 59 - 95 | 57-55-6 | 200-338-0 | <p>Propylene glycol has a workplace exposure limit assigned. It is non hazardous when used as directed. Propylene glycol is registered as a food additive in the European Union as E 1520.</p> |
| Hop oil | Max. 1 % | 8007-04-3 | - | <p>Regulation (EC) No 1272/2008 Toxicity (Category 1). Dangerous Substances Directive; (67/548/EEC): Harmful: may Cause lung damage if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.</p> |



4. FIRST AID MEASURES

4.1 Description of First

Aid Methods:

- **Inhalation** - Move the exposed person to fresh air at once. Rinse nose and mouth with water. Other medical attention if discomfort continues.
- **Skin Contact** - Wash skin thoroughly with soap and water
- **Eye Contact** - Wash eye with plenty of water. Obtain medical attention if symptoms persist.
- **Oral Ingestion** - Rinse mouth thoroughly provided person is conscious. Obtain medical attention if discomfort continues.

4.2 Most important symptoms and Effects No data available. See Section 11

4.3 Indications of Immediate Medical No data available

5 FIRE AID MEASURES

5.1 Extinguishing Media Carbon dioxide, water spray, dry powder and alcohol-resistant foam. Do not use full water jet.

5.2 Special Hazards Arising from Substance Propylene glycol will give rise to toxic fumes in fire. Hop oil is combustible and may give rise to hazardous fumes in a fire.

5.3 Advice for Firefighters Firefighters 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 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.
Wash spillage site with water. Do not contaminate water sources or sewer.



7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling Avoid spilling, skin and eye contact.

Handling

7.2 Conditions for Safe Storage Keep container closed when not in use. Keep away from heat and from sources of ignition. Suitable storage is high-grade stainless steel, glass, aluminium or lacquered steel drums. Store at 0 - 20 °C (32 - 68 °F).

7.3 Specific End Uses The substance is manufactured from food ingredients, and it is for use as a processing aid during the manufacture of foodstuffs. It is therefore not subject to registration via REACH (Regulation (EC) No. 1907/2006) for such uses. It should be used in accordance with applicable food legislation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters Components of the preparation for which there are workplace exposure limits:

- Propylene glycol: UK: long term exposure limit, measured as 8-hour time weighted average (TWA) (refs.1.3): 150 ppm (474 mg/m³) for total vapour and particulates; 10 mg/m³ for particulates.

8.2 Exposure Controls:

- **Engineering Controls**
 - Provide adequate ventilation. Observe the workplace exposure limits and minimize the risk of inhalation of vapours.
- **Eye/Face Protection**
 - If in danger of splashing, wear chemical goggles.
- **Hand Protection**
 - Suitable protective gloves if risk of skin contact.
- **Skin Protection**
 - If danger of splashing, wear PVC or rubber apron
- **Respiratory Protection**
 - Not normally required



9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| a) Physical state | Liquid |
| b) Color | Clear, transparent to pale yellow |
| c) Odor | Characteristic (depending on specific PHA® product) |
| d) Melting point/Freezing point | Not practical to measure |
| e) Boiling point | No data available. Data for propylene glycol: >150 °C (302 °F) |
| f) Flammability | No data available. Data for propylene glycol: LEL 2.6%, UEL 12.5% |
| g) Lower and upper explosion limit | No data available. Data for propylene glycol: Heat or flame may cause explosions. |
| h) Flash point | >90 °C (194 °F) |
| i) Auto-ignition temperature | Not practical to measure |
| j) Decomposition temperature | Not practical to measure |
| k) pH | Not practical to measure |
| l) Kinematic viscosity | Not practical to measure |
| m) Solubility | Soluble |
| n) Partition coefficient n-octanol/water (log value) | Not practical to measure |
| o) Vapor pressure | No data available. Data for propylene glycol: <10 mbar at 20 °C |

- p) Density [kg/m³]** 1.0134 - 1.037
- 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 | Avoid excessive heat for prolonged periods of time. |
| 10.5 Incompatible Materials | Strong oxidizing substances. Strong acids. Strong bases |
| 10.6 Hazardous Decomposition Products | Fire creates carbon monoxide (CO) and carbon dioxide (CO ₂). |

11. TOXICOLOGICAL INFORMATION

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|---|--|
| 11.1 Acute Toxicity | <p>Not known. The Product contains propylene glycol at 59 - 95 % w/w as indicated in Section 3. Propylene glycol is registered as a food additive in the EU as E 1520.</p> <p>Toxicological data for propylene glycol: LD50 oral rat, mouse 22, 22 g kg⁻¹, respectively (1)</p> <p>Propylene glycol may cause local irritation of skin and mucuous membranes (1). Spray and vapour in the eyes may cause irritation and smarting (2).</p> |
| 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 Not hazardous

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity No data available.
The product contains propylene glycol at 59 – 95 % w/w as indicated in Section 3. Propylene glycol is not regarded as dangerous for the environment (2). Data for propylene glycol: LC50 (24hr) goldfish >5000 mg l-1 (1); EC50 (24 and 48 hr) Daphnia magna > 10 g l-1 (1)

12.2 Persistence and Degradability No data available. Propylene glycol is biodegradable.

12.3 Bioaccumulative Potential No data available. The bioconcentration of propylene glycol has been estimated as <1 (1).

12.4 Mobility in Soil No data available. Miscible with water.

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 Class** Non-hazardous for transport
- 14.3 Shipping name** N/A
- 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** Not classified (Regulation (EC) No. 1272/2008)
Not classified (Directive 67/548/EEC)
The substance is a food ingredient and its therefore not subject to registration via REACH (Regulation (EC) No. 1907/2006).
- 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.

References: (1) Dictionary of Substances and their Effects (DOSE), 3rd Electronic Edition, 2005 (Royal Society of Chemistry/.Knovel Corp.) (2) Supplier MSDS for propylene glycol. (3) EH40/2005 Workplace Exposure Limits, Health and Safety Executive, 2nd Edition 2011.