

## Safety data sheet

according to 1907/2006/EC, Article 31

Printing date: 28.10.2016

Version: 3.00

Revision: 28.10.2016

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Hop Oil - Type Dry
- **Substance name:** hop oil
- **CAS Number:**  
8007-04-3
- **1.2 Relevant identified uses of the substance or mixture and uses advised against:** -
- **Application of the substance / the preparation:** Manufacturing of food
- **Uses advised against** -
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier/Manufacturer:**  
Simon H. Steiner  
Hopfen GmbH  
Auhofstr. 18  
84048 Mainburg  
Germany  
  
Tel.: +49-8751-8605-0  
Fax: +49-8751-8605-80
- **Email competent person:** sds@kft.de
- **Information department:** See supplier/manufacturer
- **1.4 Emergency telephone number:**  
Simon H. Steiner, Hopfen, GmbH, Mainburg, Germany  
Tel.: +49-8751-8605-0 (Monday – Friday 08:00 – 17:00)

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3      H226 Flammable liquid and vapour.



GHS08 health hazard

Asp. Tox. 1      H304 May be fatal if swallowed and enters airways.



GHS09 environment

Aquatic Acute 1      H400 Very toxic to aquatic life.  
Aquatic Chronic 1      H410 Very toxic to aquatic life with long lasting effects.

GHS07

Skin Irrit. 2      H315 Causes skin irritation.  
Eye Irrit. 2      H319 Causes serious eye irritation.

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· **Information concerning particular hazards for human and environment:** Not applicable

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008** The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS02

GHS07

GHS08

GHS09

· **Signal word** Danger

· **Hazard statements**

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P280 Wear protective gloves / eye protection / face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P331 Do NOT induce vomiting.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable

· **vPvB:** Not applicable

### \* SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances** hop oil

· **CAS No. Description:**

8007-04-3 hop oil

· **Additional information:**

Main essential oils:

Myrene

Humulene

Cayophyllene

in variable concentrations

Ethanol <2%

· **Dangerous components:**

CAS: 123-35-3	7-methyl-3-methyleneocta-1,6-diene	55-75%
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EINECS: 204-622-5	Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Eye Irrit. 2, H319	
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CAS: 64-17-5	ethanol	< 2%
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EINECS: 200-578-6	Flam. Liq. 2, H225; Eye Irrit. 2, H319	
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Index number: 603-002-00-5		
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#### SECTION 4: First aid measures

##### 4.1 Description of first aid measures

###### General information:

First aid personnel should pay attention to their own safety.  
If symptoms persist or in case of doubt, seek medical advice.

• **After inhalation:** In case of complaints which may be caused by vapours supply fresh air and call a doctor.

###### After skin contact:

In case of complaints after contact with undiluted product rinse immediately with water and apply skin care.  
Wash with water and soap.  
If skin irritation continues, consult a doctor.

###### After eye contact:

Rinse the eyes with open eyelids for 10 - 15 minutes with water. Then consult a doctor (eye specialist).  
If symptoms persist, consult a doctor.

###### After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting.

If vomiting occurs spontaneously:

Hold the head of the vomiting person low with the body in a prone position in order to avoid vomit getting into the air tube (danger of aspiration).

Seek medical treatment.

##### 4.2 Most important symptoms and effects, both acute and delayed

Aspiration pneumonitis

Local irritation symptoms

Irritation of eyes and mucous membrane

• **Danger:** If swallowed or in case of vomiting, danger of entering the lungs.

##### 4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment

(decontamination, vital functions)

#### SECTION 5: Firefighting measures

##### 5.1 Extinguishing media

###### Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire fighting measures that suit the environment.

• **For safety reasons unsuitable extinguishing agents:** High volume water jet

##### 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon dioxide (CO<sub>2</sub>)

Carbon monoxide (CO)

##### 5.3 Advice for firefighters

• **Protective equipment:** Wear self-contained respiratory protective device.

###### Additional information:

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

#### SECTION 6: Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

Ensure adequate ventilation.

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Wear protective equipment. Keep unprotected persons away.

Do not smoke - keep ignition sources away

Avoid contact with eyes and skin.

• **6.2 Environmental precautions:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to penetrate the ground/soil.

In case of seepage into the ground inform responsible authorities.

• **6.3 Methods and material for containment and cleaning up:**

Absorb with non-combustible material like sand, soil or diatomite.

Small quantities:

If spilled/leaked: absorb main quantity with cloth.

Make sure to recycle or dispose of in suitable receptacles.

• **6.4 Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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### SECTION 7: Handling and storage

• **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Avoid ingestion and inhalation.

Avoid contact with eyes and skin.

• **Information about protection against explosions and fires:**

Vapours may form explosive mixtures with air.



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Observe the national regulations for storage of flammable liquids.

Observe the general rules of industrial fire protection.

• **7.2 Conditions for safe storage, including any incompatibilities**

• **Storage:**

• **Requirements to be met by storerooms and receptacles:**

Store container tightly sealed at a cool and dry place with sufficient ventilation.

Store only in the original receptacle.

• **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from feed.

Refer to national regulations for storing hazardous chemicals.

• **Further information about storage conditions:**

Store and transport packagings always in an upright position.

Protect from contamination.

Keep receptacle tightly sealed.

storage temperature: < 10 °C

• **Storage class:** 3: Flammable liquids

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- **7.3 Specific end use(s)** No further relevant information available

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.

- **8.1 Control parameters**

- **Components with limit values that require monitoring at the workplace:**

- **64-17-5 ethanol**

- WEL (Great Britain) Long-term value: 1920 mg/m<sup>3</sup>, 1000 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **8.2 Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures should be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with eyes and skin.

Remove all soiled and contaminated clothing immediately.

After skin contact, cleanse skin thoroughly.

- **Breathing equipment:**

In case of unintentional release of substance, exceeding the occupational exposure limit value:



In case of brief exposure or low pollution use a respiratory filter device. In case of intensive or longer exposure use a respiratory protective device that is independent of circulating air.

Filter A (colour code: brown)

- **Protection of hands:**

Chemical resistant gloves (EN 374)

The glove material has to be impermeable and resistant to the product/substance/preparation.

Selection of the glove material in consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves:**

Butyl rubber, BR

Nitrile rubber, NBR

Fluorocarbon rubber (FKM)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material:**

> 480 min butylrubber (butyl) 0.7 mm

480 min nitrile rubber (0.4 mm)

> 480 min (FKM/0.7 mm)

The exact penetration time has to be found out by the manufacturer of the protective gloves and has to be observed.

The above-mentioned times are based on reference values as per EN 374. Under practical conditions (33 °C – taking into account the body temperature), the maximum wearing time is to be limited to one-third.

- **Eye protection:** Tightly sealed goggles

- **Body protection:** Protective work clothing

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information:**

- **Appearance:**

**Form:** Viscous

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· <b>Colour:</b>	Clear Yellowish
· <b>Odour:</b>	Characteristic
· <b>Odour threshold:</b>	Not determined
· <b>pH-value:</b>	Not determined
· <b>Change in condition:</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	> 71 °C
· <b>Flash point:</b>	42 °C
· <b>Flammability (solid, gaseous):</b>	Not applicable
· <b>Ignition temperature:</b>	Not determined
· <b>Decomposition temperature:</b>	Not determined
· <b>Self ignition temperature:</b>	Not determined
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not applicable
<b>Upper:</b>	Not applicable
· <b>Oxidizing properties:</b>	None
· <b>Vapour pressure:</b>	Not determined
· <b>Density at 20 °C:</b>	0.8 g/cm <sup>3</sup>
· <b>Relative density:</b>	Not determined
· <b>Vapour density:</b>	Not determined
· <b>Evaporation rate:</b>	Not determined
· <b>Solubility in / Miscibility with Water:</b>	Insoluble
· <b>Partition coefficient (n-octanol/water):</b>	Not determined
· <b>Viscosity:</b>	
<b>dynamic:</b>	Not determined
<b>kinematic at 40 °C:</b>	4-6 mPas
<b>Surface tension:</b>	Not determined
· <b>9.2 Other information</b>	Soluble in ethanol

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid**
  - Heat
  - sun rays
- **10.5 Incompatible materials:**
  - Oxidants
  - Acid anhydrides
  - Acid chlorides

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- **10.6 Hazardous decomposition products:**

No hazardous decomposition products if instructions for storage and handling are followed

#### \* SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity** Based on available data, the classification criteria are not met.

- **LD/LC50 values that are relevant for classification:**

##### 8007-04-3 hop oil

Oral LD<sub>50</sub> 2700 mg/kg (rat)

- **Primary irritant effect:**

- **Skin corrosion/irritation**

Causes skin irritation.

- **Serious eye damage/irritation**

Causes serious eye irritation.

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

- **Additional toxicological information:**

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

- **Carcinogenicity** Based on available data, the classification criteria are not met.

- **Reproductive toxicity** Based on available data, the classification criteria are not met.

- **STOT-single exposure** Based on available data, the classification criteria are not met.

- **STOT-repeated exposure** Based on available data, the classification criteria are not met.

- **Aspiration hazard**

May be fatal if swallowed and enters airways.

#### \* SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

There are no quantitative data available for the product itself.

##### 123-35-3 7-methyl-3-methylocta-1,6-diene

EC<sub>50</sub>/48h 1.47 mg/l (Daphnia magna)  
OECD TG 202 (2014)

EC<sub>50</sub>/72h 0.342 mg/l (Pseudokirchneriella subcapitata)  
OECD TG 201 (2015)

NOEC/96h > 10 mg/l (Cyprinus carpio)  
NOEC > water solubility; OECD TG 203 (2010)

- **12.2 Persistence and degradability** No further relevant information available

- **12.3 Bioaccumulative potential** log Pow: 4.82 (CAS No 123-35-3)

- **12.4 Mobility in soil** No further relevant information available

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (German Regulation) (Self-assessment): hazardous to water

According to Annex 3 of the General Administrative Regulation under the Federal Water Act on the Classification of Substances Hazardous to Water into Water Hazard Classes

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Danger to drinking water is possible if large quantities leak into the ground or into water course.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable

- **vPvB:** Not applicable

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- **12.6 Other adverse effects** No further relevant information available

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation:**

Must be recycled or disposed of according to the regulations. Waste has to be classified according to the European Waste Catalogue based on the identification of the waste generating source.

Disposal according to instructions of local authorities

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **European waste catalogue:**

07 00 00 WASTES FROM ORGANIC CHEMICAL PROCESSES

07 01 00 wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals

07 01 04\* other organic solvents, washing liquids and mother liquors

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

### \* SECTION 14: Transport information

- **14.1 UN-Number**

- **ADR, IMDG, IATA**

UN1993

- **14.2 UN proper shipping name**

- **ADR**

1993 FLAMMABLE LIQUID, N.O.S. (hop oil),  
ENVIRONMENTALLY HAZARDOUS, special provision 640E  
FLAMMABLE LIQUID, N.O.S. (hop oil), MARINE POLLUTANT  
FLAMMABLE LIQUID, N.O.S. (hop oil)

- **IMDG**

- **IATA**

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class**

3 (F1) Flammable liquids

- **Label**

3

- **IMDG**



- **Class**

3 Flammable liquids

- **Label**

3

- **IATA**



- **Class**

3 Flammable liquids

- **Label**

3

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<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	III
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> <li>· Special marking (ADR):</li> </ul>	Symbol (fish and tree) Symbol (fish and tree)
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Danger code (Kemler):</li> <li>· EMS Number:</li> <li>· Stowage Category</li> </ul>	Warning: Flammable liquids 30 F-ES-E A
<ul style="list-style-type: none"> <li>· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</li> </ul>	Not applicable
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> </ul>	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Limited quantities (LQ):</li> <li>· Excepted quantities (EQ)</li> </ul>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· Transport category:</li> <li>· Tunnel restriction code:</li> <li>· Remarks:</li> </ul>	3 D/E Limited Quantity: 5 l inner packaging, 30 kg gross packaging unit
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> <li>· IATA</li> <li>· Remarks:</li> </ul>	Packing Instructions: For Limited Quantities: Y344 (Max Net Qty/Pkg: 10 l) Passenger and Cargo Aircraft: 355 (Max Net Qty/Pkg: 60 l) Cargo Aircraft only: 366 (Max Net Qty/Pkg: 220 l)
<ul style="list-style-type: none"> <li>· UN "Model Regulation":</li> </ul>	UN 1993 FLAMMABLE LIQUID, N.O.S., SPECIAL PROVISION 640E (HOP OIL), 3, III, ENVIRONMENTALLY HAZARDOUS

### \* SECTION 15: Regulatory information

#### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### · Directive 2012/18/EU

· Named dangerous substances - ANNEX I Substance is not listed.

##### · Seveso category

E1 Hazardous to the Aquatic Environment

P5c FLAMMABLE LIQUIDS

· Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t

· Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

##### · National regulations

· Water hazard class: Water hazard class 2 (German Regulation) (Self-assessment): hazardous to water

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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#### \* SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Reasons for amendments:**

- Change of trade name
- Classification
- Data on components
- Information on toxicity
- Ecological data
- Transport classification
- General revision

- **Replaces version dated:** 11.04.2016

- **Relevant phrases**

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

- **Classification according to Regulation (EC) No 1272/2008**

- Flam. Liq. 3 based on test data
- Asp. Tox. 1 calculation method
- Skin Irrit. 2 calculation method
- Eye Irrit. 2 calculation method
- Aquatic Acute 1 calculation method
- Aquatic Chronic 1 calculation method

- **Department issuing SDS:**

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- Germany

Phone: +49 6155 8981 400      Fax: +49 6155 8981 500

Safety Data Sheet Service: +49 6155 8981 522

- **Contact:** Dr. Daniel Ries

- **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Flam. Liq. 2: Flammable liquids – Category 2
- Flam. Liq. 3: Flammable liquids – Category 3
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Asp. Tox. 1: Aspiration hazard – Category 1
- Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

- **Sources:**

- Information provided by the manufacturer

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· **\* Data compared to the previous version altered.**

Changes have been made to sections marked with a \*, as compared to the previous version.

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