

### SECTION 1: Identification

#### 1.1. Identification

Trade name : Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

Chemical name : hop oil

CAS-No. : 8007-04-3

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Manufacturing of food

#### 1.3. Supplier

##### Manufacturer/Supplier/Importer

S. S. Steiner, Inc.  
655 Madison Avenue  
New York, NY 10065 - USA  
T +1 212 838 8900

##### Email competent person

sds@kft.de

##### Manufacturer/Supplier/Importer

Simon H. Steiner, Hopfen, GmbH  
Auhofstr. 18  
Mainburg, 84048 - Germany  
T +49-(0)8751-8605-0 - F +49-(0)8751-8605-80

##### Supplier/Importer

Steiner Hops Ltd.  
185-189 High St  
Epping, Essex CM16 4BL - United Kingdom

#### 1.4. Emergency telephone number

Emergency number : S. S. Steiner, Inc.  
Phone: +1 212 838 8900 (Monday – Friday 08.00 – 17.00, Eastern Time Zone)

Simon H. Steiner, Hopfen, GmbH  
Tel.: +49-8751-8605-0 (Monday – Friday 08:00 – 17:00, Central European Time)

Steiner Hops Ltd.  
Phone: +44 1992 572 331 (Monday – Friday 08.00 – 17.00, Greenwich Mean Time)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flammable liquids Category 3	H226	Flammable liquid and vapour
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Aspiration hazard Category 1	H304	May be fatal if swallowed and enters airways

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H226 - Flammable liquid and vapour  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

Precautionary statements (GHS US) :

P210 - Keep away from heat, hot surfaces, sparks, open flames. - No smoking.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, eye protection.

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P391 - Collect spillage.

### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Very toxic to aquatic life with long lasting effects.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Multi-constituent  
Chemical name : hop oil  
CAS-No. : 8007-04-3

Name	Product identifier	%	GHS US classification
7-methyl-3-methyleneocta-1,6-diene (Component)	(CAS-No.) 123-35-3	<75	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Asp. Tox. 1, H304
caryophyllene (Component)	(CAS-No.) 87-44-5	<10	Asp. Tox. 1, H304

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
First-aid measures after ingestion : Do not induce vomiting. Call a physician immediately.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Irritation.  
Symptoms/effects after eye contact : Eye irritation.  
Symptoms/effects after ingestion : Risk of lung edema.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide. Making extinguishing agents environment-friendly.  
Unsuitable extinguishing media : Strong water jet.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapour.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Cool closed containers exposed to fire with water spray.  
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.  
Other information : Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid breathing mist, vapors, spray. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid sub-soil penetration. Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Cover spill with non combustible material, e.g.: sand/earth. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal. Notify authorities if product enters sewers or public waters.

Other information : Disposal must be done according to official regulations.

#### 6.4. Reference to other sections

Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid breathing mist, vapors, spray. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Maximum storage period : ≈ 1 year(s)

Storage temperature : < 50 °F

Information about storage in one common storage facility : Keep away from food, drink and animal feeding stuffs.

Packaging materials : Aluminum.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<b>7-methyl-3-methylenoocta-1,6-diene (123-35-3)</b>
Not applicable
<b>caryophyllene (87-44-5)</b>
Not applicable

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

In case of repeated or prolonged contact wear gloves. EN 374. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear

### Eye protection:

Wear closed safety glasses. EN 166

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

Accidental release measures. Filter type: P1. EN 143.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: clear.
Color	: colorless to slightly yellow
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: > 160 °F
Flash point	: ≈ 107 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: ≈ 1 g/ml (68 °F)
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: ≈ 46 mm <sup>2</sup> /s
Viscosity, dynamic	: 46 mPa·s (77 °F)
Explosion limits	: No data available
Explosive properties	: Product is not explosive. Explosive vapor/air mixtures may be formed.
Oxidizing properties	: No data available

### 9.2. Other information

Other properties : No additional information available.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

Stable under normal conditions. To avoid thermal decomposition, do not overheat.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
LD50 oral rat	> 3380 mg/kg body weight
LD50 dermal rabbit	> 5000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – single exposure	: Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity – repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: May be fatal if swallowed and enters airways.
Viscosity, kinematic	: ≈ 46 mm <sup>2</sup> /s
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Risk of lung edema.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
-------------------	---

7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
EC50 Daphnia 1	1.47 mg/l (48h; Daphnia magna; (OECD 202 method))

### 12.2. Persistence and degradability

7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
Biodegradation	76 % (28d; (OECD 301D method))

caryophyllene (87-44-5)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	10 % (28 d; EU Method C.4-E)

### 12.3. Bioaccumulative potential

7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
Log Pow	4.82 (pH 6,5; 30°C; (OECD 117 method))

caryophyllene (87-44-5)	
Log Pow	6.23 (25 °C; pH = 7; (OECD 123 method))

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other adverse effects : No additional information available.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Disposal must be done according to official regulations. Do not dispose of with domestic waste. Do not discharge into drains or the environment.

Additional information : Flammable vapors may accumulate in the container.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1197 Extracts, flavoring, liquid, 3, III  
UN-No.(DOT) : UN1197  
Proper Shipping Name (DOT) : Extracts, flavoring, liquid  
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120  
Packing group (DOT) : III - Minor Danger  
Hazard labels (DOT) : 3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.  
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).  
T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

DOT Packaging Exceptions (49 CFR 173.xxx) : 150  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  
Emergency Response Guide (ERG) Number : 127  
Other information : No supplementary information available.

### Transportation of Dangerous Goods

Not applicable

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

### Transport by sea

Transport document description (IMDG) : UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS  
UN-No. (IMDG) : 1197  
Proper Shipping Name (IMDG) : EXTRACTS, FLAVORING, LIQUID  
Class (IMDG) : 3 - Flammable liquids  
Packing group (IMDG) : III - substances presenting low danger  
Limited quantities (IMDG) : 5 L

### Air transport

Transport document description (IATA) : UN 1197 Extracts, flavouring, liquid, 3, III, ENVIRONMENTALLY HAZARDOUS  
UN-No. (IATA) : 1197  
Proper Shipping Name (IATA) : Extracts, flavouring, liquid  
Class (IATA) : 3 - Flammable Liquids  
Packing group (IATA) : III - Minor Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

### 15.2. International regulations

hop oil (8007-04-3)

Manufacturing of food

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

## SECTION 16: Other information

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

Revision date : 04/17/2019  
Department issuing data specification sheet: : KFT Chemieservice GmbH  
Im Leuschnerpark, 3 64347 Griesheim  
Postfach 1451 64345 Griesheim  
Germany  
Phone: +49 6155-8981-400 Fax: +49 6155 8981-500  
Safety Data Sheet Service: +49 6155 8981-522  
Contact person : Stefanie Zgorzelski

# Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil (thin film), Hop Oil (steam distilled)

## Safety Data Sheet

according to US OSHA Hazard Communication Standard (HCS 2012); 29 CFR Part 1910.1200

### Full text of H-phrases:

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation

### Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Section	Changed item	Change	Comments
1	Product identifier	Added	

KFT SDS US 00

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*