

SECTION 1: Identification

1.1. Identification

Trade name : Hop Oil "Type NOBLE"
 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

Supplier/Importer

S. S. Steiner, Inc.
 725 5th Ave. 23 rd Floor
 New York, NY 10022 - USA
 T +1 212 838 8900

Email competent person

sds@kft.de

Manufacturer/Supplier

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 vapor
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
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 vapor
 H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation

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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
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P302+P352 - If on skin: Wash with plenty of water
P391 - Collect spillage

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Toxic to aquatic life with long lasting effects. 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	<30	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Asp. Tox. 1, H304
Linalool (Component)	(CAS-No.) 78-70-6	<15	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
caryophyllene (Component)	(CAS-No.) 87-44-5	<5	Asp. Tox. 1, H304
(E)-7,11-dimethyl-3-methylenedodeca-1,6,10-triene (Component)	(CAS-No.) 18794-84-8	<2	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 or rash 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. May cause an allergic skin reaction.
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 vapor.
Reactivity : Flammable liquid and vapor.

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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.

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. Contaminated work clothing should not be allowed out of the workplace. 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 : ≈ 2 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

No additional information available.

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

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Hand protection:

In case of repeated or prolonged contact wear gloves. 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.

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Accidental release measures. Filter type: P1.

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/cm ³ (68°F)
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
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 vapor.

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.

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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	: Not classified (Based on available data, the classification criteria are not met)
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
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.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
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.

Linalool (78-70-6)	
LC50 fish 1	27.8 mg/l (96h; Oncorhynchus mykiss; OECD Guideline 203)
EC50 Daphnia 1	59 mg/l (48h; Daphnia magna; OECD Guideline 202)
NOEC (acute)	25 mg/l (48h; Daphnia magna; OECD Guideline 202)
7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
EC50 Daphnia 1	1.47 mg/l (48h; Daphnia magna; (OECD 202 method))
(E)-7,11-dimethyl-3-methylenedodeca-1,6,10-triene (18794-84-8)	
NOEC (chronic)	54 µg/L (21d; Daphnia magna; (OECD 211 method))
NOEC chronic fish	66 µg/L (32d; Pimephales promelas; (OECD 210 method))

12.2. Persistence and degradability

Linalool (78-70-6)	
Persistence and degradability	Readily biodegradable.
7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
Biodegradation	76 % (28d; (OECD 301D method))

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(E)-7,11-dimethyl-3-methylenedodeca-1,6,10-triene (18794-84-8)	
Persistence and degradability	Readily biodegradable, failing 10-d window.
Biodegradation	60.6 % (28d; (OECD 301B method))

12.3. Bioaccumulative potential

Linalool (78-70-6)	
Log Pow	2.9 (68°F)
7-methyl-3-methyleneocta-1,6-diene (123-35-3)	
Log Pow	4.82 (pH 6,5; 86°F; (OECD 117 method))

12.4. Mobility in soil

(E)-7,11-dimethyl-3-methylenedodeca-1,6,10-triene (18794-84-8)	
Log Koc	4.69 (OECD 121 method)
Ecology - soil	Low mobility (soil).

12.5. Other adverse effects

Other adverse effects	: No additional information available.
Effect on the global warming	: No known effects from this product.
GWPMix comment	: No known effects from this product.

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

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

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.

TDG

Not applicable

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 components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) 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.

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Manufacturing of food

15.2. International regulations

No additional information available.

15.3. US State regulations

California Proposition 65 - This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, developmental and/or reproductive harm.

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7-methyl-3-methyleneocta-1,6-diene (123-35-3)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

SECTION 16: Other information

Revision date : 09/05/2017
Data sources : Information provided by the manufacturer.
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

Full text of H-phrases:

H226	Flammable liquid and vapor
H227	Combustible liquid
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

Abbreviations and acronyms:

EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

Indication of changes:

General revision. Identification.

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