

### SECTION 1: Identification

#### 1.1. Identification

Trade name : Hop Oil, Hop Oil "Type DRY", Hop Oil "Type DRY variety specific" (v.s.), Hop Oil "Type NOBLE", Hop Oil "Type NOBLE PLUS" 1:100 in Ethanol

#### 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<br>Category 2                 | H225 | Highly flammable liquid and vapor |
| Serious eye damage/eye<br>irritation Category 2 | H319 | Causes serious eye irritation     |
| Carcinogenicity Category<br>1A                  | H350 | May cause cancer                  |

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) :

H225 - Highly flammable liquid and vapor  
H319 - Causes serious eye irritation  
H350 - May cause cancer

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P210 - Keep away from heat, hot surfaces, sparks, open flames. - No smoking  
P233 - Keep container tightly closed  
P280 - Wear protective clothing, protective gloves, eye protection, face protection

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P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention  
P403+P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up

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

Other hazards not contributing to the classification : Harmful 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

Not applicable

### 3.2. Mixtures

| Name    | Product identifier | %     | GHS-US classification                                      |
|---------|--------------------|-------|--|
| ethanol | (CAS-No.) 64-17-5  | >= 90 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319<br>Carc. 1A, H350 |

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

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : In all cases of doubt, or when symptoms persist, seek medical attention.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
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 : Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after eye contact : Eye irritation.

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

### 5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor.  
Reactivity : Highly flammable liquid and vapor.

### 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.

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### SECTION 6: Accidental release measures

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

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

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene. 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

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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Floors, walls and other surfaces in the hazard area must be cleaned regularly. 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. Avoid contact with skin and eyes. Wear personal protective equipment.

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

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

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

| ethanol (64-17-5) |                                     |                        |
|-------------------|-------------------------------------|------------------------|
| OSHA              | OSHA PEL (TWA) (mg/m <sup>3</sup> ) | 1900 mg/m <sup>3</sup> |
| OSHA              | OSHA PEL (TWA) (ppm)                | 1000 ppm               |
| OSHA              | Regulatory reference (US-OSHA)      | OSHA                   |

#### 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:**

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Chemically resistant protective 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:

Wear respiratory protection. 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   |
| Odor  | : characteristic  |
| Odor threshold                              | : No data available   |
| pH  | : No data available   |
| Melting point                               | : Not applicable  |
| Freezing point                              | : No data available   |
| Boiling point                               | : ≈ 149 °F  |
| Flash point                                 | : ≈ 50 °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                  | : ≈ 0.8 g/ml (68°F)   |
| Solubility                                  | : No data available   |
| Log Pow                                     | : No data available   |
| Auto-ignition temperature                   | : 685 - 797 °F  |
| Decomposition temperature                   | : No data available   |
| Viscosity, kinematic                        | : No data available   |
| Viscosity, dynamic                          | : No data available   |
| Explosion limits                            | : LEL: 3.1 vol %<br>UEL: 27.7 vol %                                     |
| Explosive properties                        | : Product is not explosive. Explosive vapor/air mixtures may be formed. |
| Oxidizing properties                        | : No data available   |

### 9.2. Other information

Additional information : Data of chapter 9 refer to the main component.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Highly 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<br>(Based on available data, the classification criteria are not met)    |
| Skin corrosion/irritation         | : Not classified<br>(Based on available data, the classification criteria are not met)    |
| Serious eye damage/irritation     | : Causes serious eye irritation.  |
| Respiratory or skin sensitization | : Not classified<br>(Based on available data, the classification criteria are not met)    |
| Germ cell mutagenicity            | : Not classified<br>(Based on available data, the classification criteria are not met)    |
| Carcinogenicity                   | : May cause cancer.<br>(Based on available data, the classification criteria are not met) |

| ethanol (64-17-5)                          |   |
|--|---|
| NOAEL (chronic,oral,animal/male,2 years)   | > 4400 mg/kg body weight (EPA OPPTS 870.4200) |
| NOAEL (chronic,oral,animal/female,2 years) | > 4250 mg/kg body weight (EPA OPPTS 870.4200) |
| IARC group                                 | 1 - Carcinogenic to humans                    |

|  |  |
|--|--|
| Reproductive toxicity                              | : Not classified<br>(Based on available data, the classification criteria are not met) |
| Specific target organ toxicity – single exposure   | : Not classified<br>(Based on available data, the classification criteria are not met) |
| Specific target organ toxicity – repeated exposure | : Not classified<br>(Based on available data, the classification criteria are not met) |
| Aspiration hazard                                  | : Not classified<br>(Based on available data, the classification criteria are not met) |
| Symptoms/effects after eye contact                 | : Eye irritation.  |

## SECTION 12: Ecological information

### 12.1. Toxicity

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

| ethanol (64-17-5)      |   |
|------------------------|---|
| LC50 fish 1            | 14200 mg/l (96 h; US EPA method E03-05)       |
| EC50 Daphnia 1         | 5012 mg/l (48 h; ASTM E729-80)                |
| LC50 fish 2            | 8140 mg/l <i>Leuciscus idus</i> (golden orfe) |
| NOEC chronic fish      | 250 mg/l (OECD 212 method)                    |
| NOEC chronic crustacea | 2 mg/l (10d)                                  |

### 12.2. Persistence and degradability

| ethanol (64-17-5)             |                        |
|-------------------------------|------------------------|
| Persistence and degradability | Readily biodegradable. |

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|                          |             |
|--------------------------|-------------|
| <b>ethanol (64-17-5)</b> |             |
| Biodegradation           | 97 % (28 d) |

### 12.3. Bioaccumulative potential

|                           |                           |
|---------------------------|---------------------------|
| <b>ethanol (64-17-5)</b>  |                           |
| Log Kow                   | -0.31                     |
| Bioaccumulative potential | Bioaccumulation unlikely. |

### 12.4. Mobility in soil

|                          |                                      |
|--------------------------|--------------------------------------|
| <b>ethanol (64-17-5)</b> |                                      |
| Ecology - soil           | No additional information available. |

### 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 : UN1170 Ethanol, 3, II  
 UN-No.(DOT) : UN1170  
 Proper Shipping Name (DOT) : Ethanol  
 Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120  
 Packing group (DOT) : II - Medium Danger  
 Hazard labels (DOT) : 3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
 DOT Packaging Bulk (49 CFR 173.xxx) : 242  
 DOT Special Provisions (49 CFR 172.102) : 24 - Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.  
 IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). 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.  
 T4 - 2.65 178.274(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) : 4b;150

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DOT Quantity Limitations Passenger aircraft/rail : 5 L  
(49 CFR 173.27)  
DOT Quantity Limitations Cargo aircraft only (49 : 60 L  
CFR 175.75)  
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 1170 ETHANOL (ETHYL ALCOHOL), 3, II  
UN-No. (IMDG) : 1170  
Proper Shipping Name (IMDG) : ETHANOL (ETHYL ALCOHOL)  
Class (IMDG) : 3 - Flammable liquids  
Packing group (IMDG) : II - substances presenting medium danger  
Limited quantities (IMDG) : 1 L

### Air transport

Transport document description (IATA) : UN 1170 Ethanol, 3, II  
UN-No. (IATA) : 1170  
Proper Shipping Name (IATA) : Ethanol  
Class (IATA) : 3 - Flammable Liquids  
Packing group (IATA) : II - Medium 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

**ethanol (64-17-5)**

Listed on IARC (International Agency for Research on Cancer)

### 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

Revision date : 09/04/2017  
Data sources : Information provided by the manufacturer.

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Department issuing data specification sheet: : KFT Chemieservice GmbH  
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Full text of H-phrases:

|      |  |
|------|--|
| H225 | Highly flammable liquid and vapor            |
| 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                |
| H350 | May cause cancer                             |

Abbreviations and acronyms:

|       |   |
|-------|---|
| BCF   | Bioconcentration factor   |
| 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   |
| NOAEL | No-Observed Adverse Effect Level  |
| 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*