

### SECTION 1: Identification

#### 1.1. Identification

Trade name : Ethanol-Extract, Total Resin Extract  
Chemical name : Hop, Humulus lupulus, ext  
CAS-No. : 8060-28-4

#### 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.  
655 Madison Avenue  
New York, NY 10065 - 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

Acute toxicity (oral) H301 Toxic if swallowed  
Category 3  
Carcinogenicity Category H350 May cause cancer  
1A

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) :

H301 - Toxic if swallowed  
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  
P280 - Wear protective clothing, protective gloves, eye protection, face protection  
P301+P310 - If swallowed: Immediately call a POISON CENTER, a doctor  
P330 - Rinse mouth  
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.

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

### 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, Humulus lupulus, ext  
CAS-No. : 8060-28-4

Name	Product identifier	%	GHS-US classification
3,5-dihydroxy-2,6,6-tris(3-methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one (Component)	(CAS-No.) 468-28-0	15-40	Acute Tox. 3 (Oral), H301
hop oil (Component)	(CAS-No.) 8007-04-3	3-12	Flam. Liq. 3, H226 Asp. Tox. 1, H304
ethanol (Component)	(CAS-No.) 64-17-5	<0,3	Flam. Liq. 2, H225 Eye Irrit. 2, H319 Carc. 1A, H350

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 : 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 eyes with water as a precaution.  
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)

No additional information available

### 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

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

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

#### 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".

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

### 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. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. 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

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

Maximum storage period :  $\approx$  8 year(s)

Storage temperature :  $< 50^{\circ}\text{F}$

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:

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.

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

### SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Appearance	: Viscous.
Color	: Green
Odor	: characteristic
Odor threshold	: No data available
pH	: 5.7 - 6.7
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 296 °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	: No data available
Viscosity, dynamic	: 400 - 1000 mPa.s (113°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

The product is non-reactive under normal conditions of use, storage and transport.

#### 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.

#### 10.4. Conditions to avoid

No additional information available

#### 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: Toxic if swallowed.
----------------	-----------------------------

Ethanol-Extract, Total Resin Extract	
ATE US (oral)	247 mg/kg body weight

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

### 3,5-dihydroxy-2,6,6-tris(3-methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one (468-28-0)

LD50 oral rat	100 mg/kg body weight
---------------	-----------------------

Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 5.7 - 6.7
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 5.7 - 6.7
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	: May cause cancer.

### 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 (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	: Not classified (Based on available data, the classification criteria are not met)

## 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 Leuciscus idus (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.
Biodegradation	97 % (28 d)

### 12.3. Bioaccumulative potential

### ethanol (64-17-5)

Log Kow	-0.31
Bioaccumulative potential	Bioaccumulation unlikely.

### 12.4. Mobility in soil

### ethanol (64-17-5)

Ecology - soil	No additional information available.
----------------	--------------------------------------

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

### 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.
-------------------------	--

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN2810 Toxic, liquids, organic, n.o.s., 6.1, III
UN-No.(DOT)	: UN2810
Proper Shipping Name (DOT)	: Toxic, liquids, organic, n.o.s.
Class (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Packing group (DOT)	: III - Minor Danger
Hazard labels (DOT)	: 6.1 - Poison



DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: 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). T7 - 4 178.274(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. TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 153
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.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
Emergency Response Guide (ERG) Number	: 153
Other information	: No supplementary information available.

### TDG

Not applicable

# Ethanol-Extract, Total Resin Extract

## 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 2810 TOXIC LIQUID, ORGANIC, N.O.S., 6.1, III  
UN-No. (IMDG) : 2810  
Proper Shipping Name (IMDG) : TOXIC LIQUID, ORGANIC, N.O.S.  
Class (IMDG) : 6.1 - Toxic substances  
Packing group (IMDG) : III - substances presenting low danger  
Limited quantities (IMDG) : 5 L

### Air transport

Transport document description (IATA) : UN 2810 Toxic liquid, organic, n.o.s., 6.1, III  
UN-No. (IATA) : 2810  
Proper Shipping Name (IATA) : Toxic liquid, organic, n.o.s.  
Class (IATA) : 6.1 - Toxic Substances  
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.

#### Ethanol-Extract, Total Resin Extract

Manufacturing of food

### 15.2. International regulations

#### 3,5-dihydroxy-2,6,6-tris(3-methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one (468-28-0)

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

#### 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 : 09/01/2017  
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

# Ethanol-Extract, Total Resin Extract

## Safety Data Sheet

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

Full text of H-phrases:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H304	May be fatal if swallowed and enters airways
H319	Causes serious eye irritation
H350	May cause cancer

Abbreviations and acronyms:

ATE	Acute Toxicity Estimate
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
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*