

### SECTION 1: Identification

#### 1.1. Identification

Product form : Substance  
Trade name : Leaf Hops (bales or vacuum packs)  
Chemical name : Hops, Humulus lupulus

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

Use of the substance/mixture : Manufacturing of food

#### 1.3. Supplier

##### Manufacturer/Supplier/Importer

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

##### Supplier/Importer

Steiner Hops Ltd.  
15A Henley Business park  
Pirbright Road  
Normandy, Guildford, Surrey, GU3 2DX  
United Kingdom  
T +44 1992 572 331

##### Email competent person

sds@kft.de

##### Manufacturer

Hallertauer Hopfenveredelungsges. mbH  
Auhofstr. 18  
Mainburg, 84048  
Germany  
T +49 8751 8605 500

##### Manufacturer/Supplier/Importer

S. S. Steiner, Inc.  
1 West Washington Avenue  
Yakima, WA 98903  
USA  
T +1 509 453 4731

#### 1.4. Emergency telephone number

Emergency number : Simon H. Steiner, Hopfen, GmbH  
Tel.: +49 8751 8605 0 (Montag – Freitag 08:00 – 17:00, Central European Time)

Hallertauer Hopfenveredelungsges. mbH  
Tel.: +49 8751 8605 500 (Montag – Freitag 08:00 – 17:00, Central European Time)

Steiner Hops Ltd.  
Phone: +44 1992 572 331 (Monday to Friday 8.00-17.00, Greenwich Mean Time)

S. S. Steiner, Inc.  
Phone: +1 509 453 4731 (Monday to Friday 8.00-17.00, Pacific Time Zone)

### SECTION 2: Hazard(s) identification

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

##### GHS US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Combustible Dust		May form combustible dust concentrations in air

Full text of H statements : see section 16

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

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

#### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

May form combustible dust concentrations in air

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

Precautionary statements (GHS US) :

P261 - Avoid breathing dust, fume.

P264 - Wash hands, forearms and face thoroughly after handling.

P272 - Contaminated work clothing must not be allowed out of the workplace.

P280 - Wear protective gloves, protective clothing, eye protection.

P302+P352 - If on skin: Wash with plenty of water.

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

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P363 - Wash contaminated clothing before reuse.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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

No additional information available

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

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type :

UVCB

Chemical name :

Hops, Humulus lupulus

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	1 – 14	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
hop oil (Component)	CAS-No.: 8007-04-3	0.16 – 3.2	Flam. Liq. 3, H226 Asp. Tox. 1, H304

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

### 3.2. Mixtures

Not applicable

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### 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. Take off 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	: Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after skin contact	: May cause an allergic skin reaction. Irritation.
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	: Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Strong water jet.

#### 5.2. Specific hazards arising from the chemical

Fire hazard	: May ignite spontaneously if exposed to air.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Carbon dioxide. Carbon monoxide.

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

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 contact with skin and eyes. Avoid breathing dust, fume.
----------------------	--

##### 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	: Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.
Other information	: Disposal must be done according to official regulations.

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### 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

Additional hazards when processed	: Dust could form explosive mixtures with air.
Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid breathing dust, fume.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

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

Storage conditions	: Store in a well-ventilated place. Keep cool.
Maximum storage period	: ≈ 5 year(s)
Storage temperature	: < 5 °C
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

<b>Hops, Humulus lupulus</b>	
<b>USA - OSHA - Occupational Exposure Limits</b>	
Local name	Particulates not otherwise regulated (PNOR)
OSHA PEL (TWA) [1]	15 mg/m <sup>3</sup> (Total dust) (50 mppcf) 5 mg/m <sup>3</sup> (Respirable fraction) (15 mppcf)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
<b>hop oil (8007-04-3)</b>	
No additional information available	
<b>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)</b>	
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

<b>Hand protection:</b>
Chemically resistant protective 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. In case of repeated or prolonged contact wear gloves

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### Eye protection:

EN 166. Wear closed safety glasses

### Skin and body protection:

Wear suitable protective clothing. EN 13034. EN ISO 13688

### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Dust production: dust mask with filter type P2. Short term exposure. EN 143

### Other information:

Do not eat, drink or smoke when using this product. Avoid contact with skin and eyes. Always wash hands after handling the product.

## SECTION 9: Physical and chemical properties

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

Physical state	: Solid
Color	: Green
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: Not applicable
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable
Relative vapor density at 20°C	: Not applicable
Relative density	: No data available
Solubility	: Water: Slightly soluble
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosion limits	: No data available
Explosive properties	: Product is not explosive. Dust may form explosive mixture in air.
Oxidizing properties	: Non oxidizing material.

### 9.2. Other information

Other properties : Combustible.

## 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

To avoid thermal decomposition, do not overheat.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Potential dust explosion hazard from airborne release.

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### 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) : 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)

#### **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	700 mg/kg body weight
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)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Not relevant)
Viscosity, kinematic	: Not applicable
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Irritation.
Symptoms/effects after eye contact	: Eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No ecotoxicological data about this product are known.

### 12.2. Persistence and degradability

#### **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)**

Persistence and degradability	Not readily biodegradable.
Biodegradation	26 % (28 d; (OECD 301D method))

### 12.3. Bioaccumulative potential

#### **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)**

Partition coefficient n-octanol/water (Log Pow)	4 – 5.5 (40 °C; pH 7; (OECD 117 method))
---	--

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### 12.4. Mobility in soil

#### 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)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.7 – 2.9 (Quantitative structure-activity relationship (QSAR))
--	---

### 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.

Product/Packaging disposal recommendations : Recycle or dispose of in compliance with current legislation.

## SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

DOT	IMDG	IATA
<b>14.1. UN number</b>		
Not regulated for transport		
<b>14.2. Proper Shipping Name</b>		
Not applicable	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>		
Not applicable	Not applicable	Not applicable
<b>14.4. Packing group</b>		
Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>		
Not applicable	Not applicable	Not applicable
No supplementary information available		

### 14.6. Special precautions for user

**DOT**  
No data available

**IMDG**  
No data available

**IATA**  
No data available

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

CAUTION: This product is exempt from all requirements of the Toxic Substances Control Act (exemption for food and food additive according to Toxic Substances Control Act Title 15, Chapter 53, §2602, B (VI))

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

##### Hops, *Humulus lupulus*

Regulatory reference  
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 : 11/10/2022

Data sources : Information provided by the manufacturer. European Chemicals Agency, <http://echa.europa.eu/>.

Department issuing data specification sheet: : KFT Chemieservice GmbH  
Im Leuschnerpark 3  
D-64347 Griesheim

Phone: +49 6155-8981-400

Fax: +49 6155 8981-500

SDS Service: +49 6155 8981-522

Contact person : Dr. Stefanie Finsterbusch-Kettner

Other information : A safety data sheet is not required for this product. This Product Safety Information Sheet has been created on a voluntary basis.

#### Full text of H-phrases

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation

#### Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
-----	---



# Leaf Hops (bales or vacuum packs)

## Safety Data Sheet

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

Abbreviations and acronyms	
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
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

### Indication of changes:

General revision. Composition/Information on ingredients. Identification. Hazards identification. Toxicological information. Ecological information.

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.