SECTION 1: Identification

1.1. Identification
Trade name: Light Stable AromaExtract
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
Manufacturer/Supplier/Importer: S. S. Steiner, Inc.
725 5th Ave. 23 rd Floor
New York, NY 10022 - USA
T +1 212 838 8900

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

Email competent person: sds@kft.de

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) H302 Harmful if swallowed
Category 4
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): Warning
Hazard statements (GHS-US): H302 - Harmful if swallowed
Precautionary statements (GHS-US): P270 - Do not eat, drink or smoke when using this product
P301+P312 - If swallowed: Call a POISON CENTER, a doctor if you feel unwell
P330 - Rinse mouth

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable
Light Stable AromaExtract
Safety Data Sheet

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type : Multi-constituent
Chemical name : Hop, Humulus lupulus, ext
CAS-No. : 8060-28-4

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>hop oil (Component)</td>
<td>(CAS-No.) 8007-04-3</td>
<td>15-45</td>
<td>Flam. Liq. 3, H226, Asp. Tox. 1, H304</td>
</tr>
<tr>
<td>3,5-dihydroxy-2,6,6-tris(3-methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one</td>
<td>(CAS-No.) 468-28-0</td>
<td>&lt;20</td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
</tbody>
</table>

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 poison center/doctor/physician if you feel unwell.
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 : Rinse mouth. 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
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 : Ventilate spillage area.

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.
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. 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 : Keep container tightly closed. Keep away from heat and direct sunlight. Store in a well-ventilated place. Keep cool.
Maximum storage period : = 6 year(s)
Storage temperature : < 50 °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
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

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:
Not required for normal conditions of use. Use splash goggles when eye contact due to splashing is possible.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Not required for normal conditions of use.
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 : Oily. Waxy.
Color : brown
Odor : characteristic
Odor threshold : No data available
pH : 7.5 - 8
Melting point : Not applicable
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Not self-igniting
**Light Stable AromaExtract**

**Safety Data Sheet**


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### 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:
35 - 50 mPa.s (122°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.

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### 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.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity:
Oral: Harmful if swallowed.

<table>
<thead>
<tr>
<th>Light Stable AromaExtract</th>
<th>ATE US (oral) ATE US (oral)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,5-dihydroxy-2,6,6-tris(methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one (468-28-0)</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>100 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation:
Not classified

Serious eye damage/irritation:
Not classified

Respiratory or skin sensitization:
Not classified

Germ cell mutagenicity:
Not classified

Carcinogenicity:
Not classified

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09/04/2017

US-OSHA - en
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 : No ecotoxicological data about this product are known.

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in 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.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not applicable

TDG
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

SECTION 15: Regulatory information
15.1. US Federal regulations
Light Stable AromaExtract
Safety Data Sheet

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.

Light Stable AromaExtract
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

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.
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 |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |

Abbreviations and acronyms:

| ATE | Acute Toxicity Estimate |
| IATA | International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LD50 | Median lethal dose |
| SDS | Safety Data Sheet |

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