SECTION 1: Identification

1.1. Identification
Trade name : CO2-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
Manufacturer/Supplier/Importer
S. S. Steiner, Inc.
725 5th Ave. 23 nd 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), Category 4
H302 - Harmful if swallowed.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements
GHS-US labelling
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
SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,5-dihydroxy-2,6,6-tris(3-methylbuten-2-yl)-4-(3-methyl-1-oxobutyl)cyclohexa-2,4-dien-1-one (Component)</td>
<td>468-28-0</td>
<td>15-30</td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
<tr>
<td>Hop oil (Component)</td>
<td>8007-04-3</td>
<td>3-12</td>
<td>Flam. Liq. 3, H226 Asp. Tox. 1, H304</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 or a doctor 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 or a doctor 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.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite kieselguhr, powdered limestone. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.
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:
- Store in a well-ventilated place. Keep cool. Store locked up.

Maximum storage period:
- = 8 years

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:
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:
Use splash goggles when eye contact due to splashing is possible.

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Accidental release measures. Filter type: A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:
- Liquid

Appearance:
- Viscous.

Colour:
- Slightly yellow to green amber

Odour:
- Characteristic

Odour threshold:
- No data available

pH:
- 3.5 - 4.5

Melting point:
- Not applicable

Freezing point:
- No data available

Boiling point:
- No data available

Flash point:
- = 206 °F

Relative evaporation rate (butylacetate=1):
- No data available

Flammability (solid, gas):
- Not applicable

Vapour pressure:
- No data available
### Relative vapour density at 20 °C
No data available

### Relative density
No data available

### Density
0.9 - 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
200 - 400 mPas (113°F)

### Explosive limits
No data available

### Explosive properties
Product is not explosive.

### Oxidising properties
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
200 - 400 mPas (113°F)

### Explosive limits
No data available

### Explosive properties
Product is not explosive.

### Oxidising properties
No data available

### Other information
No additional information available.

### Relative vapour density at 20 °C
No data available

### Relative density
No data available

### Density
0.9 - 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
200 - 400 mPas (113°F)

### Explosive limits
No data available

### Explosive properties
Product is not explosive.

### Oxidising 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
All heat sources, including direct sunlight.

#### 10.5. Incompatible materials
Oxidizing agent.

#### 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: Harmful if swallowed.

<table>
<thead>
<tr>
<th>CO2-Extract</th>
<th>333 mg/kg bodyweight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td></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 (468-28-0)</td>
<td></td>
</tr>
</tbody>
</table>

LD50 oral rat
100 mg/kg bodyweight

Skin corrosion/irritation
Not classified

Serious eye damage/irritation
Not classified

Respiratory or skin sensitisation
Not classified

Germ cell mutagenicity
Not classified

Carcinogenicity
Not classified

Reproductive toxicity
Not classified
CO2-Extract
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.

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

Transportation of Dangerous Goods
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

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.
CO2-Extract
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations
No additional information available.

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: 01/22/2018
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-statements:
H226 Flammable liquid and vapour.
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

Indication of changes:
<table>
<thead>
<tr>
<th>Section</th>
<th>Changed item</th>
<th>Change</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>2.1</td>
<td>GHS-US classification</td>
<td>Modified</td>
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</tr>
<tr>
<td>2.2</td>
<td>Precautionary statements</td>
<td>Modified</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Composition</td>
<td>Modified</td>
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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.