

SECTION 1: Identification

1.1. Identification

Product form : Substance
Trade name : CO2 Hop Extract and De-oiled CO2 Hop 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

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

Manufacturer/Supplier/Importer

Steiner Hops Ltd.
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Normandy, Guildford, Surrey, GU3 2DX
United Kingdom
T +44 1992 572 331

Manufacturer/Supplier/Importer

Hops Extract Corporation of America
305 N 2ND Ave Yakima
Yakima, WA, 98902-2690
USA
T +1 509 249 1530

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

Email competent person

sds@kft.de

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 |

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Skin sensitization, Category 1

H317

May cause an allergic skin reaction

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)

: H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

Precautionary statements (GHS US)

: P261 - Avoid breathing spray, vapors, mist.

P264 - Wash hands, 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, soap.

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.

P501 - Dispose of contents/container to a hazardous or special waste collection point.

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

: 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 | ≤ 30 | 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 | 3 – 12 | Flam. Liq. 3, H226 Asp. Tox. 1, H304 |

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

3.2. Mixtures

Not applicable

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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. 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. Carbon dioxide. |
| Unsuitable extinguishing media | : Strong water jet. |

5.2. Specific hazards arising from the chemical

| | |
|--|---|
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. Carbon monoxide. Carbon dioxide. |
|--|---|

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 spray, vapors, mist. |
|----------------------|---|

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

No additional information available

6.3. Methods and material for containment and cleaning up

| | |
|-------------------------|--|
| Methods for cleaning up | : Take up liquid spill into absorbent material. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal. |
| Other information | : Disposal must be done according to official regulations. |

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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. Avoid contact with skin and eyes. Avoid breathing spray, vapors, mist.

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 container tightly closed. Keep cool.

Maximum storage period : ≈ 8 years

Storage temperature : < 10 °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

| |
|--|
| Hop, Humulus lupulus, ext (8060-28-4) |
| No additional information available |
| hop oil (8007-04-3) |
| No additional information available |
| 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) |
| 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. Chemically resistant protective gloves. Nitrile rubber. 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 |
| Eye protection: |
| Wear closed safety glasses. EN 166 |
| Skin and body protection: |
| Wear suitable protective clothing. EN ISO 13688. EN 13034 |

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Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. breathing apparatus with filter. Filter type: A. EN 143. Short term exposure. Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust

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 | : Liquid |
| Appearance | : Viscous. |
| Color | : Slightly yellow to green amber |
| Odor | : characteristic |
| Odor threshold | : No data available |
| pH | : 4 (3.5 – 4.5) |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : ≈ 97 °C |
| 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 |
| Density | : 0.9 – 1 g/ml (20°C) |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (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 mPa.s (45°C) |
| Explosion limits | : No data available |
| Explosive properties | : Product is not explosive. |
| Oxidizing properties | : Non oxidizing material. |

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.

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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) : 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. pH: 4 (3.5 – 4.5) |
| Serious eye damage/irritation | : Causes serious eye irritation. pH: 4 (3.5 – 4.5) |
| 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 (Based on available data, the classification criteria are not met) |
| Viscosity, kinematic | : No data available |
| 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)) |
|---|--|

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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

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT
No data available

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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

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

Hop, Humulus lupulus, ext (8060-28-4)

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 : 09/27/2022
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 |

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| Full text of H-phrases | |
|------------------------|-------------------------------------|
| 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 |
| 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 |
| DPD | Dangerous Preparations Directive 1999/45/EC |
| DSD | Dangerous Substances Directive 67/548/EEC |
| 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. |

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| Section | Changed item | Change | Comments |
|---------|-----------------------|----------|----------|
| 2.1 | GHS US classification | Modified | |
| 2.2 | GHS US Label | Modified | |
| 15 | National regulations | Modified | |

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.