



Safety Data Sheet

01. IDENTIFICATION OF THE SUBSTANCE/PREPARATION & THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	Garlic Oil				
Biological Definition	Allium Sativum Bulb Oil is the oil expressed from the bulb of the Garlic, <i>Allium sativum L., Liliaceae.</i>				
INCI Name	Allium Sativum Bulb Oil				
Synonyms & Trade Names	-				
CAS-No	8000-78-0	EC No.	Not available	EINECS No.	Not available

1.2 Relative identified uses of the substance or mixture and uses advised against

Industry Use Only.

1.3 Details of the supplier of the safety data sheet

Golden Bough Botanicals Inc 12-1585 Cliveden Ave Delta BC V3M 6M1

1.4 Emergency Tel. No.

604-540-8700 (Monday-Friday 8:30 am-4:30 pm)

02. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

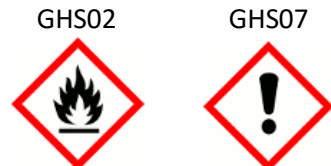
No additional data available.

Classification (EC 1272/2008)

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Skin sensitization	Category 1 - (H317)
Flammable liquids	Category 3 - (H226)

2.2 Label Elements

Label in accordance with (EC) No 1272/2008



Signal Word

Warning

Contains

DIALLYL DISULFIDE, DIALLYL TRISULFIDE

Hazard Statements

H302 - Harmful if swallowed.
 H315 - Causes skin irritation.
 H319 - Causes serious eye irritation.
 H317 - May cause an allergic skin reaction.
 H226 - Flammable liquid and vapour.

Precautionary Statements

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking

P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 P331 - Do NOT induce vomiting
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and 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
 P337 + P313 - If eye irritation persists: Get medical advice/attention

Supplementary Precautionary Statements

None.

2.3 Other Hazards

PBT or vPvB according to Annex XIII	No additional data available.
Adverse physio-chemical properties	
Adverse effects on human health	May be harmful in contact with skin.

03. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

35.0 - 45.0% Diallyl Disulfide Cas. No: 2179-57-9 EC No: 218-548-6

Classification (EC 1272/2008): Skin Sens. 1 (H317) (EFFA) Eye Irrit. 1 (H319) (EFFA) Skin Irrit. 2 (315) (EFFA) Acute Tox. 3 (H301) (EFFA) Acute Tox. 5 (H313)(EFFA) Flam. Liq. 3, (H226)(EFFA) Skin Sens. 1 (H317) Eye Irrit. 1 (H319) Skin Irrit. 2 (H315) Acute Tox. 3 (H301) Acute Tox. 5 (H313)

15.0 - 20.0% Diallyl Trisulfide Cas. No:2050-87-5, EC No. 218-107-8

Classification (EC 1272/2008): Acute Tox. 4 (H302) (EFFA) Flam. Liq. 4 (H227)(EFFA) Acute Tox. 4 (H302)

5.0 - 15.0% Diallyl Sulfide Cas. No: 592-88-1, EC No. 209-775-1

Classification (EC 1272/2008): Skin Irrit. 3 (316) (EFFA) Acute Tox. 5 (H303)(EFFA) Flam. Liq. 3 (H226)(EFFA) Skin Irrit. 3 (H316) Acute Tox. 5 (H303)

04. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Move to fresh air in case of accidental inhalation of vapours. If breathing is difficult, give oxygen. If not breathing, give artificial respiration.
Ingestion	Do not induce vomiting without medical advice. Clean mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.
Skin Contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Wash contaminated clothing before reuse. Consult a physician if necessary.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

05. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media
Extinguishing media: Carbon dioxide (CO ₂). Dry Chemical Powder. Foam.
5.2 Special hazards arising from the product
Thermal decomposition can lead to release of irritating and toxic gases and vapours. Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion, or decomposition.
5.3 Advice for firefighters
Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

06. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation, especially in confined areas. Use personal protection recommended in Section 8.
6.2 Environmental Precautions
Do not discharge into drains, water courses or onto the ground. Dispose of in line with Local authority guidelines.
6.3 Methods and material for containment and cleaning up.
Methods for Containment - Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Methods for cleaning up - Cover liquid spill with sand, earth or other non-combustible absorbent material. Sweep up and shovel into suitable containers for disposal.
6.4 Reference to other sections
Section 8. Section 12. Section 13.

07. HANDLING AND STORAGE

7.1 Precautions for safe handling
Advice on safe handling. Ensure adequate ventilation, especially in confined areas. General hygiene considerations. Handle in accordance with good industrial hygiene and safety practice.
7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
7.3 Specific end use(s)
No additional data available.

08. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Derived No Effect Level (DNEL) No information available. Predicted No Effect Concentration (PNEC) No information available.
8.2 Exposure controls
Protective Equipment



Process Conditions	No additional data available.
Engineering Measures	Ensure adequate ventilation, especially in confined areas.
Respiratory Equipment	Ensure area is well ventilated.
Hand Protection	Wear suitable protective clothing.
Eye Protection	Avoid contact with eyes. Wear safety glasses with side shields (or goggles).
Other Protection	Wear suitable protection to avoid contact with skin and eyes.
Hygiene Measures	Good personal hygiene practices are always advisable, especially when working with chemicals / oils.
Personal Protection	Avoid inhalation of the product. Avoid contact with skin and eyes.
Skin Protection	Wear protective clothing to reduce the risk of skin and eye contact.
Environmental Exposure Controls	Avoid discharging into drainage water.

09. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear liquid yellow to reddish orange.
Colour	Pale yellow to dark yellow.
Odour	Characteristic.
Relative Density	1.050 - 1.095 @20°C
Flash Point (°C)	30
Refractive Index	1.550 - 1.580 @20°C
Melting Point (°C)	No additional data available.
Boiling Point (°C)	No additional data available.
Vapour Pressure	No additional data available.
Solubility in Water @20°C	Insoluble. Soluble in oil. Insoluble in glycerine.
Auto-ignition temperature (°C)	No additional data available.

9.2 Other information

No additional data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

No additional data available.

10.2 Chemical stability

Chemically stable under the recommended handling and storage conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

10.3 Possible hazardous reactions

None under normal processing.

10.4 Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5 Incompatible materials
No additional data available.
10.6 Hazardous Decomposition Products
None under normal use conditions.

11. TOXOLOGICAL INFORMATION

11.1 Information on toxicological effects																	
Acute Toxicity	<p>The following values are calculated based on chapter 3.1 of the GHS document</p> <p>ATEmix (oral) 349.00</p> <p>ATEmix (dermal) 2,777.00</p> <p><u>Unknown acute toxicity</u></p> <p>100 % of the mixture consists of ingredient(s) of unknown toxicity.</p> <p>35.3 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.</p> <p>51.3 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.</p> <p>100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).</p> <p>100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapour).</p> <p>100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).</p> <table> <tr> <td>Chemical</td> <td>Oral LD50</td> <td>Dermal LD50</td> <td>Inhalation LC50</td> </tr> <tr> <td>DIALLYL DISULFIDE</td> <td>= 260 mg/kg (Rat)</td> <td>= 3600 mg/kg (Rabbit)</td> <td></td> </tr> <tr> <td></td> <td></td> <td>= 1826 mg/kg (Rat)</td> <td></td> </tr> <tr> <td>DIALLYL SULFIDE</td> <td>= 2980 mg/kg (Rat)</td> <td>> 5 g/kg (Rabbit)</td> <td></td> </tr> </table>	Chemical	Oral LD50	Dermal LD50	Inhalation LC50	DIALLYL DISULFIDE	= 260 mg/kg (Rat)	= 3600 mg/kg (Rabbit)				= 1826 mg/kg (Rat)		DIALLYL SULFIDE	= 2980 mg/kg (Rat)	> 5 g/kg (Rabbit)	
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Skin corrosion / irritation	No additional data available.																
Serious eye damage / irritation	No additional data available.																
Respiratory or skin sensitisation	No additional data available.																
Germ Cell Mutagenicity	No additional data available.																
Carcinogenicity	No additional data available.																
Reproductive toxicity	No additional data available.																
STOT-single exposure	No additional data available.																
STOT-repeated exposure	No additional data available.																
Aspiration hazard	No additional data available.																
Photo-toxicity	No additional data available.																
Other Information	No additional data available.																

12. ECOLOGICAL INFORMATION


12.1 Toxicity
100 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.
12.2 Persistence & degradability
No additional data available.
12.3 Bioaccumulation Potential
No additional data available.

12.4 Mobility in soil
No additional data available.
12.5 Results of PBT and vPvB Assessment
No additional data available.
12.6 Other adverse effects
Do not allow product to enter streams, sewers or other waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
<u>Waste from Residues/Unused Products</u> Disposal should be in accordance with applicable regional, national and local laws and regulations. <u>Contaminated packaging</u> Improper disposal or reuse of this container may be dangerous and illegal.

14. TRANSPORT INFORMATION

14.1 UN number						
<table border="1"> <tr> <td>UN No. Road</td> <td>UN 1197</td> </tr> <tr> <td>UN No. SEA</td> <td>UN 1197</td> </tr> <tr> <td>UN No. AIR</td> <td>UN 1197</td> </tr> </table>	UN No. Road	UN 1197	UN No. SEA	UN 1197	UN No. AIR	UN 1197
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UN No. SEA	UN 1197					
UN No. AIR	UN 1197					
14.2 UN proper shipping name						
Extracts, Flavoring, Liquid.						
14.3 Transport hazard class(es)						
ADR/RID/ADN Class: 3 IMDG Class: 3 ICAO Class/Division: 3 Transport Labels 						
14.4 Packing group						
ADR/RID/ADN Packing group III IMDG Packing group III ICAO Packing group III						
14.5 Environmental hazards						
Not applicable.						
14.6 Special precautions for user						
Tunnel restriction code ADR: B1, IB3, T2, TP1						
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code						
Not defined.						

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
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Statutory Instruments

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716).

Approved Code of Practise

Classification and Labelling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.

Guidance Notes

CHIP for everyone HSG(108). Workplace Exposure Limits EH40

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

15.2 Chemical safety assessment

No additional data available.

16. OTHER INFORMATION

Hazard and/or Precautionary Statements in Full	H302 - Harmful if swallowed H315 - Causes skin irritation H319 - Causes serious eye irritation H317 - May cause an allergic skin reaction H226 - Flammable liquid and vapour.
Other Information	None.
Revision Date	August 15, 2016
Reason for revision	New SDS.
Rev No/Repl, SDS Generated	01

DISCLAIMER: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.