

SAFETY DATA SHEET

In accordance with REACH Regulation EC No.1907/2006

Product: Garlic oil FPD-2016A-LM1234

Version: 4

Section 1. Identification of the substance or the mixture and of the supplier

1.1 Product Identifier

Product identifier: Garlic oil; CAS: 8008-99-9

Other identifiers: Allium sativum L.

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

Product uses: Flavours, Fragrances

1.3 Details of the supplier of the safety data sheet

Company name: Norfolk Essential Oils

Company address: Pates Farm
Wisbech Road
Tipsend
Welney
Wisbech
PE14 9SQ

Contact: Regulatory Affairs

E-Mail address: info@ne oils.com

Company phone: 01354 638065

1.4 Emergency telephone number

Emergency phone: 01354 638065

Section 2. Hazards identification

2.1 Classification of the substance or mixture

Classification under Regulation (EC) No 1272/2008

Class and category of danger: Flammable Liquid, Hazard Category 3
Acute Toxicity - Oral Category 4
Skin Corrosion / Irritation Category 2
Eye Damage / Irritation Category 2
Sensitization - Skin Category 1
Hazardous to the Aquatic Environment - Long-term Hazard Category 2
Hazardous to the Aquatic Environment - Long-term Hazard Category 3
H226, Flammable liquid and vapour.
H302, Harmful if swallowed.
H315, Causes skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects.
H412, Harmful to aquatic life with long lasting effects.

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2.2 Label elements

Classification under Regulation (EC) No 1272/2008

Signal word: Warning

Hazard statements: H226, Flammable liquid and vapour.
H302, Harmful if swallowed.
H315, Causes skin irritation.
H317, May cause an allergic skin reaction.
H319, Causes serious eye irritation.
H411, Toxic to aquatic life with long lasting effects.
H412, Harmful to aquatic life with long lasting effects.

M factor: None

Supplemental Information: None

Precautionary statements: P210, Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233, Keep container tightly closed.
P240, Ground/bond container and receiving equipment.
P241, Use explosion-proof electrical, ventilating and lighting equipment.
P242, Use only non-sparking tools.
P243, Take precautionary measures against static discharge.
P261, Avoid breathing vapour or dust.
P264, Wash hands and other contacted skin thoroughly after handling.
P270, Do not eat, drink or smoke when using this product.
P272, Contaminated work clothing should not be allowed out of the workplace.
P273, Avoid release to the environment.
P280, Wear protective gloves/eye protection/face protection.
P301/312, IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.
P303/361/353, IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P305/351/338, IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330, Rinse mouth.
P333/313, If skin irritation or rash occurs: Get medical advice/attention.
P337/313, If eye irritation persists: Get medical advice/attention.
P362, Take off contaminated clothing and wash before reuse.
P370/378, In case of fire: Use carbon dioxide, dry chemical, foam for extinction.
P391, Collect spillage.
P403/235, Store in a well-ventilated place. Keep cool.
P501, Dispose of contents/container to approved disposal site, in accordance with local regulations.

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Pictograms:



2.3 Other hazards

Other hazards: Hydrocarbon Concentration %: < 1.0000%

Section 3. Composition / information on ingredients

3.1 Substances

Product identifier: Garlic oil; CAS: 8008-99-9

Contains:

Name	CAS	EC	REACH Registration No.	%	Classification for (CLP) 1272/2008	Specific Conc. Limits, M-factors and ATEs
Allyl disulfide	2179-57-9	218-548-6		50-100%	Flam. Liq. 3-Acute Tox. 3-Skin Irrit. 2-Eye Irrit. 2-Skin Sens. 1B;H226-H301-H315-H317-H319,-	dermal: ATE = 3600 mg/kg bw-oral: ATE = 260 mg/kg bw
Diallyl trisulfide	2050-87-5	218-107-8		1-<5%	Acute Tox. 4;H302,-	oral: ATE = 500 mg/kg bw
Dimethyl disulfide	624-92-0			1-<5%	Acute Tox. 4-Acute Tox. 3-Eye Irrit. 2-Skin Sens. 1B-STOT SE 3-Aquatic Acute 1-Aquatic Chronic 1; H302-H317-H319-H331-H335-H410,-	inhalation: ATE = 1310 ppmV (gas)-oral: ATE = 385 mg/kg bw

Section 4. First-aid measures

4.1 Description of first aid measures

Inhalation: Remove from exposure site to fresh air, keep at rest, and obtain medical attention.

Eye exposure: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin exposure: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

Ingestion: IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Harmful if swallowed.

Causes skin irritation.

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May cause an allergic skin reaction.

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

None expected, see Section 4.1 for further information.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable media: Carbon dioxide, Dry chemical, Foam.

5.2 Special hazards arising from the substance or mixture

In case of fire, may be liberated: Carbon monoxide, Unidentified organic compounds.

5.3 Advice for fire fighters:

In case of insufficient ventilation, wear suitable respiratory equipment.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Avoid inhalation. Avoid contact with skin and eyes. See protective measures under Section 7 and 8.

6.2 Environmental precautions:

Keep away from drains, surface and ground water, and soil.

6.3 Methods and material for containment and cleaning up:

Remove ignition sources. Provide adequate ventilation. Avoid excessive inhalation of vapours. Contain spillage immediately by use of sand or inert powder. Dispose of according to local regulations.

6.4 Reference to other sections:

Also refer to sections 8 and 13.

Section 7. Handling and storage

7.1 Precautions for safe handling:

Keep away from heat, sparks, open flames and hot surfaces. - No smoking.

Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

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7.3 Specific end use(s):

Flavours, Fragrances: Use in accordance with good manufacturing and industrial hygiene practices.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits: Not Applicable

8.2 Exposure Controls

Eye / Skin Protection

Wear protective gloves/eye protection/face protection

Respiratory Protection

Under normal conditions of use and where adequate ventilation is available to prevent build up of excessive vapour, this material should not require special engineering controls. However, in conditions of high or prolonged use, or high temperature or other conditions which increase exposure, the following engineering controls can be used to minimise exposure to personnel: a) Increase ventilation of the area with local exhaust ventilation. b) Personnel can use an approved, appropriately fitted respirator with organic vapour cartridge or canisters and particulate filters. c) Use closed systems for transferring and processing this material.

Also refer to Sections 2 and 7.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State/Colour:	Not determined
Odour:	Not determined
Odour threshold:	Not determined
Melting point / freezing point:	Not determined
Boiling point or initial boiling point and boiling range:	Not determined
Flammability:	Not determined
Lower and upper explosion limit:	Not determined
Flash point:	30 °C
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not relevant
pH:	Not determined
Kinematic viscosity:	Not determined
Solubility:	Not determined
Partition coefficient: n-octanol/water (log value):	Not determined
Vapour pressure:	Not determined
Density and/or relative density:	Not determined
Relative vapour density:	Not determined

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Particle characteristics: Not determined

9.2 Other information: None available

Section 10. Stability and reactivity

10.1 Reactivity:

Presents no significant reactivity hazard, by itself or in contact with water.

10.2 Chemical stability:

Good stability under normal storage conditions.

10.3 Possibility of hazardous reactions:

Not expected under normal conditions of use.

10.4 Conditions to avoid:

Avoid extreme heat.

10.5 Incompatible materials:

Avoid contact with strong acids, alkalis or oxidising agents.

10.6 Hazardous decomposition products:

Not expected.

Section 11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute Toxicity:	Acute Toxicity - Oral Category 4
Acute Toxicity Oral	424 mg/kg
Acute Toxicity Dermal	>5000
Acute Toxicity Inhalation	Not Available
Skin corrosion/irritation:	Skin Corrosion / Irritation Category 2
Serious eye damage/irritation:	Eye Damage / Irritation Category 2
Respiratory or skin sensitisation:	Sensitization - Skin Category 1
Germ cell mutagenicity:	Based on available data the classification criteria are not met.
Carcinogenicity:	Based on available data the classification criteria are not met.
Reproductive toxicity:	Based on available data the classification criteria are not met.
STOT-single exposure:	Based on available data the classification criteria are not met.
STOT-repeated exposure:	Based on available data the classification criteria are not met.
Aspiration hazard:	Based on available data the classification criteria are not met.

Information about hazardous ingredients in the mixture

Ingredient	CAS	EC	LD50/ATE Oral (mg/kg)	LD50/ATE Dermal (mg/kg)	LC50/ATE Inhalation	LC50 Route
Allyl disulfide	2179-57-9	218-548-6	260	3600	Not available	Not available

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Diallyl trisulfide	2050-87-5	218-107-8	500	Not available	Not available	Not available
Dimethyl disulfide	624-92-0		385	Not available	1310	Gas

Refer to Sections 2 and 3 for additional information.

11.2 Information on other hazards

Not Applicable

Section 12. Ecological information

12.1 Toxicity:

Toxic to aquatic life with long lasting effects.

Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability: Not available

12.3 Bioaccumulative potential: Not available

12.4 Mobility in soil: Not available

12.5 Results of PBT and vPvB assessment:

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6 Endocrine disrupting properties: Not Applicable

12.7 Other adverse effects: Not available

Section 13. Disposal considerations

13.1 Waste treatment methods:

Dispose of in accordance with local regulations. Avoid disposing into drainage systems and into the environment. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. Transport information

	14.1 UN number:	14.2 UN Proper Shipping Name:	14.3 Transport hazard class (es):	Sub Risk:	14.4 Packing Group:
UN Model Regulations	UN1197	EXTRACTS, LIQUID	3	-	III
IMDG	UN1197	EXTRACTS, LIQUID (Dimethyl disulfide) MARINE POLLUTANT	3	-	III
ADR,RID,ADN	UN1197	EXTRACTS, LIQUID	3	-	III
ICAO TI	UN1197	EXTRACTS, LIQUID	3	-	III

14.5 Environmental hazards:

This is classified as an environmentally hazardous substance under the UN Model Regulations. This is classified as a Marine Pollutant under the IMDG Code.

14.6 Special precautions for user:

None additional

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14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

Not applicable

Section 15. Regulatory information

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

Water Hazard Class (WGK): 3

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

Section 16. Other information

Concentration % Limits: SCI 2=16.67% EDI 2=16.39% SS 1=1.67% EH C3=25.00%

Total Fractional Values: SCI 2=6.00 EDI 2=6.10 SS 1=60.00 EH C3=4.00

Key to revisions:

Concentration % Limits

SECTION 3: Composition/information on ingredients

Total Fractional Values

Key to abbreviations:

Abbreviation	Meaning
Acute Tox. 3	Acute Toxicity - Oral Category 3
Acute Tox. 3	Acute Toxicity - Inhalation Category 3
Acute Tox. 4	Acute Toxicity - Oral Category 4
Aquatic Acute 1	Hazardous to the Aquatic Environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the Aquatic Environment - Long-term Hazard Category 1
Eye Irrit. 2	Eye Damage / Irritation Category 2
Flam. Liq. 3	Flammable Liquid, Hazard Category 3
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.
P210	Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P242	Use only non-sparking tools.

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P243	Take precautionary measures against static discharge.
P261	Avoid breathing vapour or dust.
P264	Wash hands and other contacted skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/face protection.
P301/310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301/312	IF SWALLOWED: call a POISON CENTER or doctor/physician if you feel unwell.
P302/352	IF ON SKIN: Wash with plenty of soap and water.
P303/361/353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304/340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P311	Call a POISON CENTRE or doctor/physician.
P330	Rinse mouth.
P333/313	If skin irritation or rash occurs: Get medical advice/attention.
P337/313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370/378	In case of fire: Use carbon dioxide, dry chemical, foam for extinction.
P391	Collect spillage.
P403/233	Store in a well-ventilated place. Keep container tightly closed.
P403/235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to approved disposal site, in accordance with local regulations.
STOT SE 3	Specific Target Organ Toxicity (Single Exposure) Category 3
Skin Irrit. 2	Skin Corrosion / Irritation Category 2
Skin Sens. 1B	Sensitization - Skin Category 1B

The information in this safety data sheet is to the best of our knowledge true and accurate but all data, instructions, recommendations and/or suggestions are made without guarantee.

Norfolk
Essential Oils