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## *Safety Data Sheet*

# **Organic Sweet Orange Essential Oil**

*(Citrus sinensis)*

### **Safety Data Sheet version 2**

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#### **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

##### 1.1. Product identifier

Identification of the substance:

Trade name: Sweet orange oil  
CAS number: 8028-48-6  
EC number: 232-433-8  
REACH number:

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

Recommended use:

Flavours

Fragrances

Uses advised against:

None known

##### 1.3. Details of the supplier of the safety data sheet

Company:

NHR Organic Oils 24 Chatham Place Brighton BN1 3TN UK

Tel. + 44 01273 746505

##### 1.4. Emergency telephone number








Tel. + 44 01273 746505

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#### **SECTION 2: Hazards identification**

##### 2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

-  Warning, Flam. Liq. 3, Flammable liquid and vapour.
-  Danger, Asp. Tox. 1, May be fatal if swallowed and enters airways.
-  Warning, Skin Irrit. 2, Causes skin irritation.
-  Warning, Eye Irrit. 2, Causes serious eye irritation.
-  Warning, Skin Sens. 1B, May cause an allergic skin reaction.
-  Warning, Aquatic Acute 1, Very toxic to aquatic life.
-  Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

## 2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H226 Flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash ... Thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P391 Collect spillage.

Special Provisions:

None

Contains

(R)-p-mentha-1,8-diene; d-limonene

myrcene: May produce an allergic reaction.

ALFA PINENE: May produce an allergic reaction.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

## 2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

Other Hazards:

No other hazards

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Identification of the substance:

Chemical characterization: Sweet orange oil

Product type and use: Add here other product type

CAS number: 8028-48-6

EC number: 232-433-8

REACH number:

Qty	Name	Ident. Number	Classification
90% - 100%	(R)-p-mentha-1,8-diene; d-limonene	Index number: 601-096-00-2	2.6/3 Flam. Liq. 3 H226
		CAS: 5989-27-5	3.2/2 Skin Irrit. 2 H315
		EC: 227-813-5	3.4.2/1B Skin Sens. 1B H317
			3.10/1 Asp. Tox. 1 H304

			4.1/A1 Aquatic Acute 1 H400 M=1. 4.1/C3 Aquatic Chronic 3 H412
1% - 3%	myrcene	CAS: 123-35-3 EC: 204-622-5 REACH No.: 01-21195143 21-56-0000	2.6/3 Flam. Liq. 3 H226 3.10/1 Asp. Tox. 1 H304 3.2/2 Skin Irrit. 2 H315 3.3/2 Eye Irrit. 2 H319 3.4.2/1B Skin Sens. 1B H317 4.1/C1 Aquatic Chronic 1 H410
0.5% - 1%	ALFA PINENE	CAS: 7785-26-4 EC: 232-077-3	2.6/3 Flam. Liq. 3 H226 3.1/4/Oral Acute Tox. 4 H302 3.10/1 Asp. Tox. 1 H304 3.2/2 Skin Irrit. 2 H315 3.4.2/1 Skin Sens. 1 H317 4.1/A1 Aquatic Acute 1 H400 4.1/C1 Aquatic Chronic 1 H410

3.2. Mixtures  
N.A.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

### 4.2. Most important symptoms and effects, both acute and delayed

If ingested, it may cause temporary irritation to the gastrointestinal (digestive) tract.

Irritating to skin or mucous membranes (inflammation). May produce an allergic reaction (rash, urticaria).

### 4.3. Indication of any immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media:

CO2 or Dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

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- None in particular.
- 5.2. Special hazards arising from the substance or mixture  
Do not inhale explosion and combustion gases.  
Burning produces heavy smoke.
- 5.3. Advice for firefighters  
Use suitable breathing apparatus .  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Move undamaged containers from immediate hazard area if it can be done safely.
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## **SECTION 6: Accidental release measures**

- 6.1. Personal precautions, protective equipment and emergency procedures  
Wear personal protection equipment.  
Remove all sources of ignition.  
Remove persons to safety.  
See protective measures under point 7 and 8.
- 6.2. Environmental precautions  
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.  
Retain contaminated washing water and dispose it.  
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.  
Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up  
Wash with plenty of water.
- 6.4. Reference to other sections  
See also section 8 and 13
- 

## **SECTION 7: Handling and storage**

- 7.1. Precautions for safe handling  
Avoid contact with skin and eyes, inhalation of vapours and mists.  
Don't use empty container before they have been cleaned.  
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.  
See also section 8 for recommended protective equipment.  
Advice on general occupational hygiene:  
Contaminated clothing should be changed before entering eating areas.  
Do not eat or drink while working.
- 7.2. Conditions for safe storage, including any incompatibilities  
Dry area, unopened containers, optimum temp. 11-18 °C  
Store at below 20 °C. Keep away from unguarded flame and heat sources. Avoid direct exposure to sunlight.  
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.  
Keep away from food, drink and feed.  
Incompatible materials:  
None in particular.  
Instructions as regards storage premises:  
Cool and adequately ventilated.
- 7.3. Specific end use(s)  
None in particular
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## **SECTION 8: Exposure controls/personal protection**

- 8.1. Control parameters  
No occupational exposure limit available  
DNEL Exposure Limit Values  
N.A.  
PNEC Exposure Limit Values  
N.A.

## 8.2. Exposure controls

Eye protection:

Eye glasses.

Protection for skin:

Chemical protection clothing.

Protection for hands:

NR (natural rubber, natural latex).

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	N.A.	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	95 °C	--	--
Boiling point or initial boiling point and boiling range:	N.A.	--	--
Flammability:	Flam. Liq. 3, H226	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	49 ° C	EN ISO 1516	--
Auto-ignition temperature:	235 °C	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	N.A.	--	--
Solubility in water:	NO	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	4.38	--	--
Vapour pressure:	186.4 Pa @ 25 °C	--	--
Density and/or relative density:	0.847	--	--
Relative vapour density:	N.A.	--	--

#### Particle characteristics:

Particle size:	N.A.	--	--
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### 9.2. Other information

Properties	Value	Method:	Notes
Explosive properties:	None	--	--

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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

None

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- 10.2. Chemical stability  
the product is stable
- 10.3. Possibility of hazardous reactions  
It may catch fire on contact with oxidising mineral acids, and powerful oxidising agents.
- 10.4. Conditions to avoid  
high temperatures, flames or other heat sources
- 10.5. Incompatible materials  
No risk of reaction or danger in case of contact with other materials
- 10.6. Hazardous decomposition products  
no risk of dangerous decomposition

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## SECTION 11: Toxicological information

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

Toxicological information of the product:

Sweet orange oil - CAS: 8028-48-6

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 5000 mg/kg - Duration: 14 days

Test: LD50 - Route: Dermal - Species: Rabbit > 5000 mg/kg - Duration: 14 days

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Dermal - Species: Rabbit = 1.7 - Duration: 72h - Notes:  
Erythema score n/5

Test: Skin Corrosive - Route: Dermal - Species: Rabbit = 2.0 - Duration: 72h - Notes:  
Oedema score n/5

Toxicological information of the main substances found in the product:

N.A.

If not differently specified, the information required in Regulation (EU)2020/878 listed below must be considered as N.A.:

- a) acute toxicity;
- b) skin corrosion/irritation;
- c) serious eye damage/irritation;
- d) respiratory or skin sensitisation;
- e) germ cell mutagenicity;
- f) carcinogenicity;
- g) reproductive toxicity;
- h) STOT-single exposure;
- i) STOT-repeated exposure;
- j) aspiration hazard.

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

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## SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

Sweet orange oil - CAS: 8028-48-6

a) Aquatic acute toxicity:

Endpoint: EL50 - Species: Danio rerio = 5.65 mg/l - Duration h: 96 - Notes: Study report, 2011

Endpoint: LC50 - Species: Danio rerio = 2.76 mg/l - Duration h: 96 - Notes: Study report, 2011

Endpoint: EL50 - Species: Daphnia = 1.1 mg/l - Duration h: 48 - Notes: Study report, 2007

Endpoint: NOEL - Species: Daphnia = 0.48 mg/l - Duration h: 48 - Notes: Study report, 2007

d) Terrestrial toxicity:

e) Plant toxicity:

12.2. Persistence and degradability

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- N.A.
- 12.3. Bioaccumulative potential  
N.A.
- 12.4. Mobility in soil  
N.A.
- 12.5. Results of PBT and vPvB assessment  
vPvB Substances: None - PBT Substances: None
- 12.6. Endocrine disrupting properties  
No endocrine disruptor substances present in concentration  $\geq 0.1\%$
- 12.7. Other adverse effects  
None

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### SECTION 13: Disposal considerations

- 13.1. Waste treatment methods  
Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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### SECTION 14: Transport information

- 14.1. UN number or ID number  
ADR-UN number: 1197  
IATA-UN Number: 1197  
IMDG-UN Number: 1197
- 14.2. UN proper shipping name  
ADR-Shipping Name: EXTRACTS, LIQUID  
IATA-Shipping Name: EXTRACTS, LIQUID  
IMDG-Shipping Name: EXTRACTS, LIQUID
- 14.3. Transport hazard class(es)  
ADR-Class: 3  
ADR-Label: Flamable liquid  
IATA-Class: 3  
IATA-Label: Flamable liquid  
IMDG-Class: 3
- 14.4. Packing group  
ADR-Packing Group: III  
IATA-Packing group: III

IMDG-Packing group:	III
14.5. Environmental hazards	
IMDG-EMS:	F-E
14.6. Special precautions for user	
ADR-Transport category (Tunnel restriction code):	D/E
Rail (RID):	3
IATA-Passenger Aircraft:	355
IATA-Cargo Aircraft:	366
IMDG-Shipping Name:	EXTRACTS, LIQUID
14.7. Maritime transport in bulk according to IMO instruments	
N.A.	

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## SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) n. 2020/878

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Regulation (EU) n. 2017/776 (ATP 10 CLP)

Regulation (EU) n. 2018/669 (ATP 11 CLP)

Regulation (EU) n. 2018/1480 (ATP 13 CLP)

Regulation (EU) n. 2019/521 (ATP 12 CLP)

Regulation (EU) n. 2020/217 (ATP 14 CLP)

Regulation (EU) n. 2020/1182 (ATP 15 CLP)

Regulation (EU) n. 2021/643 (ATP 16 CLP)

Regulation (EU) n. 2021/849 (ATP 17 CLP)

Regulation (EU) n. 2022/692 (ATP 18 CLP)

Regulation (EU) n. 2023/707

Regulation (EU) n. 2023/1434 (ATP 19 CLP)

Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3

Restriction 40

Restrictions related to the substances contained:

Restriction 75

Volatile Organic compounds - VOCs = 0.00 g/l

Volatile CMR substances = 0.00 %

Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %

Organic Carbon - C = 0.00

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).  
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):  
Seveso III category according to Annex 1, part 1  
Product belongs to category: P5c, E1, E2

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

### SECTION 16: Other information

Full text of phrases referred to in Section 3:

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H304 May be fatal if swallowed and enters airways.

H400 Very toxic to aquatic life.

H412 Harmful to aquatic life with long lasting effects.

H319 Causes serious eye irritation.

H410 Very toxic to aquatic life with long lasting effects.

H302 Harmful if swallowed.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1B	3.4.2/1B	Skin Sensitisation, Category 1B
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 3, H226	On basis of test data
Asp. Tox. 1, H304	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Skin Sens. 1B, H317	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 2, H411	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre,  
Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class