

GREEN MANDARIN OIL

Ref. 29135

Version 2RME07 (Revision Number: 2 - Revision Date: November 22, 2023)

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1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

1.1 Product identification

product (trade name): **Green Mandarin Oil - Ref. 29135**
 EC name/registration name: Mandarin orange, ext.
 EC number: 284-521-0
 CAS number (EC inventory): 84929-38-4
 REACH registration number: 01-2120074120-72-0004

1.2 Relevant identified uses of the substance and uses advised against

relevant uses: odour agent / flavouring agent - ingredient for industrial manufacturing.
 uses advised against: not for personal use in this form or concentration.

1.3 Details of the supplier of the safety data sheet

company: CAPUA 1880 s.r.l. - Zona Industriale, 89052 Campo Calabro (RC) - ITALY • www.webcapua.com
 telephone number: phone: +390965793901 • fax: +390965797111/757792
 responsible person: Dr. Gianfranco Capua (CEO) • phone: +3909657939236 • mail: sales@webcapua.com
 manufacturing plant: Zona Industriale, 89052 Campo Calabro (RC) - ITALY
 competent person SDS: mail: legis@webcapua.com

1.4 Emergency telephone number

supplier: available on office hours: 9:30÷17:03 (GMT+1) phone: +390965793901
 (languages: IT, EN, FR, DE, ES) - other time: +393483852033 (languages: IT, EN, FR).
 poison control center: Azienda Ospedaliera Niguarda Ca' Granda (MILANO - ITALY) +390266101029
 (languages: IT, EN).

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance

Reg. (EC) No 1272/2008:	Flam. Liq. 3	Asp. Tox. 1	Skin Irrit. 2	Skin Sens. 1	Aquatic Chronic 2
categorie pericolo	FL3	AH1	SCI2	SS1	EHC2
indicazioni pericolo	H226	H304	H315	H317	H411
pittogrammi pericolo	GHS02	GHS08	GHS07		GHS09

2.2 Label elements

hazard pictograms:



signal word: danger
 hazard statements: H226, H304, H315, H317, H411
 precautionary statements: P210, P273, P280, P301/310, P331, P403+P235

2.3 Other hazards

Ecological information:

according to Annex XIII of REACH Regulation, the substance contains no constituent considered either Persistent, Bioaccumulative and Toxic (PBT), or very Persistent and very Bioaccumulative (vPvB) at a concentration equal to or greater than 0.1%.

The substance contains no constituent identified as having endocrine disrupting properties according to REACH Article 59(1) or in accordance with the criteria set out in Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1%.

Toxicological information:

the substance contains no constituent identified as having endocrine disrupting properties according to REACH Article 59(1) or Commission Delegated regulation (EU) 2017/2100 at a concentration equal to or greater than 0.1%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

botanical origin: *Citrus reticulata*, BLANCO
 production process: obtained by physical means from the outer part of fresh mandarin fruits.
 status: 100% Natural Complex Substance
 EU name: Mandarin orange, ext.
 EC number: 284-521-0
 CAS number (EC inventory): 84929-38-4
 other CAS number: 8008-31-9
 REACH status: registered substance
 tonnage band: between 10 to 100 tonnes/year

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3.1.1 Substance: main constituents & typical values

common name	EINECS	CAS	hazards classification	content (%)
limonene	227-813-5	5989-27-5	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 3;H412	64.00÷89.00
γ-terpinene	202-794-6	99-85-4	Skin Irrit. 3;H316 Repr. 2;H361 Flam. Liq. 3;H226 Asp. Tox. 1;H304 Acute Tox. 5 (Oral);H303	5.00÷25.00
α-pinene	201-291-9	80-56-8	Flam. Liq. 3;H226 Acute Tox. 4 (Oral);H302 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	0.50÷4.00
β-pinene	204-872-5	127-91-3	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	0.30÷3.00
myrcene	204-622-5	123-35-3	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Eye Irrit. 2A;H319 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 2;H411	1.00÷3.00

4. FIRST AID MEASURES

4.1 Description of first aid measures

general information:	If health disorder happens, call for medical help immediately . Immediately remove any clothing soiled by the product.
inhalation:	move outdoor and breath fresh air for at least 15 minutes - seek medical attention.
contact with the skin:	In case of unconsciousness place patient stably in side position for transportation. remove contaminated clothing and wash with water and soap the contaminated part - make sure you have eliminated the contamination - in case of complaints seek medical attention. Do not expose contaminated part directly to Sun light before contamination has been eliminated.
contact with the eyes:	abundant eye-wash for several minutes with pure water, make sure you have eliminated the contamination - in case of persistent eye irritation seek medical attention.
ingestion:	ask immediately medical assistance - mouth washing with water and do not provoke vomiting .

4.2 Most important symptoms and effects, both acute and delayed

symptoms:	inhalation: can cause slight headache - contact: can cause eye irritation - can cause skin rash - can cause skin phototoxicity.
acute and delayed effects:	no post-disorder effects are reported.

4.3 Indication of any immediate medical attention and special treatment needed

immediate medical assistance:	see point 4.1.
immediate/special treatment:	see point 4.1.
first aid specific means:	eye wash fountain / safety shower should be available in the work area.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

suitable extinguishing agents:	SMALL FIRE: use CO ₂ , foam, dry powder - LARGE FIRE: use water spray or fog - cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
unsuitable extinguishing agents:	pressurized water jet.

5.2 Special hazards arising from the substance

vapours may form explosive mixture with air - in case of fire, the following can be released: carbon monoxide (CO), carbon dioxide (CO₂), smoke, soot.

5.3 Advice for firefighters

standard procedure for chemical fires - spray extinguishing media to base of flames - use adequate protections for respiratory apparatus and protection bodysuits.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

for non emergency personnel:	in case of unintentional important release of the product in enclosed space use respiratory protection (Gas filter A, Colour code brown: consider the maximum duration for wear) must be worn. Use insulating device for respiratory protection with an independent air supply in circumstances which are unclear - use adequate protections solvent resistant: security shoes, bodysuit, gloves and protective goggles solvent-resistant (see section 8).
for emergency responders:	as per non-emergency personnel.
emergency procedures:	remove any ignition source and ensure adequate ventilation in working areas following accidental releases.

6.2 Environmental precautions

keep away from drains - keep away from surface and ground water.

6.3 Methods and material for containment and cleaning up

keep away from heat and use non-combustible absorbing sawdust (sand, specific binder) - using suitable pumping systems for inflammable materials. Refer to section 13 for the appropriate methods of waste treatment.

6.4 Reference to other sections

section 4, 8 & 13

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7. HANDLING AND STORAGE

7.1 Precautions for safe handling

safe handling: during handling keep original container closed - avoid contact with skin and eyes - wear adequate protective gloves and eye/face protection - avoid to place or handle near any sources of ignition - avoid exposing to high temperature during processing - maintain adequate local and general ventilation where product is handled.

hygiene at work: do not ingest or apply to the skin as such - no smoking - remove contaminated clothing - good personal washing routines should be followed - if at risk of contamination, foods, beverages and other articles of consumption must not be stored or consumed at the work areas.

7.2 Conditions for safe handling, including any incompatibilities

container: to be stored in stainless steel drums, preferably under inert atmosphere (nitrogen) with minimum head space, protected from day-light. • **take note:** the container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing.

conditions: stored in a dry, aerated place, away from any heat source and ignition source.

temperature: from 5 °C to 21 °C.

7.3 Specific end uses

use as odour agent / flavouring agent - the information of this section are not related to the use of the product in combination with any other material or any other process altering its characteristics.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

8.1 Control parameters

occupational exposure limit: Component with limit values that require monitoring at the workplace:
CAS 5989-27-5, (R)-p-mentha-1,8-diene
AGW (Germany): 110 mg/m³, 20 ppm, 2(II); DFG, Sh, Y

8.2 Exposure control

refer to the Exposure Scenario document in Annex I.

8.2.1 Appropriate engineering controls

where appropriate, use closed system to transfer and/or process this material - if appropriate, isolate mixing rooms and other areas where this material is used or openly handled - maintain these areas under negative air pressure relative to the rest of the plant.

8.2.2 Individual protection measures, such as personal protective equipment



eye/face protection: protective goggles with built-in-frame tested to EN166 (should be checked regularly).

skin protection - hand: suitable gloves tested to EN374 (should be checked regularly) - always use with clean, dry hands.



skin protection - other: protective work clothing solvent resistant (should be checked regularly).

respiratory protection: not necessary in adequate local with general ventilation - avoid breathing vapors.

thermal hazards: none.

8.2.3 Environmental exposure controls

the usual precautions for safe handling have to be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

appearance: liquid
 colour: green to dark green-brownish
 odour: citrusy
 odour threshold: N/D
 pH: N/A
 initial boiling point (& range): 160 °C at 101.3 kPa
 melting point/freezing point: clear mobile liquid at 20 degrees Celsius - turbid mobile liquid at -25°C after 72h
 flash point: 51 °C (123.8 ° F) at 1012 mbar
 evaporation rate: N/D
 upper/lower explosive limits: N/D
 vapour pressure: 208.7 Pa at 25°C
 vapour density: N/D
 relative density d^{20}_4 : 0.8400÷0.8600
 solubility: in alcohol & other oils • water solubilities of the known constituents of mandarin oil was found by calculation to be 2.6 - 93.066 mg/L at 25°C.
 partition coefficient n-octanol/H₂O: 4.27÷4.28 calculated for constituents - 97% of constituents have log Kow > 4
 auto-ignition temperature: 235 °C at 1013 hPa.
 decomposition temperature: N/D
 viscosity: N/D
 explosive properties: none
 oxidizing properties: none

9.2 Other information

9.2.1. Information with regard to physical hazard classes

none

9.2.2. Other safety characteristics

none

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10. STABILITY AND REACTIVITY

10.1 Reactivity

This substance does not react with water - the substance is unreactive if it is stored according to the recommendations in point 7 and in accordance with the identified uses (see subsection 1.2).

10.2 Chemical stability

stable substance when stored according to recommendations in Section 7 and in accordance with the identified uses (see subsection 1.2). • **shelf life:** 18 months from the date of production, in the recommended storage conditions (see Section 7).

10.3 Possibility of hazardous reactions

none if used according to storage & handling conditions (see Section 7) & identified uses (see subsection 1.2).

10.4 Conditions to avoid

avoid exposure to any heat source.

10.5 Incompatible materials

avoid exposure to oxidizing agents.

10.6 Hazardous decomposition products

no known hazardous decomposition products under recommended storage & handling conditions - in case of combustion: carbon monoxide (CO), carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

acute toxicity (oral):	LD50: > 5000 mg/kg bw (male) (equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity).
acute toxicity (dermal):	LD50: > 5000 mg/kg (method: equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity).
acute toxicity (other routes):	not determined.
severe eyes damages/irritations:	not determined.
respiratory sensitization:	not determined.
dermal sensitization:	considered as a skin sensitizer because of the content of limonene and/or methyl N-methylantranilate
mutagenicity:	no adverse effect observed (negative).
carcinogenicity:	not determined.
toxicity for reproduction:	not determined as no required (ref: ECHA-09-FS-05-EN).
developmental toxicity:	not determined as no required (ref: ECHA-09-FS-05-EN).
STOT-exp. repeated:	route Inhalation DNEL: 23.3 mg/m ³ – route Dermal DNEL: 6.67 mg/kg bw/day
STOT-exp. single:	not determined
aspiration hazard:	not determined - can be fatal if swallowed and enters airways

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

the substance contains no constituent identified as having endocrine disrupting properties according to REACH Article 59(1) or Commission Delegated regulation (EU) 2017/2100 at a concentration equal to or greater than 0.1%.

11.2.2 Other information

no data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

aquatic environment:	not determined.
acute - fish (semi-static freshwater):	LL50 (96 h): > 100 mg/L as WAF – EL0 (96 h): 10 mg/L as WAF- OECD Guideline 203 (Fish, Acute Toxicity Test)
acute - aquatic invertebrates (static freshwater):	48h-EL50 = 8.9 mg/l. OECD Guideline 202 (<i>Daphnia sp.</i> Acute Immobilisation Test)
acute - algae & aquatic plants (static freshwater):	72h-EL50: 9.7 mg/L, 72h-EL10: 7.8 mg/l as WAF
acute - other organisms:	not determined.
chronic:	not determined.

12.2 Persistence and degradability

this substance is considered as a NCS readily biodegradable and therefore is not persistent.

12.3 Bioaccumulative potential

as the constituents are readily biodegradable bioaccumulation is not expected.

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12.4 Mobility in soil

this substance is considered as a readily biodegradable NCS. Based on the ready biodegradability of the NCS, simulation tests in surface water, sediment and soil are not required.

12.5 Results of PBT and vPvB assessment

according to Annex XIII of REACH Regulation, the substance contains no constituent considered either Persistent, Bioaccumulative and Toxic (PBT), or very Persistent and very Bioaccumulative (vPvB) at a concentration equal to or greater than 0.1%.

12.6 Endocrine disrupting properties

the substance contains no constituent considered to have endocrine disrupting properties according to REACH Article 59(1) or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0.1%.

12.7 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

the containers used for this product must completely empty before disposal - dispose product and packaging in accordance with federal, state and local environmental control regulations - dispose of this product in the environment is illegal.

14. TRANSPORT INFORMATION

14.1 UN Number

1197

14.2 UN proper shipping name

extracts, liquid, for flavour or aroma

14.3 Transport hazard class

Class 3

14.3.1 Transport hazard symbols

for IMDG-ADR/RID: fish and tree - flame
for ICAO/IATA: flame



14.4 Packing group

III

14.5 Environmental hazards

marine pollutant

14.6 Special precautions for user

this product contains constituents flammables & dangerous for the environment - in case of pouring out, make sure to label new package accordingly, reproducing original label with relevant symbols.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

N/A

15. REGULATORY INFORMATION

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

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

15.2 Chemical Safety Assessment

A study for the chemical safety assessment of the substance was conducted during the preparation of registration for REACH.

16. OTHER INFORMATION

a Revision

Version 1RME07 - Revision Number 0 (October 18, 2023) - FIRST ISSUE			
Edited Section	Description	from	to
n/a	n/a	n/a	n/a
Version 2RME07 - Revision Number 1 (November 22, 2023)			
Edited Section	Description	from	to
Shelf life update	-	365 days	18 months

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b Legend

CLP: Regulation (EC) No 1272/2008 / **CSR:** Chemical Safety Report / **Asp. Tox.:** aspiration hazard / **Aquatic Chronic:** aquatic hazard / **Skin Irrit.:** skin irritation hazard / **Skin Sens.:** skin sensitization hazard / **Flam. Liq.:** flammable liquid hazard / **WAF:** Water Accommodated Fractions / **LD50:** Lethal Dose 50 / **LL50:** Lethal Loading 50 / **EL50:** Effective Loading 50 / **NOAEL:** No-Observed Adverse Effect Level / **NOEL:** No-Observed Effect Level / **LOEL:** Lowest Observed Effect Level / **OECD:** Organization for Economic Co-operation and Development

c Literature references and source of data

CSR - RIFM - FEMA database

d List of relevant hazard and precautionary statements

H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H411: Toxic to aquatic life with long lasting effects.
P210: Keep away from heat/sparks/open flames/... /hot surfaces.... No smoking.
P273: Avoid release to the environment.
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.
P403+P235: Store in a well-ventilated place. Keep cool.

e Inventories & other

	CAS	ID	
EINECS	84929-38-4	284-521-0	
TSCA	8008-31-9	-	
IECSC	84929-38-4 / 8008-31-9	-	
KECI	8008-31-9	KE-27033	
DSL	8008-31-9	-	
AICS	84929-38-4 / 8008-31-9	-	
ENCS - ISHL	84929-38-4 / 8008-31-9	11-(1)-812	
NZIOC	84929-38-4 / 8008-31-9	-	
PICCS	84929-38-4 / 8008-31-9	-	
FDA	-	21CFR182.20	
CE	-	142	
FEMA	8008-31-9	2657	
RIFM	84929-38-4 / 8008-31-9	250-G2.5	
INCI	84929-38-4	-	citrus nobilis peel oil expressed
WGK	84929-38-4	3822	Class 3
HS Code	-	3301192000	EU TARIC

f contaminants

this product has been analyzed to ensure that the levels of heavy metals, phthalates and allergens are respectively comply with the relevant regulations.

g Further information

the information on this SDS is correct to the best of our knowledge, covering the involved product at the date of its publication. They apply to the product as such as per the described specifications. The information are not related to the use of the product in combination with any other material or any other process altering its characteristics. The end user should apply to the existing normative and laws covering the use of the product, the hygiene and security at work. The container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing. Upon receipt, our product must be stored as soon as possible in compliance with section 7 of this SDS. The information given in this SDS is in accordance with the Reg. (EU) No 2020/878.

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ANNEX I

Exposure Scenarios

Exposure Scenarios -> 