

CERTIFICATE of ANALYSIS
BATCH NUMBER: 4380407

Expiry date December 2022

botanical origin	Citrus spp.
chemical identification & grade	100% Natural Complex Substance

5. ANALYSIS DATA *Physical, chemical, GC & HPLC*

PHYSICAL & CHEMICAL	value	range	measuring instrument
appearance	liquid	liquid	<i>sensorial</i>
colour	dark green	greenish to dark green	<i>sensorial</i>
odour	APS	-	<i>sensorial</i>
relative density	d_4^{20} 0.8439	0.8390 ÷ 0.8490	<i>Anton Paar DMA 4500</i>
optical rotation	α_D^{20} +89.60°	+87.00° ÷ +97.00°	<i>Optical Activity POLAAR 20</i>
refractive index	n_D^{20} 1.4734	1.4690 ÷ 1.4790	<i>Anton Paar RXA 170</i>
peroxides	11 mmol/l	<20 mmol/l	<i>cdR FOODLAB</i>
GC	value	range	measuring instrument
pinenes ($\alpha+\beta$)	1.80%	< 4.00%	<i>PerkinElmer Instruments: Gas Chromatograph "Clarus 680"</i>
myrcene	1.70%	≤ 3.00%	
limonene	87.60%	82.00% ÷ 92.00%	
γ-terpinene	7.70%	5.00% ÷ 9.00%	
linalool	0.10%	≤ 0.40%	
citronellol	<0.01%	<0.03%	
citral	<0.01%	<0.10%	
geraniol	<0.01%	≤ 0.05%	
dimethylantranilate	0.18%	<0.30%	



GMO Statement

PRODUCT NAME: Mandarin Green

MADAR Corporation Limited can confirm that the above listed product is GMO Free.

06/03/2019

MANDARIN OIL GREEN

Print Date: 18/08/2017 - Version 1BME01 (Revision Number: 1 - Revision Date: November 2015)

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

1.1 Product identifier

product trade name: **Mandarin Oil Green**
 REACH / CLP: all substances (ingredients) are preregistered / notified or registered.

1.2 Relevant identified uses of the mixture 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: MADAR Corporation Limited
 19-20 Sandleheath Industrial Estate
 Fordingbridge
 Hampshire, SP6 1PA
 approved sellers: Cosmetic Butters, Mystic Moments, New Directions, World of Moulds

1.4 Emergency telephone number

supplier: 01425 655555
 poison control centre: contact your local centre

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Reg. (EC) No 1272/2008:	Asp. Tox. 1	Aquatic Chronic 1	Skin Irrit. 2	Skin Sens. 1	Flam. Liq. 3
hazard categories:	AH1	EHC1	SCI2	SS1	FL3
hazard statements:	H304	H410	H315	H317	H226
hazard pictograms:	GHS08	GHS09	GHS07		GHS02

2.2 Label elements

hazard pictograms:



signal word: danger
 hazard statements: H304, H410, H315, H317, H226
 precautionary statement: P210, P241, P262, P273, P280, P301/310, P303/361/353, P331, P405, P501

2.2.1 Additional information

for full text of relevant hazard and precautionary statements see section 16-e.

2.3 Other hazards

N/D

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

N/A

3.2 Mixture

production process: obtained from citrus essential oils & citrus by-products (mainly from Citrus reticulata, BLANCO)
 chemical identification: composition consisting of citrus essential oils and citrus derivatives
 EU chemical name: N/A
 EC number: N/A
 CAS number (EC inventory): N/A

3.2.1 Mixture: main hazardous constituents

chemical name	EINECS	CAS	CLP classification	content (typical %)
limonene	227-813-5	5989-27-5	AH1, EHC1, FL3, SCI2, SS1B	80 ÷ 95
γ-terpinene	202-794-6	99-85-4	AH1, FL3, SCI3, ATO5	5 ÷ 9
myrcene	204-622-5	123-35-3	AH1, EDI2A, FL3, SCI2	<3

3.2.2 Additional information

for full text of relevant hazard statements see section 16 (e & e-1).

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4. FIRST AID MEASURES

4.1 Description of first aid measures

inhalation: move to fresh air for at least 15 minutes, in case of complaints seek medical attention.
 contact with the skin: 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.
 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 slight skin rash.
 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 media: SMALL FIRE: use CO₂, 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 media: 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, avoid vapour inhalation.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

for non emergency personnel: in an emergency (i.e. unintentional important release of the product in enclosed space) 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

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 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.

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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 and 20 °C.

7.3 Specific end uses

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: N/D (National and / or European)




8.2 Exposure control

a good basic standard of occupational hygiene is to be implemented (see also section 7).

8.2.1 Appropriate engineering controls

where appropriate, use closed system to transfer and 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 in handling chemicals have to be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

appearance:	liquid – greenish to dark green
odour:	citrus note
odour threshold:	N/D
pH:	N/A
initial boiling point (& range):	N/D
melting point/freezing point:	N/A
flash point:	~ 49 °C
evaporation rate:	N/D
upper/lower explosive limits:	N/D
vapour pressure:	N/D
vapour density:	N/D
relative density d_4^{20} :	0.84 (±0.01)
solubility:	in alcohol & other oils / negligible in H ₂ O
partition coefficient n-octanol/H ₂ O:	N/D
auto-ignition temperature:	N/D
decomposition temperature:	N/D
viscosity:	N/D
explosive properties:	none
oxidizing properties:	none

9.2 Other information

N/D

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10. STABILITY AND REACTIVITY

10.1 Reactivity

product not reactive with water - product not reactive if used according to storage & handling conditions & identified uses (see subsection 1.2).

10.2 Chemical stability

product stable if used according to storage & handling conditions & identified uses (see subsection 1.2). • **shelf life:** 365 days, as per recommended storage & handling conditions (see section 7).

10.3 Possibility of hazardous reactions

none if used according to storage & handling conditions (see section 7) & identified uses (see section 1 & 7).

10.4 Conditions to avoid

avoid exposure to heat.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

this preparation has not been subjected to toxicological testing as an entity but has been blended from materials with known toxicological data and hazard classification (RIFM). In view of the difficulty of using current standard toxicological evaluation techniques to predict potential hazards arising from unforeseeable potentiation, this preparation should be considered and handled as if it displayed health hazards and treated in consequence with all possible precaution:

skin corrosion/irritation:	hazard statement: H315 causes skin irritation.
skin sensitisation:	hazard statement: H317 may cause an allergic skin reaction.
aspiration hazard:	hazard statement: H304 may be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

this preparation has not been subjected to ecotoxicological testing as an entity but has been blended from materials with known ecotoxicological data and hazard classification (RIFM). In view of the difficulty of using current standard ecotoxicological evaluation techniques to predict the impact on vulnerable parts of the ecosystem, this preparation should be considered and handled as if it displayed potential environmental hazards and treated in consequence with all possible precaution:

aquatic life: hazard statement: H410 very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

this product (or all its ingredients) is to be considered as a readily biodegradable mixture; based on its ready biodegradability, this product does not fulfill the criteria for persistence.

12.3 Bioaccumulative potential

as the constituents are readily biodegradable, it is likely that they will also be biotransformed in higher organisms so a high bioaccumulation factor is actually not expected.

12.4 Mobility in soil

this product (or all its ingredients) is to be considered as a readily biodegradable mixture; based on the ready biodegradability of all of its ingredients, simulation tests in surface water, sediment and soil are not required.

12.5 Results of PBT and vPvB assessment

this product (or all its ingredients) is not classified as PBT or vPvB / CMR.

12.6 Other adverse effects

N/D

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

the containers used for this product must completely empty before disposal. Dispose product and/or contaminated packaging in accordance with federal, state and local environmental control regulations - disposal through the waste water is illegal.

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14. TRANSPORT INFORMATION

14.1 UN Number
1169

14.2 UN proper shipping name
extracts, aromatic, liquid

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

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance
no specific EU provisions and regulations apply to this product.

15.2 Chemical Safety Assessment
N/D

16. OTHER INFORMATION

a <u>Revision</u>			
Revision Number 1 (November 2015)		from	to
updating in conformity with EU Regulations		Reg. (EU) No 453/2010	Reg. (EU) No 2015/830
b <u>Legend</u>			
CLP: Regulation (EC) No 1272/2008			
Asp. Tox.: aspiration hazard			
Aquatic Chronic: aquatic hazard			
Skin Irrit.: skin irritation hazard			
Skin Sens.: skin sensitization hazard			
Flam. Liq.: flammable liquid hazard			
c <u>Literature references and source of data</u>			
RIFM - FEMA database			
d <u>Criteria for classification</u>			
H226	flammable liquid and vapour		analysis (Flash Point)
H304	may be fatal if swallowed and enters airways		concentration limit
H315	causes skin irritation		concentration limit
H317	may cause an allergic skin reaction		concentration limit
			concentration limit

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H410 very toxic to aquatic life with long lasting effects

e List of relevant hazard and precautionary statements (section 2)

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

H410 very toxic to aquatic life with long lasting effects

P241 use explosion-proof electrical/ventilating/lighting/equipment

P262 do not get in eyes, on skin or on clothing

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

P303/361/353 if on skin (or hair): remove/take off immediately all contaminated clothing. rinse skin with water/shower

P331 do not induce vomiting

P405 store locked up

P501 dispose product/container in accordance with applicable regulations

e-1 List of relevant hazard statements (section 3)

H319 causes serious eye irritation

f Inventories & other

	CAS	ID	NOTE
EINECS	various	various	all ingredients are listed
TSCA	various	-	all ingredients are listed
IECSC	various		all ingredients are listed
KECI	various	various	all ingredients are listed
DSL	various	-	all ingredients are listed
AICS	various	-	all ingredients are listed
ENCS - ISHL	various	various	all ingredients are listed
NZIOC	various	-	all ingredients are listed
PICCS	various	-	all ingredients are listed
RIFM	various	various	all ingredients are listed
HS Code	-	3302909000	EU TARIC

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 2015/830, Reg. (EC) No 1907/2006 and Reg. (EC) No 1272/2008.

Specification Sheet

MANDARIN OIL GREEN

Date: 18/08/2017 - Version 1BME01-112015

1. PRODUCT

1.1 Product identifier

product trade name	Mandarin Oil Green
relevant identified uses	odour agent / flavouring agent
botanical origin	<i>Citrus spp.</i>
origin & production process	obtained from citrus essential oils & citrus by-products (mainly from <i>Citrus reticulata</i> BLANCO)
chemical identification & grade	100% Natural Complex Substance
EU chemical name	Citrus ext.
EC number	304-454-3
CAS number (EC inventory)	94266-47-4
FEMA number	2318
FDA number	182.20
CE number	various
RIFM number	7200-G2.13
INCI name	citrus species peel oil expressed

2. PHYSICAL AND CHEMICAL PROPERTIES

2.1 Organoleptic characteristics

appearance & color	clear liquid -greenish to dark green
odor	typical mandarin note

2.2 Physical & chemical data

analysis	ranges	instruments
relative density d_4^{20}	0.8390 ÷ 0.8490	ANTON PAAR - DMA 4500
optical rotation α_D^{20}	+87.00° ÷ +97.00°	Optical Activity - POLAAR 20
refractive index n_D^{25}	1.4690 ÷ 1.4790	ANTON PAAR - RXA 170
peroxides ⁽¹⁾	<20 mmol/l	CDR - FoodLab
flash point	~49 °C (120 °F)	GRABNER - Miniflash FLP
solubility	alcohol - other oils	-

2.3 Key peaks

common name	ranges	instruments	restricted / regulated components ⁽¹⁾
pinenes ($\alpha+\beta$)	<4.00%	GC - internal method	-
myrcene	<3.00%	GC - internal method	-
limonene	82.00% ÷ 92.00%	GC - internal method	IFRA standard - EU allergen [Reg. (EC) 1223/2009]
γ -terpinene	5.00% ÷ 9.00%	GC - internal method	-
linalool	<0.40%	GC - internal method	IFRA standard - EU allergen [Reg. (EC) 1223/2009]
citronellol	<0.03%	GC - internal method	IFRA standard - EU allergen [Reg. (EC) 1223/2009]
citral	<0.10%	GC - internal method	IFRA standard - EU allergen [Reg. (EC) 1223/2009]
geraniol	<0.05%	GC - internal method	IFRA standard - EU allergen [Reg. (EC) 1223/2009]
methyl N-methylantranilate	≤0.30%	GC - internal method	IFRA standard
furocoumarins	absent	HPLC - internal method	psoralens [Reg. (EC) 1223/2009]

3. IFRA 48th: identification & quantification of all involved standards complete list ⁽¹⁾

3.1 Involved components

common name	CAS	%	status	categories
limonene	138-86-3	<92.00	specification	QRA categories (1-11)
linalool	78-70-6	<0.40	specification	QRA categories (1-11)
citronellol	106-22-9	≤0.03	restricted	QRA categories (1-11)
citral	5392-40-5	<0.10	restricted	QRA categories (1-11)
geraniol	106-24-1	<0.05	restricted	QRA categories (1-11)
methyl N-methylantranilate	85-91-6	≤0.30	restricted	SKIN categories (leave on, rinse off & non-skin contact)

4. COSMETICS REGULATION (EC) 1223/2009: identification & quantification of all involved components complete list ⁽¹⁾

4.1 Involved components

common name	CAS	%	type	annex
limonene	5989-27-5	≤92.00	allergen	III
linalool	78-70-6	<0.40	allergen	III
citronellol	106-22-9	<0.03	allergen	III
citral	5392-40-5	<0.10	allergen	III
geraniol	106-24-1	≤0.05	allergen	III

5. FOOD CERTIFICATIONS

5.1 Statements

Food	this product is solvents, preservatives and other technical adjuvants free, it is a 100% natural flavouring agent obtained by physical processes only from various botanical sources, according to Reg. (EC) N. 1334/2008 Art. 3 2 d & Code of Federal Regulation CFR Title 21 - 101.22 a 3
Food Allergens Free	this product is a 100% natural flavouring agent obtained by physical processes only from botanical sources and it does not contain any food allergens
GMO Free	this product has been extracted from non-genetically modified plants; no enzyme and/or no GMO enzymes has been used during the production process and consequently does not contain GMO or GMO-derived product

6. STORAGE / SHELF LIFE

6.1 Precautions for safe storage

container & conditions	to be stored in stainless steel drums, preferably under inert atmosphere (nitrogen) with minimum head space, protected from day-light in a dry, aerated place away from any heat source and ignition source
temperature	from 5 °C and 20 °C
shelf life	365 days, as per recommended storage conditions

¹: in conformity with the Cosmetics Regulation (EC) 1223/2009 up to 2017/237/EU Amendment and/or in conformity with the IFRA up to 48th Amendment



Vegetarian & Vegan Suitability Statement

PRODUCT NAME: Mandarin Green

MADAR Corporation Limited can confirm that the above listed product has not been tested in animals and does not contain dairy or any other animal product, by product or derivative and is therefore suitable for vegetarian and vegan use.

28/06/19