



SAFETY DATA SHEET (SDS)

Prepared in accordance with the Globally Harmonized System (GHS) and Regulation (EC) No. 1907/2006 (REACH, as amended)

SECTION 1: Identification

Parameter	Details
Product Name	Premium White Grapefruit Essential Oil
Alternative Names	White Grapefruit Oil; Grapefruit Peel Oil; Grapefruit Essential Oil
Botanical Name	<i>Citrus × paradisi</i> Macfad.
INCI Name	Citrus Paradisi Peel Oil
Plant Part	Fresh Fruit Peel
Extraction Method	Cold Expression / Mechanical Expression
Product Type	100% Natural Essential Oil / Natural Complex Substance
CAS Number	90045-43-5
EC Number	616-973-5
FEMA Number	2530
Country of Origin	Batch specific
Physical Form	Liquid

White Grapefruit Essential Oil is the volatile oil obtained by mechanical expression of the fresh peel of white grapefruit. CAS 8016-20-4 is commonly assigned to expressed grapefruit oil, while CAS 90045-43-5 is also used for grapefruit peel-derived materials.

1.2 Relevant Identified Uses

- Professional perfumery
- Fragrance compounding
- Cosmetic fragrance formulations
- Soap and toiletry products
- Home-fragrance products
- Aromatic preparations
- Laboratory evaluation
- Flavour applications only where supplied under an appropriate food-grade specification

1.3 Uses Advised Against

- Internal consumption unless expressly supplied as food grade
- Direct application to skin in undiluted form
- Use by children
- Pharmaceutical or therapeutic use without qualified professional assessment



- Any application inconsistent with the supplier specification or applicable legislation

1.4 Supplier Details

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1.5 Emergency Telephone Number

Contact the nearest poison-control centre, emergency medical service or qualified physician.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification Under Regulation (EC) No. 1272/2008

Hazard Class	Category	Hazard Statement
Flammable Liquid	Category 3	H226 Flammable liquid and vapour
Aspiration Hazard	Category 1	H304 May be fatal if swallowed and enters airways
Skin Irritation	Category 2	H315 Causes skin irritation
Skin Sensitisation	Category 1	H317 May cause an allergic skin reaction
Aquatic Acute Hazard	Category 1	H400 Very toxic to aquatic life
Aquatic Chronic Hazard	Category 1	H410 Very toxic to aquatic life with long-lasting effects

Recent supplier safety documentation for expressed white grapefruit oil consistently identifies flammability, aspiration toxicity, skin irritation, skin sensitisation and severe aquatic toxicity as the principal hazards.

2.2 Label Elements

Signal Word

Danger

Hazard 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.
- H410: Very 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.
- P233: Keep container tightly closed.
- P240: Ground and bond container and receiving equipment where bulk quantities are handled.
- P261: Avoid breathing vapours, mist or spray.
- P264: Wash hands and exposed skin thoroughly after handling.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P273: Avoid release to the environment.
- P280: Wear protective gloves, protective clothing and eye protection.
- P301+P310: IF SWALLOWED: Immediately call a poison centre or physician.
- P331: Do not induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P333+P313: If skin irritation or rash occurs: Get medical advice.
- P362+P364: Take off contaminated clothing and wash it before reuse.
- P370+P378: In case of fire: Use dry chemical, carbon dioxide or alcohol-resistant foam.
- P391: Collect spillage.
- P403+P235: Store in a well-ventilated place. Keep cool.
- P405: Store locked up.
- P501: Dispose of contents and container in accordance with applicable regulations.

2.3 Other Hazards

- Vapours may form flammable mixtures with air.
- Spilled product may create slippery surfaces.
- Oxidised citrus oil may have increased skin-sensitising potential.
- Expressed citrus oils may contain naturally occurring photoreactive furocoumarins.
- Phototoxicity depends on the variety, origin, processing method and batch-specific furocoumarin content.
- The complete natural substance has not been established as meeting PBT or vPvB criteria.
- Endocrine-disrupting properties have not been established for the complete natural substance.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS



3.1 Substance

Component	CAS Number	EC Number	Content
Citrus Paradisi Peel Oil	90045-43-5	616-973-5	100%

3.2 Representative Naturally Occurring Constituents

Constituent	CAS Number	Representative Status
d-Limonene	5989-27-5	Principal constituent
β -Myrcene	123-35-3	Naturally occurring
α -Pinene	80-56-8	Naturally occurring
β -Pinene	127-91-3	Naturally occurring
Sabinene	3387-41-5	Naturally occurring
Linalool	78-70-6	Naturally occurring
Citral	5392-40-5	Naturally occurring / trace
Nootkatone	4674-50-4	Characteristic trace constituent
Decanal	112-31-2	Naturally occurring
Octanal	124-13-0	Naturally occurring
Furocoumarins	Various	Batch dependent

White grapefruit oil is typically dominated by limonene, with myrcene and other citrus terpenes present at lower concentrations. Supplier documentation specifically identifies limonene and myrcene as hazard-driving constituents.

The exact composition varies according to cultivar, geography, maturity, peel handling, extraction, concentration and storage conditions.

SECTION 4: FIRST-AID MEASURES

4.1 Description of First-Aid Measures

Inhalation

Move the affected person to fresh air.

Keep at rest in a position comfortable for breathing.

Seek medical attention if coughing, dizziness, headache, nausea or respiratory discomfort persists.

Skin Contact

Remove contaminated clothing and footwear.



Wash affected skin thoroughly with soap and plenty of water.

Do not expose contaminated skin to direct sunlight until the material has been completely removed.

Seek medical advice if irritation, redness or rash develops.

Eye Contact

Rinse cautiously with clean water for at least 15 minutes.

Remove contact lenses if present and easy to do.

Continue rinsing.

Obtain medical advice if irritation persists.

Ingestion

Immediately call a poison centre or physician.

Do not induce vomiting because aspiration into the lungs may cause severe injury.

Rinse the mouth carefully.

Never give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects

Possible symptoms include:

- Skin redness
- Burning or irritation
- Allergic skin rash
- Eye irritation
- Coughing
- Headache
- Dizziness
- Nausea
- Gastrointestinal discomfort
- Chemical pneumonitis following aspiration
- Delayed breathing difficulty following ingestion or vomiting

4.3 Indication of Immediate Medical Attention



Immediate medical assessment is required following ingestion because of the aspiration hazard.

Monitor for delayed respiratory symptoms.

Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media

- Alcohol-resistant foam
- Dry chemical powder
- Carbon dioxide
- Water fog for cooling exposed containers

5.2 Unsuitable Extinguishing Media

Do not use a direct high-pressure water jet, as this may spread the burning liquid.

5.3 Special Hazards Arising From the Product

The product is flammable.

Vapours may travel to an ignition source and flash back.

Combustion or thermal decomposition may generate:

- Carbon monoxide
- Carbon dioxide
- Dense smoke
- Irritating organic vapours
- Aldehydes
- Partially oxidised hydrocarbons

5.4 Advice for Firefighters

Wear:

- Self-contained breathing apparatus
- Full protective clothing
- Chemical-resistant gloves



- Eye and face protection

Cool exposed containers with water spray.

Prevent contaminated fire-fighting water from entering drains or waterways.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

- Eliminate all ignition sources.
 - Ensure adequate ventilation.
 - Evacuate unnecessary personnel.
 - Avoid breathing vapours or aerosols.
 - Avoid skin and eye contact.
 - Wear suitable protective gloves, clothing and eye protection.
 - Use non-sparking tools.
 - Exercise caution because contaminated floors may be slippery.
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6.2 Environmental Precautions

- Prevent entry into drains, soil, groundwater and waterways.
 - Contain larger spills with suitable barriers.
 - Collect all recoverable material.
 - Notify the relevant environmental authority if significant contamination occurs.
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6.3 Methods for Containment and Cleaning

- Absorb with sand, earth, vermiculite, diatomaceous earth or another inert non-combustible absorbent.
 - Transfer into labelled, sealable waste containers.
 - Clean residual contamination using detergent and warm water.
 - Do not return spilled material to the original container.
 - Dispose of contaminated absorbents according to Section 13.
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SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

- Use only in a well-ventilated area.



- Keep away from heat, sparks, flames and hot surfaces.
- Take precautions against static discharge.
- Avoid breathing concentrated vapours or mist.
- Avoid skin and eye contact.
- Wear appropriate PPE.
- Do not eat, drink or smoke while handling.
- Wash hands thoroughly after handling.
- Keep the container tightly closed when not in use.
- Avoid contamination with water, oxidising agents or incompatible chemicals.
- Minimise exposure to air to reduce oxidation.

7.2 Conditions for Safe Storage

Store:

- In the original or an approved compatible container
- In a cool, dry and well-ventilated location
- Preferably between 5°C and 15°C
- Protected from heat and direct sunlight
- Away from sparks and ignition sources
- Away from strong oxidising agents
- Away from strong acids and alkalis
- Away from food, beverages and animal feed

For extended storage, refrigeration in tightly sealed, nearly full containers is recommended to minimise oxidation.

A technical data sheet for grapefruit oil recommends cool storage protected from light and checking the material before use after extended storage.

7.3 Specific End Uses

Professional fragrance, cosmetic, aromatic or flavour use only after formulation-level safety, phototoxicity, IFRA and regulatory assessment.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters

No occupational exposure limit has been established for the complete natural oil.



Applicable occupational exposure limits for individual constituents should be observed where available.

8.2 Engineering Controls

- Provide adequate general ventilation.
- Use local exhaust ventilation when handling bulk quantities.
- Use explosion-resistant ventilation equipment where required.
- Provide an emergency eyewash station.
- Provide access to washing facilities.
- Prevent vapour accumulation.

8.3 Personal Protective Equipment

Eye and Face Protection

Wear chemical splash goggles.

Use a face shield where splashing is likely.

Hand Protection

Wear nitrile, neoprene or another chemically resistant glove material.

Replace damaged or contaminated gloves promptly.

Skin and Body Protection

Wear protective clothing suitable for the scale of handling.

Avoid prolonged or repeated skin contact.

Respiratory Protection

Normally not required under adequately ventilated conditions.

Use an approved organic-vapour respirator where ventilation is insufficient.

Thermal Hazards

No special thermal protection is normally required, except during fire or heated processing.

Hygiene Measures



- Wash hands before breaks and after handling.
- Remove contaminated clothing immediately.
- Wash contaminated clothing before reuse.
- Keep contaminated work clothing away from domestic areas.
- Do not eat, drink or smoke in handling areas.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Representative Information
Physical State	Liquid
Appearance	Clear, mobile liquid
Colour	Pale yellow to yellow-green
Odour	Fresh, bright, bitter-sweet, citrus, characteristic white grapefruit peel
Odour Threshold	Not determined
Melting / Freezing Point	Not determined
Initial Boiling Point	Not determined for the complete natural substance
Flammability	Flammable liquid and vapour
Lower Explosive Limit	Not determined
Upper Explosive Limit	Not determined
Flash Point	Approximately 43–50 °C
Auto-Ignition Temperature	Not determined
Decomposition Temperature	Not determined
pH	Not applicable
Kinematic Viscosity	Not determined
Water Solubility	Insoluble or practically insoluble
Solubility in Ethanol	Soluble
Vapour Pressure	Not determined
Relative Density at 20 °C	Approximately 0.845–0.870
Refractive Index at 20 °C	Approximately 1.470–1.480
Optical Rotation	Typically strongly dextrorotatory
Partition Coefficient	Not determined for complete natural substance
Explosive Properties	Not expected to be explosive
Oxidising Properties	Not classified as oxidising

Published white grapefruit oil documentation reports flash points around the mid-40 °C range for expressed material, although exact results vary with the batch, test method and processing.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity



No dangerous reaction is expected under normal recommended conditions.

The product may oxidise when exposed to air, heat or light.

10.2 Chemical Stability

Stable when stored tightly closed under cool, dark and oxygen-limited conditions.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation is not expected.

Peroxide-forming oxidation products may develop during prolonged exposure to air.

The material may react vigorously with strong oxidising agents.

10.4 Conditions to Avoid

Avoid:

- Heat
- Sparks
- Open flames
- Hot surfaces
- Direct sunlight
- Prolonged air exposure
- Static discharge
- Contamination
- Incompatible chemicals

10.5 Incompatible Materials

- Strong oxidising agents
- Strong acids
- Strong alkalis
- Reactive halogenating agents

10.6 Hazardous Decomposition Products



Thermal decomposition may generate:

- Carbon monoxide
 - Carbon dioxide
 - Smoke
 - Irritating aldehydes
 - Organic acids
 - Oxidised terpene vapours
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SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Hazard Classes

Acute Toxicity

The complete natural oil is not generally classified for acute oral or dermal toxicity based on available representative data.

Ingestion remains hazardous because aspiration into the lungs may be fatal.

Skin Corrosion / Irritation

Causes skin irritation.

Serious Eye Damage / Irritation

May cause eye irritation following direct contact.

Respiratory Sensitisation

No classification established for the complete natural substance.

Skin Sensitisation

May cause an allergic skin reaction.

Oxidised limonene and other oxidised terpene constituents may increase sensitisation potential.

Germ Cell Mutagenicity

No classification established for the complete natural substance.

Carcinogenicity

No classification established for the complete natural substance.



Reproductive Toxicity

No classification established for the complete natural substance.

STOT – Single Exposure

No classification established.

High vapour concentrations may cause headache, dizziness or respiratory irritation.

STOT – Repeated Exposure

No classification established.

Aspiration Hazard

May be fatal if swallowed and enters airways.

Phototoxicity

Expressed citrus peel oils can contain photoreactive furocoumarins.

The phototoxic potential of white grapefruit oil shall be determined from batch-specific analytical data and the applicable IFRA Standard.

Avoid exposure of treated skin to sunlight or ultraviolet radiation unless the finished formulation has been assessed as non-phototoxic.

11.2 Likely Routes of Exposure

- Skin contact
- Eye contact
- Inhalation of concentrated vapour or spray
- Accidental ingestion

11.3 Symptoms Related to Exposure

- Skin irritation
- Redness
- Allergic rash
- Eye irritation
- Headache
- Dizziness
- Nausea



- Coughing
 - Breathing difficulty after aspiration
 - Delayed chemical pneumonitis
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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long-lasting effects.

This classification is principally associated with limonene and other hydrophobic terpene constituents.

12.2 Persistence and Degradability

No complete-product test data are available.

Many individual citrus terpene constituents are biodegradable, but rapid environmental release may still cause significant aquatic toxicity.

12.3 Bioaccumulative Potential

Hydrophobic terpene constituents may have bioaccumulative potential.

12.4 Mobility in Soil

The material is poorly soluble in water and may adsorb to soil, sediment and organic matter.

12.5 PBT and vPvB Assessment

No complete assessment is available.

The material is not expected to meet PBT or vPvB criteria based on representative constituent information.

12.6 Endocrine-Disrupting Properties

No endocrine-disrupting properties have been established for the complete natural substance.



12.7 Other Adverse Effects

- May form a film on the surface of water.
 - May interfere with oxygen transfer.
 - Avoid all uncontrolled environmental release.
 - Large spills may cause long-lasting aquatic effects.
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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

- Dispose of through an authorised chemical-waste contractor.
 - Do not discharge into drains, soil, groundwater or waterways.
 - Do not dispose of with ordinary household waste.
 - Recover or recycle suitable uncontaminated material where permitted.
 - Treat contaminated absorbents as hazardous chemical waste.
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13.2 Packaging Disposal

Empty containers may retain flammable vapours and hazardous residues.

Do not cut, weld, drill, puncture, burn or reuse uncleaned containers.

Dispose of containers according to local hazardous-waste regulations.

SECTION 14: TRANSPORT INFORMATION

Based on the representative flammability and environmental classification, expressed white grapefruit oil may be transported as an environmentally hazardous flammable liquid. The final classification must be verified against the producer's batch-specific SDS and actual flash-point result.

Transport Parameter	Representative Information
UN Number	UN 1993
UN Proper Shipping Name	Flammable Liquid, N.O.S.
Technical Name	Contains limonene
Transport Hazard Class	3
Packing Group	III
Environmental Hazard	Yes



Marine Pollutant	Yes, where applicable
ADR/RID	Class 3, environmentally hazardous
IMDG	Class 3, marine pollutant
IATA/ICAO	Class 3
Tunnel Restriction Code	Batch and shipment dependent
EmS	F-E, S-E, where applicable

Special Precautions

- Keep away from heat and ignition sources.
- Protect containers from damage and leakage.
- Keep containers upright and tightly closed.
- Observe quantity exemptions and carrier requirements.
- Verify air-transport acceptability before dispatch.

Some grapefruit-oil SDSs may apply alternate shipping entries depending on flash point, package size and environmental classification. The original producer's transport section takes precedence.

SECTION 15: REGULATORY INFORMATION

15.1 Applicable Regulations

Prepared with reference to:

- Regulation (EC) No. 1907/2006 — REACH
- Regulation (EU) 2020/878
- Regulation (EC) No. 1272/2008 — CLP
- Regulation (EC) No. 1223/2009 — Cosmetics
- Commission Regulation (EU) 2023/1545
- IFRA Standards
- ADR
- IMDG Code
- IATA Dangerous Goods Regulations
- Applicable national occupational, environmental and cosmetic legislation

15.2 Cosmetic Regulatory Considerations

Citrus Paradisi Peel Oil is recognised as a cosmetic fragrance and masking ingredient.

Finished cosmetic products must be assessed for:

- Fragrance allergens
- Oxidation products



- Phototoxic or photoreactive constituents
- Applicable IFRA restrictions
- Finished-product exposure
- Regional cosmetic-labelling requirements

The European Commission CosIng database identifies grapefruit peel materials under CAS 90045-43-5 and 8016-20-4.

15.3 Chemical Safety Assessment

A separate chemical safety assessment has not been performed by Aromology Trading LLC for the complete Natural Complex Substance.

SECTION 16: OTHER INFORMATION

16.1 Full Text of Hazard 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.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long-lasting effects.
- H411: Toxic to aquatic life with long-lasting effects.

16.2 Abbreviations

Abbreviation	Meaning
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
EC	European Community
FEMA	Flavor and Extract Manufacturers Association
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
INCI	International Nomenclature of Cosmetic Ingredients
NCS	Natural Complex Substance
PBT	Persistent, Bioaccumulative and Toxic
PPE	Personal Protective Equipment
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals



SDS Safety Data Sheet
vPvB Very Persistent and Very Bioaccumulative

16.3 Document Information

Parameter	Details
Product	Premium White Grapefruit Essential Oil
Version	1.0
Issue Date	24 July 2026
Review Date	24 July 2029 or earlier if new information becomes available
Intended Users	Professional and industrial users

16.4 Disclaimer

This MSDS has been prepared using representative published safety and technical information for expressed White Grapefruit Essential Oil, identified as *Citrus × paradisi* peel oil.

As this material is a Natural Complex Substance, its composition, physical properties, allergen profile, phototoxic potential and hazard classification may vary according to:

- Grapefruit cultivar
- Country and region of origin
- Harvest season
- Fruit maturity
- Peel handling
- Extraction method
- Concentration or folding
- Furocoumarin content
- Storage conditions
- Oxidation status
- Batch-specific natural variation

The original producer's batch-specific Safety Data Sheet, Certificate of Analysis, GC/MS analysis, IFRA Certificate and allergen declaration shall take precedence where available.

This MSDS does not constitute a finished-product safety assessment and does not relieve the user from determining suitability, safe handling, dilution, phototoxicity, IFRA compliance, cosmetic-labelling obligations and regulatory suitability for the intended application.

AUTHORISED BY

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