



A R O M O L O G Y

IFRA COMPLIANCE STATEMENT

IFRA Standards – 51st Amendment

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PRODUCT INFORMATION

Parameter	Details
Product Name	Pistachio Peel Essential Oil
Alternative Name	Pistachio Hull Essential Oil
Botanical Name	<i>Pistacia vera</i> L.
Botanical Family	Anacardiaceae
Plant Part	Fresh fruit peel / soft outer hull
Extraction Method	Steam Distillation / Hydrodistillation
Product Type	Natural Essential Oil
Regulatory Type	Natural Complex Substance
INCI Name	Pistacia Vera Fruit Extract / Pistacia Vera Fruit Oil, subject to supplier designation
CAS Number	No substance-specific CAS number confirmed
EC Number	Not specifically assigned
Country of Origin	Iran

2. IFRA STATUS

Pistachio Peel Essential Oil is a Natural Complex Substance (NCS) obtained by distillation of the fresh outer hull or peel of *Pistacia vera* fruit.

Based on the information available at the date of issue:

- No individual IFRA Standard specifically prohibiting Pistachio Peel Essential Oil has been identified.
- No substance-specific IFRA maximum-use table has been established for this material.
- The material may contain constituents that are individually subject to IFRA Standards.
- Compliance must be evaluated from the concentration of each restricted constituent in the essential oil and its resulting concentration in the finished consumer product.
- Batch-specific GC/MS analytical data must take precedence over representative published composition.



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IFRA recognises that Natural Complex Substances may vary considerably according to geographical origin, plant part and extraction method. The IFRA NCS nomenclature system therefore identifies both the plant part and the processing method when characterising natural materials.

3. REPRESENTATIVE CONSTITUENT PROFILE

Published analysis of *Pistacia vera* hull essential oil has reported the following representative composition:

Natural Constituent	Representative Content	IFRA Assessment Relevance
α -Pinene	Approximately 47.36%	Assess current IFRA Standards and oxidation products
Terpinolene	Approximately 10.57%	Assess using batch-specific composition
Limonene	Approximately 9.13%	Subject to applicable IFRA purity and peroxide requirements
Bornyl Acetate	Approximately 8.57%	Assess against current standards where applicable
Camphene	Approximately 7.03%	Assess using batch-specific composition
β -Pinene	Approximately 5.39%	Assess current IFRA Standards and oxidation products
δ -3-Carene	Approximately 2.84%	Assess using batch-specific composition
Myrcene	Approximately 0.85%	Restricted under the applicable IFRA Standard
Sabinene	Approximately 0.56%	Assess using batch-specific composition
Other Natural Constituents	Balance	Batch-specific assessment required

Published studies confirm substantial natural variation. Some pistachio-hull samples contained limonene at approximately 25.9–47.69% and terpinolene above 24%, while another study reported α -pinene as the principal constituent at 47.36%. Consequently, a representative profile cannot replace the actual batch GC/MS report.

4. IFRA 51 CATEGORY ASSESSMENT

Because a verified batch-specific GC/MS report and exact concentrations of all IFRA-regulated constituents were not supplied, a scientifically supportable numerical maximum-use level cannot be assigned for the individual IFRA categories.

IFRA Category	Maximum Permitted Concentration
Category 1	To be calculated from batch-specific restricted constituents
Category 2	To be calculated from batch-specific restricted constituents
Category 3	To be calculated from batch-specific restricted constituents
Category 4	To be calculated from batch-specific restricted constituents



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Category 5A	To be calculated from batch-specific restricted constituents
Category 5B	To be calculated from batch-specific restricted constituents
Category 5C	To be calculated from batch-specific restricted constituents
Category 5D	To be calculated from batch-specific restricted constituents
Category 6	To be calculated from batch-specific restricted constituents
Category 7A	To be calculated from batch-specific restricted constituents
Category 7B	To be calculated from batch-specific restricted constituents
Category 8	To be calculated from batch-specific restricted constituents
Category 9	To be calculated from batch-specific restricted constituents
Category 10A	To be calculated from batch-specific restricted constituents
Category 10B	To be calculated from batch-specific restricted constituents
Category 11A	To be calculated from batch-specific restricted constituents
Category 11B	To be calculated from batch-specific restricted constituents
Category 12	To be calculated from batch-specific restricted constituents

“To be calculated” does not mean prohibited. It means that no universal category limit can responsibly be issued without the analytical composition of the supplied batch and details of the complete finished fragrance formulation.

5. BASIS OF IFRA CALCULATION

For each constituent governed by an IFRA quantitative restriction, the maximum permissible concentration of Pistachio Peel Essential Oil may be calculated as:

Maximum essential-oil use level = applicable constituent limit ÷ constituent fraction in the essential oil

Illustrative Example Only

Where:

- an IFRA constituent limit for a particular category is 0.50% in the finished product; and
- the constituent is present at 10.00% in the essential oil,

the essential oil's theoretical maximum contribution from that constituent would be:

$$0.50 \div 0.10 = 5.00\%$$

The lowest calculated limit arising from any applicable constituent governs the use level, subject to the safety assessment of the complete formulation.

This example is explanatory only and is not a certified limit for Pistachio Peel Essential Oil.

6. PURITY AND QUALITY REQUIREMENTS



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The following requirements should be observed:

- Store the essential oil in tightly closed containers.
- Protect it from air, heat and direct light.
- Use antioxidants where technically appropriate.
- Avoid using materially oxidised oil.
- Monitor peroxide development during prolonged storage.
- Confirm the concentrations of limonene, myrcene and other relevant constituents using batch-specific GC/MS analysis.
- Reassess the material whenever the botanical source, extraction method or constituent profile changes significantly.

Oxidation of terpene-rich essential oils may increase their skin-sensitisation potential.

7. DECLARATION OF CONFORMITY

Based on the information available, Pistachio Peel Essential Oil is not known to be prohibited as a fragrance ingredient under the IFRA Standards, 51st Amendment.

However, this certificate does not assign unrestricted use or a universal maximum concentration.

Use of this material may be considered compliant with the IFRA Standards, 51st Amendment, only when:

1. the supplied batch has been characterised using appropriate analytical data;
2. all IFRA-regulated constituents occurring naturally in the material have been identified and quantified;
3. the concentration of each restricted constituent in the finished consumer product remains within its applicable IFRA limit;
4. the appropriate IFRA product category has been selected;
5. contributions from all other fragrance ingredients in the finished formulation have been included;
6. applicable purity specifications and use conditions are observed; and
7. the finished product has undergone an appropriate safety assessment.

8. RESPONSIBILITY OF THE FINISHED-PRODUCT MANUFACTURER

This certificate relates only to the raw material identified above.

It does not constitute:

- approval of a finished cosmetic or consumer product;
- a toxicological safety assessment;
- confirmation of compliance with cosmetic legislation;
- approval for oral or internal use; or
- confirmation that the material may be used at 100% in every IFRA category.



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The manufacturer of the finished fragrance or consumer product remains responsible for:

- selecting the correct IFRA category;
- obtaining batch-specific analytical data;
- calculating the cumulative contribution of restricted constituents;
- confirming finished-formula compliance;
- performing the required product safety assessment; and
- complying with all applicable national and international regulations.

9. VALIDITY

This certificate is based on the IFRA Standards, 51st Amendment and on representative information available on the issue date.

It must be reviewed or reissued when:

- the batch composition changes materially;
- updated analytical data becomes available;
- the IFRA Standards are amended;
- the botanical identity, plant part or extraction method changes; or
- the intended application category changes.

10. DISCLAIMER

Pistachio Peel Essential Oil is a Natural Complex Substance whose chemical composition may vary according to cultivar, geographical origin, maturity, harvest season, processing and distillation conditions.

The original manufacturer's current IFRA certificate, batch-specific GC/MS report, Certificate of Analysis and safety documentation shall take precedence where available.

The information in this certificate is provided in good faith for professional fragrance and cosmetic formulation. It does not relieve the user of the responsibility to assess the complete formulation and ensure compliance with applicable IFRA Standards and legislation.

This material is not intended for internal consumption and must be kept away from children.

AUTHORISED BY

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Director

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