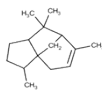
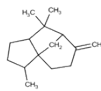


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CAS-No.:	11028-42-5 469-61-4 546-28-1	Molecular formula:	C ₁₅ H ₂₄
	The scope of this Standard includes, but is not limited to the CAS number(s) indicated above; any other CAS number(s) used to identify these fragrance ingredients should be considered in scope as well.	Structure:	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>CAS number 469-61-4: (α-Cedrene)</p>  </div> <div style="text-align: center;"> <p>CAS number 546-28-1: (β-Cedrene)</p>  </div> </div>
Synonyms:	<p>11028-42-5: Cedr-8-ene</p> <p>469-61-4: α-Cedrene Cedr-8-ene 1H-3a,7-Methanoazulene, 2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-, (3R-(3-α,3a-β,8a-α))</p> <p>546-28-1: β.-Cedrene 1H-3a,7-Methanoazulene, octahydro-3,8,8-trimethyl-6-methylene-, [3R-(3α,3β,7β,8α)]- Cedr-8(15)-ene</p>		

History:	Publication date:	2020 (Amendment 49)	Previous Publications:	Not applicable.
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Implementation dates:	For new submissions*:	February 10, 2021
	For existing fragrance compounds*:	February 10, 2022
	*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace.	

RECOMMENDATION:	RESTRICTION
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RESTRICTION LIMITS IN THE FINISHED PRODUCT (%):			
Category 1	0.27 %	Category 7A	3.1 %

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Category 2	0.080 %	Category 7B	3.1 %
Category 3	1.6 %	Category 8	0.16 %
Category 4	1.5 %	Category 9	2.9 %
Category 5A	0.38 %	Category 10A	11 %
Category 5B	0.38 %	Category 10B	11 %
Category 5C	0.38 %	Category 11A	5.8 %
Category 5D	0.38 %	Category 11B	5.8 %
Category 6	0.88 %	Category 12	No Restriction

FLAVOR REQUIREMENTS:	Due to the possible ingestion of small amounts of fragrance ingredients from their use in products in Categories 1 and 6, materials must not only comply with IFRA Standards but must also be recognized as safe as a flavoring ingredient as defined by the IOFI Code of Practice (www.iofi.org). For more details see chapter 1 of the Guidance for the use of IFRA Standards.
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CONTRIBUTIONS FROM OTHER SOURCES:	SEE ANNEX I
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ANNEX I					
Natural Complex Substances (NCS) containing Cedrene					
Concentration in NCS (%)	CAS number of ingredient	Name of NCS	Botanical name	CAS number of NCS	Essential oil category
0.4	469-61-4	Cananga oil	Cananga odorata (Lam.) Hook. f. & Thomson (forma macrophylla Steenis)	68606-83-7	F2.12
18	469-61-4	Cedarwood oil terpenes	Juniperus mexicana Schiede	68608-32-2	D2.30
5	546-28-1	Cedarwood oil terpenes	Juniperus mexicana Schiede	68608-32-2	D2.30
1.5	469-61-4	Cedarwood oil, Atlas	Cedrus atlantica (Endl.) Manetti ex Carriere	8023-85-6	D2.12
19.1	469-61-4	Cedarwood	Cupressus	1159574-01-2	D2.12

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		oil, Chinese	funnebris Endl.		
6	546-28-1	Cedarwood oil, Chinese	Cupressus funnebris Endl.	1159574-01-2	D2.12
12	469-61-4	Cedarwood oil, Texas	Juniperus mexicana Schiede	68990-83-0	D2.12
3	546-28-1	Cedarwood oil, Texas	Juniperus mexicana Schiede	68990-83-0	D2.12
24.3	469-61-4	Cedarwood oil, Virginian	Juniperus virginiana L.	8000-27-9	D2.12
5.9	546-28-1	Cedarwood oil, Virginian	Juniperus virginiana L.	8000-27-9	D2.12
0.4	469-61-4	Cypress oil	Cupressus sempervirens L.	8013-86-3	E2.12
0.4	546-28-1	Cypress oil	Cupressus sempervirens L.	8013-86-3	E2.12
1.8	469-61-4	Helichrysum absolute	Helichrysum angustifolium DC.	8023-95-8	E2.1
0.05	469-61-4	Helichrysum oil	Helichrysum angustifolium DC.	8023-95-8	E2.12
0.4	469-61-4	Juniper berry oil	Juniperus communis L.	8002-68-4	G2.12
0.25	469-61-4	Pine needle, dwarf, oil	Pinus pumila (Pall.) Regel	8000-26-8	E2.12
0.2	469-61-4	Sandalwood oil, Australian	Santalum spicatum (R.Br.) A.DC.	8024-35-9	D2.12
0.1	546-28-1	Verbena absolute	Lippia citriodora (L.) Kunth	8024-12-2	E2.1
0.5	469-61-4	Verbena absolute	Lippia citriodora (L.) Kunth	8024-12-2	E2.1
0.2	469-61-4	Vetiver oil (all origins)	Chrysopogon zizanioides (L.) Roberty	8016-96-4	A2.12
0.1	546-28-1	Vetiver oil (all origins)	Chrysopogon zizanioides (L.) Roberty	8016-96-4	A2.12
23	11028-42-5	Cedarwood oil terpenes	Juniperus mexicana Schiede	68608-32-2	D2.30
25.1	11028-42-5	Cedarwood oil, Chinese	Cupressus funnebris Endl.	1159574-01-2	D2.12
15	11028-42-5	Cedarwood oil, Texas	Juniperus mexicana Schiede	68990-83-0	D2.12
30.2	11028-42-5	Cedarwood oil, Virginian	Juniperus virginiana L.	8000-27-9	D2.12
0.8	11028-42-5	Cypress oil	Cupressus sempervirens L.	8013-86-3	E2.12
0.6	11028-42-5	Verbena absolute	Lippia citriodora (L.) Kunth	8024-12-2	E2.1
0.3	11028-42-5	Vetiver oil (all origins)	Chrysopogon zizanioides (L.) Roberty	8016-96-4	A2.12

The natural contribution of Cedrene is determined by the sum of the natural contributions of each of its isomers.

This is a non-exhaustive indicative list of typical natural presence for Cedrene and is intended to be used in the absence of own analytical data. If analysis has shown that the level of the restricted ingredient in a natural complex substance is different from what is provided in this Annex I, then the analytically determined level should be used in

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place of the indicative level.

It should further be noted that natural complex substances themselves can be restricted by an IFRA Standard.

For a detailed list of natural contributions, please refer to the Annex I of IFRA Standards, publicly available on the IFRA website (www.ifrafragrance.org).

**INTRINSIC PROPERTY DRIVING RISK DERMAL SENSITIZATION
MANAGEMENT:****RIFM SUMMARIES:**

Recommended concentration levels are based on a comprehensive safety assessment, considering various endpoints. Depending on the outcome of the safety assessment, it might be one or more endpoint(s) that will drive the derivation of the concentration levels. If more than one endpoint is of relevance, the recommended concentration levels for each product category is derived from comparing maximum permitted level per endpoint consideration (dermal sensitization and/or systemic toxicity). Such recommended concentration levels correspond to the lowest level obtained per category.

Additional information is available in the RIFM safety assessment for Cedrene, which can be downloaded from the RIFM Safety Assessment Sheet Database: <http://fragrancematerialsafetyresource.elsevier.com/>.

EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

The Expert Panel for Fragrance Safety reviewed all the available data for Cedrene and recommends the limits for the 12 different product categories, which are the acceptable use levels of Cedrene in the various product categories.

REFERENCES:

The IFRA Standard on Cedrene is based on at least one of the following publications:

- The RIFM Safety Assessment on Cedrene if available at the RIFM Safety Assessment Sheet Database: <http://fragrancematerialsafetyresource.elsevier.com>
- Api A.M., Belsito D., Bruze M., Cadby P., Calow P., Dagli M. L., Dekant W., Dent M., Ellis G., Fryer A. D., Fukayama M., Griem P., Hickey C., Kromidas L., Lalko J., Liebler D.C., Miyachi Y., Politano V.T., Renskers K., Ritacco G., Salvito D., Schultz T.W., Sipes I. G., Smith B., Vitale D., Wilcox D.K. (2015). Criteria for the Research Institute for Fragrance Materials, Inc. (RIFM) safety evaluation process for fragrance ingredients. Food Chem Toxicol. 2015 Aug;82 Suppl:S1-S19 (http://fragrancematerialsafetyresource.elsevier.com/sites/default/files/Criteria_Document_Final.pdf).
- IDEA project (International Dialogue for the Evaluation of Allergens) Final Report on the QRA2: Skin Sensitisation Quantitative Risk Assessment for Fragrance Ingredients, September 30, 2016 (<http://www.ideaproject.info/uploads/Modules/Documents/qra2-dossier-final--september-2016.pdf>).

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- Salvito D.T., Senna R. J., Federle T.W. (2002). A framework for prioritizing fragrance materials for aquatic risk assessment. *Environ Toxicol Chem.* 2002;21:1301-1308 (<https://www.ncbi.nlm.nih.gov/pubmed/12069318>).

Additional information on the application of IFRA Standards is available in the Guidance for the use of IFRA Standards, publicly available at www.ifrafragrance.org.