

Nootkatone

CAS-No.:	4674-50-4 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 this fragrance ingredient should be considered in scope as well.	Molecular formula:	C ₁₅ H ₂₂ O
		Structure:	
Synonyms:	5,6-Dimethyl-8-isopropenylbicyclo(4.4.0)dec-1-en-3-one 4a,5-Dimethyl-1,2,3,4,4a,5,6,7-octahydro-7-keto-3-isopropenyl-naphthalene 4betaH,5alpha-Eremorphila-1(10),11-dien-2-one (4R-(4alpha,4a alpha,6beta))-4,4a,5,6,7,8-Hexahydro-4,4a-dimethyl-6-(1-methylvinyl)naphthalen-2(3H)-one 4,4a,5,6,7,8-Hexahydro-6-isopropenyl-4,4a-dimethyl-2(3H)-naphthalenone 2(3H)-Naphthalenone, 4,4a,5,6,7,8-hexahydro-4,4a-dimethyl-6-(1-methylethenyl)-, (4R,4aS,6R)-		

History:	Publication date:	2006 (Amendment 40)	Previous Publications:	1980
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Implementation dates:	For new submissions*:	December 11, 2006
	For existing fragrance compounds*:	December 11, 2007
*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace.		

RECOMMENDATION:	SPECIFICATION
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FRAGRANCE INGREDIENT SPECIFICATION:	Nootkatone used as a fragrance ingredient should be at least 98% pure, with a melting point of at least 32°C. Lower purity grades may not be used as a fragrance ingredient.
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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.

CONTRIBUTIONS FROM OTHER SOURCES:

NONE TO CONSIDER (SEE ALSO THE SECTION ON CONTRIBUTIONS FROM OTHER SOURCES IN CHAPTER 1 OF THE GUIDANCE FOR THE USE OF IFRA STANDARDS)

Nootkatone is found in natural extracts, but its natural contributions are not relevant for the fragrance ingredient specification mentioned above.

INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:

DERMAL SENSITIZATION

EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

The Expert Panel for Fragrance Safety reviewed all the available data for Nootkatone. Based on their expert judgement, they recommend to use the fragrance ingredient according to its specification mentioned above.

REFERENCES:

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

- The RIFM Safety Assessment on Nootkatone is 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 (doi: 10.1016/j.fct.2014.11.014). (http://fragrancematerialsafetyresource.elsevier.com/sites/default/files/Criteria_Document_Final.pdf).

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- 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>).
- 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>).
- Research Institute for Fragrance Materials, Inc., 1971. Sensitization and irritation study of nootkatone. Unpublished report from Givaudan, May 24, Report number 41820.
- Research Institute for Fragrance Materials, Inc., 1977. Report on human maximization studies. RIFM report number 1702, June 6c.
- Research Institute for Fragrance Materials, Inc., 1978. Report on human maximization studies. RIFM report number 1698, January 13a.
- Research Institute for Fragrance Materials, Inc., 1979. Report on human maximization studies. RIFM report number 1775, September 11.
- Research Institute for Fragrance Materials, Inc., 2005. Repeated insult patch test with nootkatone. Unpublished report from Bedoukian Research, Inc., May 11. Report number 46155.

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.