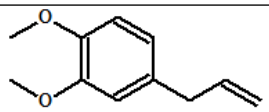
Methyl eugenol

CAS-No.:	93-15-2 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:**	$C_{11}H_{14}O_2$
		Structure:	
Synonyms:	Eugenyl methyl ether Methyl eugenol ether Allylveratrole Veratrole methyl ether 4-Allyl-1,2-dimethoxybenzene Benzene, 1,2-dimethoxy-4-(2-propenyl)- 1,2-Dimethoxy-4-allylbenzene 1,2-dimethoxy-4-(2-propenyl)- benzene		

History:	Publication date:	2020 (Amendment 49)	Previous Publications:	2002 2015

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**

RESTRICTION LIMITS IN THE FINISHED PRODUCT (%):			
Category 1	0.00058 %	Category 7A	0.00058 %
Category 2	0.0023 %	Category 7B	0.00058 %
Category 3	0.00029 %	Category 8	0.00019 %
Category 4	0.016 %	Category 9	0.00087 %

Methyl eugenol

Category 5A	0.0020 %	Category 10A	0.00087 %
Category 5B	0.00058 %	Category 10B	0.0032 %
Category 5C	0.00058 %	Category 11A	0.00019 %
Category 5D	0.00019 %	Category 11B	0.00019 %
Category 6	0.0014 %	Category 12	0.097 %

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:	**SEE ANNEX I**

ANNEX I

Natural Complex Substances (NCS) containing Methyl eugenol

Concentration in NCS (%)	CAS number of ingredient	Name of NCS	Botanical name	CAS number of NCS	Essential oil category
8.5	93-15-2	Allspice oil	Pimenta officinalis Lindl.	8006-77-7	G2.12
5.1	93-15-2	Allspice oleoresin	Pimenta officinalis Lindl.	8006-77-7	G2.21
0.07	93-15-2	Artemisia arborescens extract	Artemisia arborescens L.	92113-09-2	E2.13
0.5	93-15-2	Basil oil, chemotype estragole	Ocimum basilicum L.	8015-73-4	E2.12
0.2	93-15-2	Basil oil, chemotype linalool	Ocimum basilicum L.	8015-73-4	E2.12
0.2	93-15-2	Basil oleoresin, chemotype estragole	Ocimum basilicum L.	8015-73-4	E2.21
2.4	93-15-2	Bay leaf oil, terpeneless	Pimenta acris Kostel	68916-05-2	E2.29
1.4	93-15-2	Bay leaf,	Pimenta acris	8006-78-8	E2.13

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		West Indian, extract	Kostel		
2	93-15-2	Bay leaf, West Indian, oil	Pimenta racemosa (Mill.) J.W. Moore	8006-78-8	E2.12
0.3	93-15-2	Calamus oil	Acorus calamus L.	8015-79-0	A2.12
0.2	93-15-2	Cananga oil	Cananga odorata (Lam.) Hook. f. & Thomson (forma macrophylla Steenis)	68606-83-7	F2.12
0.01	93-15-2	Cinnamon leaf oil	Cinnamomum zeylanicum Blume	8015-91-6	E2.12
0.07	93-15-2	Elemi gum	Canarium luzonicum (Blume) A. Gray	8023-89-0	K2.16
0.4	93-15-2	Elemi oil	Canarium luzonicum (Blume) A. Gray	8023-89-0	K2.12
0.07	93-15-2	Elemi resinoid	Canarium luzonicum (Blume) A. Gray	8023-89-0	K2.26
1.5	93-15-2	Hyacinth absolute	Hyacinthus orientalis L.	8023-94-7	F2.1
0.2	93-15-2	Hyssop oil	Hyssopus officinalis L.	8006-83-5	E2.12
3	93-15-2	Laurel leaf oil	Laurus nobilis L	8007-48-5	E2.12
1.2	93-15-2	Mace oil	Myristica fragrans Houtt.	8007-12-3	G2.12
0.01	93-15-2	Mastic absolute	Pistacia lentiscus L.	68991-39-9	K2.1
0.02	93-15-2	Mastic oil	Pistacia lentiscus L.	68991-39-9	K2.12
2.8	93-15-2	Michelia alba extract	Michelia x alba DC. (champaca x montana)	8006-76-6	F2.13
1	93-15-2	Myrtle oil	Myrtus communis L.	8008-46-6	E2.12
1.2	93-15-2	Nutmeg oil	Myristica fragrans Houtt.	8008-45-5	H2.12
6	93-15-2	Pimenta leaf oil	Pimenta officinalis Lindl.	8006-77-7	E2.12
0.5	93-15-2	Rose absolute	Rosa x damascena Mill.	90106-38-0	F2.1
0.5	93-15-2	Rose concrete	Rosa x damascena Mill.	90106-38-0	F2.7
2	93-15-2	Rose oil	Rosa x damascena Mill.	8007-01-0	F2.12
0.04	93-15-2	Rose water stronger	Rosa x centifolia L.	8007-01-0	F2.54
40	93-15-2	Snakeroot oil	Asarum canadense L.	8016-69-1	A2.12
0.3	93-15-2	Tarragon oil	Artemisia dracunculus L.	8016-88-4	E2.12
0.05	93-15-2	Tea tree oil	Melaleuca alternifolia (Maiden & Betche) Cheel	68647-73-4	E2.12

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0.02	93-15-2	Thyme absolute	Thymus vulgaris L.	8007-46-3	E2.1
0.03	93-15-2	Thyme oil, red	Thymus vulgaris L.	8007-46-3	E2.12
0.03	93-15-2	Thyme oil, white	Thymus vulgaris L.	8007-46-3	E2.12
1.8	93-15-2	Tuberose absolute	Poliantes tuberosa L.	8024-05-3	F2.1
1.07	93-15-2	Tuberose concrete	Poliantes tuberosa L.	8024-05-3	F2.7
0.1	93-15-2	Verbena absolute	Lippia citriodora (L.) Kunth	8024-12-2	E2.1

This is a non-exhaustive indicative list of typical natural presence for Methyl eugenol 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 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 MANAGEMENT: DERMAL SENSITIZATION AND SYSTEMIC TOXICITY

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 Methyl eugenol, 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 Methyl eugenol and recommends the limits for the 12 different product categories, which are the acceptable use levels of Methyl eugenol in the various product categories.

REFERENCES:

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

Methyl eugenol

• The RIFM Safety Assessment on Methyl eugenol 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).

• 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.