Methyl ionone, mixed isomers

CAS-No.:	1335-46-2 127-42-4 127-43-5 127-51-5 7779-30-8 79-89-0 1335-94-0 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.
Synonyms:	1335-46-2: Methyl ionone, mixture of isomers 127-42-4: Methyl-α-ionone α-Cetone α-Cyclocitrylidenebutanone α-Cyclocitrylidenemethyl ethyl ketone Methyl-α-ionone α-Methylionone 1-Penten-3-one, 1-(2,6,6-trimethyl-2-cyclohexen-1-yl)-, [R-(E)]- (R-(E))-1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)pent-1-en-3-one 127-43-5: Methyl-beta-ionone Methyl-ß-ionone β-Methylionone β-Cetone β-Cyclocitrylidenebutanone β-Iraldeine 1-Penten-3-one, 1-(2,6,6-trimethyl-1-cyclohexen-1-yl)- 5-(2,6,6-Trimethyl-1-cyclohexen-1-yl)-4-penten-3-one 1-(2,6,6-Trimethyl-1-cyclohexen-1-yl)pent -1-en-3-one 127-51-5: α-Isomethylionone 3-Buten-2-one, 3-methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)- 3-Methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)-3-buten-2-one α-Isomethyl ionone Iraldeine gamma Isoraldeine 95 (commercial name) 7779-30-8: 1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)pent-1-en-3-one 1-Penten-3-one, 1-(2,6,6-trimethyl-2-cyclohexen-1-yl)- 79-89-0: iso-Methyl-β-ionone 3-Buten-2-one, 3-methyl-4-(2,6,6-trimethyl-1-cyclohexen-1-yl)- 3-Methyl-4-(2,6,6-trimethylcyclohex-1-en-1-yl)but-3-en-2-one

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	δ-Iraldeine 1335-94-0: Irone

History:	Publication date:	2020 (Amendment 49)	Previous Publications:	2007 2015

Implementation dates:	For new creation*:	February 10, 2021
	For existing creation*:	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 / SPECIFICATION**

MAXIMUM ACCEPTABLE CONCENTRATIONS IN THE FINISHED PRODUCT (%):			
Category 1	5.4 %	Category 7A	61 %
Category 2	1.6 %	Category 7B	61 %
Category 3	32 %	Category 8	3.2 %
Category 4	30 %	Category 9	59 %
Category 5A	7.6 %	Category 10A	100 %
Category 5B	7.6 %	Category 10B	100 %
Category 5C	7.6 %	Category 11A	100 %
Category 5D	7.6 %	Category 11B	100 %
Category 6	18 %	Category 12	No Restriction

Fragrance ingredient restriction - Note box
The above limits apply to Methyl ionone isomers used individually or in combination.

FRAGRANCE INGREDIENT SPECIFICATION:	Pseudo methyl ionones (CAS numbers 26651-96-7, 72968-25-3, 1117-41-5) should not be used as fragrance ingredient as such. A level of up to 2% of Pseudo methyl ionones as an impurity in Methyl ionones is accepted.

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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 BEYOND TRACES (SEE ALSO THE SECTION ON CONTRIBUTIONS FROM OTHER SOURCES IN CHAPTER 1 OF THE GUIDANCE FOR THE USE OF IFRA STANDARDS)**
INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:	**DERMAL SENSITIZATION**

RIFM SUMMARIES:

Maximum acceptable concentrations 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 maximum acceptable concentrations for each product category are derived from comparing maximum permitted level per endpoint consideration (e.g. dermal sensitization and/or systemic toxicity). Such maximum acceptable concentrations correspond to the lowest level obtained per category.

Additional information is available in the RIFM safety assessment for Methyl ionone, mixed isomers, which can be downloaded from the RIFM Fragrance Material Safety Assessment Center: http://fragrancematerialsafetyresource.elsevier.com/.

EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

The Expert Panel for Fragrance Safety reviewed all the available data for Methyl ionone, mixed isomers and recommends the concentrations for the 12 different product categories, which are the maximum acceptable concentrations of Methyl ionone, mixed isomers in the various product categories.
In addition, they recommend to use Methyl ionone, mixed isomers according to the specification above mentioned.

REFERENCES:

The IFRA Standard on Methyl ionone, mixed isomers is based on at least one of the following publications:

• The RIFM Safety Assessment on Methyl ionone, mixed isomers if available at the RIFM Fragrance Material Safety Assessment Center: 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

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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).

• 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.