

**Musk ketone**

<b>CAS-No.:</b>	<b>81-14-1</b> 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.	<b>Molecular formula:</b>	C <sub>14</sub> H <sub>18</sub> N <sub>2</sub> O <sub>5</sub>	
	<b>Structure:</b>			
<b>Synonyms:</b>	1-(4-tert-Butyl-2,6-dimethyl-3,5-dinitrophenyl) ethanone 4'-tert-butyl-2',6'-dimethyl-3',5'-dinitroacetophenone 3,5-Dinitro-2,6-dimethyl-4-tert-butylacetophenone 1-[4-(1,1-Dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]ethanone Ethanone, 1-[4-(1,1-dimethylethyl)-2,6-dimethyl-3,5-dinitrophenyl]-			

<b>History:</b>	<b>Publication date:</b>	2010 (Amendment 45)	<b>Previous Publications:</b>	Not applicable.
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<b>Implementation dates:</b>	<b>For new submissions*:</b>	January 11, 2011
	<b>For existing fragrance compounds*:</b>	January 11, 2012
	*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace.	

<b>RECOMMENDATION:</b>	<b>SPECIFICATION</b>
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<b>FRAGRANCE INGREDIENT SPECIFICATION:</b>	Musk xylene (CAS number 81-15-2), which has been prohibited for use in fragrance compounds for environmental reasons (vPvB), can be present in Musk ketone as an impurity. Musk ketone should only be used if it contains less than 0.1% of Musk xylene.
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<b>FLAVOR REQUIREMENTS:</b>	Due to the possible ingestion of small amounts
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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](http://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)**

### INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:

**SEE FRAGRANCE MATERIAL SPECIFICATION**

### EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

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

### REFERENCES:

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

- The RIFM Safety Assessment on Musk ketone 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 (doi: 10.1016/j.fct.2014.11.014). ([http://fragrancematerialsafetyresource.elsevier.com/sites/default/files/Criteria\\_Document\\_Final.pdf](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:

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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>).
- PBT draft Addendum to the final report (2005) of the Risk Assessment (PBT assessment), January 2008 (the Netherlands National Institute for Public health and Environment, RIVM) (<https://echa.europa.eu/documents/10162/cb2b7fc5-8af1-46df-a1c0-7bf8335162a0>).
- ECHA (European Chemicals Agency, Member State Committee, Substances of Very High Concern support document for identification of 5-tert-butyl-2,4,6-trinitro-m-xylene, Adopted on October 8, 2008 (<https://echa.europa.eu/documents/10162/909dd42e-2554-4f59-911a-729a2da1d529>).
- IFRA Standard on Musk xylene.

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](http://www.ifrafragrance.org).