

Methyl N-methylantranilate

CAS-No.:	85-91-6 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.
Synonyms:	Methyl N-methylantranilate Benzoic acid, 2-(methylamino)-, methyl ester Dimethyl anthranilate 2-Methylamino methyl benzoate N-Methylantranilic acid, methyl ester Methyl 2-(methylamino)benzoate Methyl 2-methylaminobenzoate Methyl o-methylaminobenzoate

History:	Publication date:	2023 (Amendment 51)	Previous Publications:	1978 2001 2002 2006 2009 2015 2020
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Implementation dates:	For new creation*:	March 30, 2024
	For existing creation*:	October 30, 2025
	*These dates apply to the supply of fragrance mixtures (formulas) only, not to the finished consumer products in the marketplace.	

RECOMMENDATION:	RESTRICTION / SPECIFICATION
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MAXIMUM ACCEPTABLE CONCENTRATIONS IN THE FINISHED PRODUCT (%):			
Category 1	0.10 %	Category 7A	0.50 %
Category 2	0.10 %	Category 7B	0.10 %
Category 3	0.10 %	Category 8	0.10 %
Category 4	0.10 %	Category 9	0.50 %
Category 5A	0.10 %	Category 10A	0.50 %
Category 5B	0.10 %	Category 10B	0.10 %
Category 5C	0.10 %	Category 11A	No restriction

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Category 5D	0.10 %	Category 11B	0.10 %
Category 6	0.50 %	Category 12	No restriction

Fragrance ingredient restriction – Note box

The Standard is set due to the phototoxic effects of Methyl N-methylantranilate. For more detailed information on the application of this Standard, please refer to the note on phototoxic ingredients in chapter 1 of the Guidance for the use of IFRA Standards.

FRAGRANCE INGREDIENT SPECIFICATION:

This material has been identified for having the potential of forming nitrosamines in nitrosating systems. Downstream users therefore have to be notified of the presence of the material and its potential, to be able to consider adequate protective measures.

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 ON CONTRIBUTIONS FROM OTHER SOURCES

INTRINSIC PROPERTY DRIVING RISK MANAGEMENT:

PHOTOTOXICITY AND SYSTEMIC TOXICITY, POTENTIAL OF NITROSAMINE FORMATION

RIFM SUMMARIES:

A human phototoxicity study at 0.5% in 75% Ethanol/25% Diethyl phthalate (DEP) resulted in 0/26 reactions (RIFM, 2001). Another human phototoxicity study with concentrations of 0.1, 0.3, and 0.5% resulted in 0/29 reactions (RIFM, 1998). Several other phototoxicity studies showed phototoxic reactions at 1% and 5% (Kaidbey and Kligman, 1980; Letizia and Api, 2003; RIFM, 1999).

A human photosensitization study at 0.5% in 75% Ethanol/25% DEP resulted in 0/26 reactions (RIFM, 2001). Another human photosensitization study at 5.0% resulted in no photoallergic reactions. However, 14/18 phototoxic reactions were observed (RIFM, 1978a).

A phototoxicity study at 50% in Methanol and 100% on hairless mice produced reactions at both dose levels (RIFM, 1978b).

An in vitro phototoxicity assay using a human skin model (Skin2®) with concentrations of Methyl N-methylantranilate ranging from 0.05% to 25% in corn oil showed that the material was phototoxic at dose levels above 5% (Api, 1997).

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EXPERT PANEL FOR FRAGRANCE SAFETY RATIONALE / CONCLUSION:

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

REFERENCES:

The IFRA Standard on Methyl N-methylantranilate is based on at least one of the following publications:

- The RIFM Safety Assessment on Methyl N-methylantranilate 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 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.