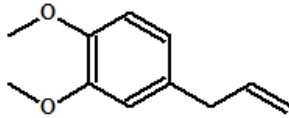


**Methyl eugenol**

<b>CAS N°:</b>	93-15-2	<b>Empirical formula:</b>	C <sub>11</sub> H <sub>14</sub> O <sub>2</sub>
		<b>Structure:</b>	
<b>Synonyms:</b>	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		

<b>History:</b>	Initial reviews:	December 2002		
	Current revision date:	2015		
	Implementation date:	For new submissions*:	August 10, 2015	
		For existing fragrance compounds*:	August 10, 2016	
	Next review date	2020		

\* This date applies to the supply of fragrance compounds (formulas) only, not to the finished products in the marketplace.

**RECOMMENDATION:**

**RESTRICTED**

**RESTRICTIONS:**

<b>Limits in the finished product:</b>			
<b>Skin contact products:</b>			
Leave-on products:	See note box	Rinse-off products:	See note box
Non-skin contact products:	See note box <i>Including household cleaning products</i>		
<b>Note box:</b>			
The Standard is based on long-term systemic effects and will therefore have a wider range of product type limitations as follows: Fine fragrance: 0.02% Eau de toilette: 0.008% Fragrancing cream: 0.004% Other leave-on: 0.0004% Rinse-off: 0.001% Non-skin, incidental skin contact: 0.01%			
The limitations apply to Methyl eugenol (ME) originating from all sources. Contributions from essential oils can be significant (see Contribution from other sources).			
<b>Fragrance material specifications:</b>	N/A		

**Methyl eugenol****CONTRIBUTION FROM OTHER SOURCES:**

See **Annex I**.

**CRITICAL EFFECT:****CARCINOGENICITY****RFIM SUMMARIES:**

The currently available metabolic, biochemical and toxicological data found for Methyl eugenol in laboratory species provide clear evidence of non-linearity in the dose-response relationship for Methyl eugenol with respect to metabolic activation and mechanisms associated with carcinogenic effects. Consideration of these data indicates a No Observed Effect Level for Methyl eugenol in the rat in the dose-range of 1-10 mg/kg body weight/day.

**REXPAN RATIONALE / CONCLUSION:**

Based on the lower end of the NOEL and applying a 1000 times safety factor for systemic effects a daily dose for Methyl eugenol of 60 µg/day is supported. Taking into account a dermal penetration factor of 40% leads to an acceptable dose of 150 µg/day.

This daily dose, applying the calculation table for dermal exposure as attached (contained in Api *et al.* (2014)), results in the maximum concentrations for Methyl eugenol in certain product categories as outlined in the section 'limits' of this Standard.

**REFERENCES:**

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. (2014). Food and Chemical Toxicology, <http://dx.doi.org/10.1016/j.fct.2014.11.014>.