

**Methyl β-naphthyl ketone**

<b>CAS N°:</b>	93-08-3	<b>Empirical formula:</b>	C <sub>12</sub> H <sub>10</sub> O
		<b>Structure:</b>	
<b>Synonyms:</b>	2-Acetonaphthone β -Acetylnaphthalene Cetone d Ethanone, 1-(2-naphthalenyl) (CAS) β -Methyl naphthyl ketone β -Naphthyl methyl ketone Oranger crystals		

<b>History:</b>	Initial reviews:	October 2004		
	Current revision date:	2015		
	Implementation date:	For new submissions*:	Not applicable	
		For existing fragrance compounds*:	Not applicable	
	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>			
<u>Skin contact products:</u>			
Leave-on products :	0.2%	Rinse-off products: <i>Including household cleaning products</i>	No restriction
<u>Non-skin contact products:</u>	No restriction		
<b>Note box:</b>			
The Standard is set due to the phototoxic effects of the material. The limit only applies to applications on skin exposed to sunshine, excluding rinse-off products (please refer to Table 4 of the QRA booklet for more detailed information).			
<b>Fragrance material specifications:</b>	N/A		

**CONTRIBUTION FROM OTHER SOURCES:**

None to consider (see also the note on contributions from other sources in the **Introduction to the IFRA Standards**).

**CRITICAL EFFECT: PHOTOTOXICITY**

## Methyl $\beta$ -naphthyl ketone

### RIFM SUMMARIES:

#### Human Studies

A human phototoxicity study with Methyl  $\beta$ -naphthyl ketone (concentrations of 0.1, 1 and 10% in 3:1 DEP:EOH) was conducted. No reactions indicative of primary irritation were observed in this study. However, under irradiated conditions, Methyl  $\beta$ -naphthyl ketone at 10% in 3:1 DEP:EtOH produced moderate erythema in 5 subjects. These responses were stronger than those seen for the irradiated blank patch, which only produced slight to mild erythema. Under the conditions of the study, Methyl  $\beta$ -naphthyl ketone at 10% in 3:1 DEP:EtOH showed evidence of phototoxicity. Erythema scores for Methyl  $\beta$ -naphthyl ketone at 0.1% and 1.0% in 3:1 DEP:EtOH were similar to those seen for the blank patch under irradiated conditions. These reactions were not indicative of phototoxic responses (RIFM, 2004).

#### Other Studies

Methyl  $\beta$ -naphthyl ketone has been observed to absorb in the UV range of 290-400 nm and is positive in the Neutral Red Uptake Phototoxicity Assay (RIFM, 2002). However, it has been shown to be non-phototoxic in guinea pigs at concentrations up to 60% in 3:1 EtOH:DEP (RIFM, 2003).

### REXPAN RATIONALE / CONCLUSION:

The RIFM Expert Panel reviewed the critical effect data for Methyl  $\beta$ -naphthyl ketone and recommended a limit of 0.2%, based on a no-effect level for phototoxicity in humans of 1% (May 18, 2004).

### REFERENCES:

Research Institute for Fragrance Materials, Inc. (2002). Methyl  $\beta$ -naphthyl ketone: Neutral red uptake phototoxicity assay in BALB/C 3T3 mouse fibroblasts. RIFM report number 40279, May 30 (RIFM, Woodcliff Lake, NJ, USA).

Research Institute for Fragrance Materials, Inc. (2003). Topical photoallergy screening test of  $\alpha$ -methyl naphthyl ketone in male albino hairless guinea pigs including primary irritation, phototoxicity and contact hypersensitivity evaluations. RIFM report number 44882, June 9 (RIFM, Woodcliff Lake, NJ, USA).

Research Institute for Fragrance Materials, Inc. (2004). Evaluation of phototoxicity of methyl  $\beta$ -naphthyl ketone in humans. RIFM report number 45136, March 16 (RIFM, Woodcliff Lake, NJ, USA).