METHYL ß-NAPHTHYL KETONE

CAS N°: 93-08-3

Empirical formula: $C_{12}H_{10}O$
$C_{10}H_7$-CO-CH_3

Synonyms:
2-Acetonaphthone
β-Acetylnaphthalene
Cetone d
Ethanone, 1-(2-naphthalenyl) (CAS)
β-Methyl naphthyl ketone
β-Naphthyl methyl ketone
Oranger crystals

History:

Initial reviews:	**New Standard**	
Current revision date:	October 2004	
Implementation date:	for new submissions*:	May 12, 2005
	for existing fragrance compounds*:	May 12, 2006
Next review date:	2009	

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

STANDARD: **RESTRICTED**

RESTRICTIONS:

Limits in the finished product:

Skin contact products:

Leave-on products: 0.2%

Rinse-off products: No restriction
including household cleaning products

Non skin contact products: No restriction

Note box: The Standard is set due to phototoxic effects of the material. The limit only applies to applications on skin, excluding rinse-off products.

If combinations of phototoxic fragrance ingredients are used, the use levels have to be reduced accordingly. The sum of the concentrations of all phototoxic ingredients, expressed in % of their recommended maximum level in the consumer product shall not exceed 100.

Fragrance Material Specification: Not applicable

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Contribution from other sources: None known

Critical effect: **Phototoxicity**

RIFM summaries:

Human Studies

A human phototoxicity study with methyl-β-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-β-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-β-naphthyl ketone at 10% in 3:1 DEP:EtOH showed evidence of phototoxicity. Erythema scores for methyl-β-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 -β-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 -β-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 β-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 β-naphthyl ketone in humans. RIFM report number 45136, March 16. (RIFM, Woodcliff Lake, NJ, USA).