5–ACETYL–1,1,2,3,3,6–HEXAMETHYL INDAN (AHMI)

CAS N°: 15323-35-0 **Empirical formula:** $C_{17}H_{24}O$

Synonyms: **Acetyl hexamethyl indan**
6-Acetyl-1,1,2,3,3,5-hexamethylindane
1-(2,3-Dihydro-1,1,2,3,3,6-hexamethyl-1h-inden-5-yl)ethanone
Ethanone,1-(2,3-dihydro-1,1,2,3,3,6-hexamethyl-1H-inden-5-yl)-
1,1,2,3,3,6-Hexamethylindan-5-yl Methylketone
Phantolid

History: Initial reviews: October 1978, October 1987

Current revision date: September 2001

Implementation date: for new submissions*: Not applicable
for existing fragrance compounds*: Not applicable

Next review date: 2006

* 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: 2% Rinse-off products: No restriction
including household cleaning products

Non skin-contact products: No restriction

Note box: The Standard is set due to the 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

Contribution from other sources: None known

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Critical effect: **Phototoxicity**

RIFM summaries:

Human studies – phototoxicity

The IFRA Standard is based upon two photoirritation studies in humans. In the first study, 10 volunteers were treated with 10% solution of AHMI in 75% ethanol plus 25% diethyl phthalate on each forearm. Twenty-four hours later, one arm was irradiated (UVA) and the other served as a control. Observations immediately after radiation, at 24 hrs, and at 48 hours showed no phototoxic effects (RIFM, 1986). In the second study, 10 volunteers were treated with a 10% solution in 75% ethanol plus 25% diethyl phthalate on the back. After 30 minutes, the site was irradiated (UVA and UVB). Observations at 5 minutes after irradiation, and at 3, 24, 48, and 72 hours showed no phototoxic effects (RIFM, 1987).

Animal studies – phototoxicity

- 5, 20, 50 % in guinea pigs, photoirritation observed 20 and 50% (RIFM, 1978a).
- 5, 20% in rabbits, photoirritation observed at 5 and 20% (RIFM, 1978a).
- 1, 5, 10, 20% in guinea pigs and rabbits, photoirritation observed in guinea pigs and rabbits at 5, 10, and 20% (Ogoshi, et al, 1980; Ohkoshi, et al, 1981).
- 10% in guinea pigs, no photoirritation observed (Guillot, et al, 1985).
- 1% in rabbits, photoirritation observed (RIFM, 1978).
- 1, 2, 4 % in rabbits, photoirritation observed (RIFM, 1985a; 1985b)
- 0.01, 1, 10, 25, 50% in hairless mice, photoirritation observed at 10, 25, 50% (RIFM, 1978c).

Animal studies – photoallergy

2% in guinea pigs, no photoallergy observed, 1/10 showed sensitization (RIFM, 1985c).

Rexpan Rationale / Conclusion:

The RIFM Expert Panel reviewed the critical effect data for AHMI and recommended no change to the Standard (September 2001).

References:

Guillot, J.P., Gonnet, J.F., Loquerie, J.F., Martini, M.C., Convert, P., and Cotte, J. (1985). Anew method for the assessment of phototoxic and photoallergic potentials by topical applications in the albino guinea pig. J. Toxicol.-Cut. Ocu. Toxcicol., 4(2), 117-133.

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Research Institute for Fragrance Materials, Inc. (1978a). Phototoxicity of synthetic musks. Unpublished report from Shiseido laboratories. Report number 4415, 26 August.

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