p-METHYLHYDROCINNAMIC ALDEHYDE

CAS N°: 5406-12-2

Empirical formula: $C_{10}H_{12}O$

Synonyms: **Benzenepropanal, 4-methyl-**
***p*-Methyldihydrocinnamaldehyde**
***p*-Methylhydrocinnamaldehyde**
3-(4-Methylphenyl)propanal
3-*p*-Tolylpropionaldehyde

History: Initial reviews: November 1987, July 1994

Current revision date: January 2002

Implementation date: for new submissions*: Not applicable

for existing fragrance compounds*: Not applicable

Next review date: 2007

* 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: 0.2%
including household cleaning products

Non skin-contact products: 2%

Note box: In compliance with the outcome of the REXPAN evaluation (January 2002), the permitted non-skin contact level has been increased from 0.4 to 2% to follow the general principle of representing the NOEL.

Fragrance material specification: Not applicable

Contribution from other sources: None known

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Critical effect: **Sensitization**

RIFM summaries:

The IFRA Standard of 0.2% (skin-contact level) is based on the results of a human maximization study at 2.0% in petrolatum, which showed no sensitization reactions in 23 subjects (RIFM, 1987). Another maximization study at 20% in petrolatum resulted in 7/24 reactions (RIFM, 1985).

A Buehler delayed hypersensitivity test on guinea pigs at 1, 3 and 10% in diethyl phthalate showed sensitization reactions in 0/20, 1/20, and 5/20, respectively (RIFM, 1986). Data from murine local lymph node assays show that the EC3 value is 14% (3500 $\mu g/cm^2$) (Basketter *et al*., 2001 2002; 2003).

Rexpan Rationale / Conclusion:

The RIFM Expert Panel reviewed the critical effect data for p-methylhydrocinnamic aldehyde and recommended no change to the skin-contact limit and that the non skin-contact limit be changed to 2% (January 2002).

References:

Basketter D.A., Wright Z.M., Warbrick E.V., Dearman R.J., Kimber I., Ryan C.A., Gerberick G.F. and White I.R. (2001) Human potency predictions for aldehydes using the local lymph node assay. Contact Dermatitis, 45(2), 89-94.

Basketter D.A., Wright Z., Gilmour N.J., Ryan C.A., Gerberick G.F., Robinson M.K., Dearman R.J. and Kimber I. (2002) Prediction of human sensitization potency using local lymph node assay EC3 values. The Toxicologist, 66(1-S), 240.

Basketter D.A., Gilmour N., Dearman R.J., Kimber I., Ryan C.A. and Gerberick F. (2003) Classification of skin sensitisation potency using the Local Lymph Node Assay. The Toxicologist, 72(S-1), 101.

Research Institute for Fragrance Materials, Inc. (1985). Report on human maximization studies. RIFM report number 1919, 7 January.

Research Institute for Fragrance Materials, Inc. (1986). Delayed contact hypersensitivity study on p-methylhydrocinnamic aldehyde in guinea pigs. RIFM report number 4644, 3 October.

Research Institute for Fragrance Materials, Inc. (1987). Report on human maximization studies. RIFM report number 5669, 29 June.