

CAS 5466-77-3

Substance name 2-ethyl-hexyl-4-methoxycinnamate (also called octinoxate)

Toxicity

2-ethyl-hexyl-4-methoxycinnamate has been classified as a Category 1 endocrine disruptor by the European Union.¹ The compound was found to interfere with the hypothalamic-pituitary-thyroid axis in rats, causing a dose-dependent reduction in thyroid hormones (T3, T4), and thyrotropin (TSH) levels.² 2-ethyl-hexyl-4-methoxycinnamate has demonstrated estrogenic properties in the uterotrophic assay and the MCF-7 breast cancer cell line.³

Exposure

The Danish EPA found 2-ethyl-hexyl-4-methoxycinnamate in 2 out of 5 bed linens⁴ and 2 out of 28 sunscreens marketed for babies.⁴ It is a UV-B filter and is used in many sunscreens, including those marketed for children. It is listed as an ingredient in more than 1700 products including sunscreen, foundation and other facial make-up, lip gloss, and hair products.⁵

References

1. European Commission DG Environment (2002). Endocrine disruptors: study on gathering information on 435 substances with insufficient data. Final report B4-3040/2001/325850/MAR/C2.
2. Klammer H, Schlecht C, Wuttke W, Schmutzler C, Gotthardt I, Köhrle J, Jarry H. (2007) Effects of a 5-day treatment with the UV-filter octyl-methoxycinnamate (OMC) on the function of the hypothalamo-pituitary-thyroid function in rats. *Toxicology* 238(2-3): 192-9.
3. Schlumpf M, Cotton B, Conscience M, Haller V, Steinmann B, Lichtensteiger W. (2001) In vitro and in vivo estrogenicity of UV screens. *Environ Health Perspect* 109(3): 239-44.
4. Danish Ministry of the Environment, Environmental Protection Agency. Surveys on Chemicals in Consumer Products. Report 102, 2009.
http://www.mst.dk/English/Chemicals/Consumer_Products/Surveys-on-chemicals-in-consumer-products.htm.
5. Environmental Working Group Skin Deep Database (accessed March 31, 2011).
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