LAUROYL PEROXIDE

Data were last reviewed in IARC (1985) and the compound was classified in *IARC Monographs* Supplement 7 (1987).

1. Exposure Data

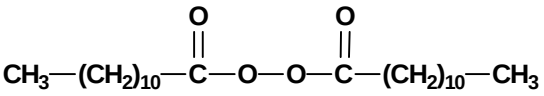
1.1 Chemical and physical data

1.1.1 *Nomenclature*

Chem. Abstr. Serv. Reg. No.: 105-74-8

Systematic name: Peroxide, bis(1-oxododecyl)

1.1.2 *Structural and molecular formulae and relative molecular mass*



$C_{24}H_{46}O_4$ Relative molecular mass: 398.6

1.1.3 *Physical properties* (for details, see IARC, 1985)

Melting-point: 54.7–55°C

1.2 Production and use

Lauroyl peroxide was first produced commercially in about 1941. It is used principally in the production of polymers; small amounts are employed in food packaging (IARC, 1985).

2. Studies of Cancer in Humans

No data were available to the Working Group.

3. Studies of Cancer in Experimental Animals

Lauroyl peroxide was tested for carcinogenicity by subcutaneous administration in mice and rats and by skin application in mice. In one study in mice by subcutaneous

administration, the evidence concerning a carcinogenic effect was inconclusive; in two other studies, no increase in tumour incidence was observed. Two studies in mice by skin application were inadequate for an evaluation of complete carcinogenicity; one study indicated that lauroyl peroxide has promoting activity in mouse skin (IARC, 1985).

4. Other Data Relevant to an Evaluation of Carcinogenicity and its Mechanisms

4.1 Absorption, distribution, metabolism and excretion

No data were available to the Working Group.

4.2 Toxic effects

4.2.1 *Humans*

No data were available to the Working Group.

4.2.2 *Experimental systems*

A single application of lauroyl peroxide to mouse skin induced mild hyperplasia and a temporary increase in dark basal keratinocytes. No major inflammatory or vascular change was noted (IARC, 1985).

4.3 Reproductive and developmental effects

No adequate data were available to the Working Group.

4.4 Genetic and related effects

No adequate data were available to the Working Group.

5. Evaluation

No epidemiological data relevant to the carcinogenicity of lauroyl peroxide were available.

There is *inadequate evidence* in experimental animals for the carcinogenicity of lauroyl peroxide.

Overall evaluation

Lauroyl peroxide is *not classifiable as to its carcinogenicity to humans (Group 3).*

6. References

IARC (1985) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans*, Vol. 36, *Allyl Compounds, Aldehydes, Epoxides and Peroxides*, Lyon, pp. 315–321

IARC (1987) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Supplement 7, *Overall Evaluations of Carcinogenicity: An Updating of* IARC Monographs *Volumes 1 to 42*, Lyon, p. 65