

# Dieldrin

## MAK Value Documentation, addendum – Translation of the German version from 2023

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### Keywords

dieldrin; insecticide; pesticide;  
toxicity; evaluation

## Abstract

Dieldrin [60-57-1] is used as an insecticide but is no longer approved in the European Union. The previous MAK value documentation and addendum do not reflect the current data situation of the substance. The MAK Commission decided that a new evaluation is not of high priority. The MAK value and the other classifications are therefore suspended and the substance is listed in the Section IIc of the List of MAK and BAT Values for substances no longer evaluated.

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<b>MAK value</b>	<b>see Section II c of the List of MAK and BAT Values</b>
<b>Peak limitation</b>	–
<b>Absorption through the skin</b>	–
<b>Sensitization</b>	–
<b>Carcinogenicity</b>	–
<b>Prenatal toxicity</b>	–
<b>Germ cell mutagenicity</b>	–
<b>BAT value</b>	–
<b>Synonyms</b>	aldrin epoxide HEOD
<b>Chemical name (IUPAC)</b>	(1R,2S,3S,6R,7R,8S,9S,11R)-3,4,5,6,13,13-hexachloro-10-oxapentacyclo[6.3.1.1 <sup>3,6</sup> .0 <sup>2,7</sup> .0 <sup>9,11</sup> ]tridec-4-ene
<b>CAS number</b>	60-57-1
<b>Molecular formula</b>	C <sub>12</sub> H <sub>8</sub> OCl <sub>6</sub>
<b>Molar mass</b>	380.91 g/mol
<b>Melting point</b>	175.5 °C (NCBI 2023)
<b>Vapour pressure at 20 °C</b>	0.000004 hPa (NCBI 2023)
<b>log K<sub>OW</sub></b>	5.4 (NCBI 2023)
<b>Solubility</b>	insoluble in water (NCBI 2023)

This addendum was prepared because the published evaluation no longer reflects the data currently available for the MAK value and for the designation and classification of the substance.

Dieldrin was used as an insecticide particularly for combating termites and textile pests. Additionally, it was used to control insects that live in agricultural soils or transmit diseases. The pesticide aldrin is rapidly converted to dieldrin (UBA 2021 a). In 1966, a MAK value of 0.25 mg/m<sup>3</sup> I was established for dieldrin and it was designated with an “H” (for substances which can be absorbed through the skin in toxicologically relevant amounts). In 2002, the substance was classified in Peak Limitation Category II with an excursion factor of 8 (Greim 2002, available in German only; Henschler 1973, available in German only).

Dieldrin is one of the original 12 persistent organic pollutants (POP) that were banned from worldwide production, sale and use under the Stockholm Convention (or “POP Convention”) of 22 May 2001 that came into force on 17 May 2004 (UBA 2021 b). In the European Union, the production, placement on the market and use of dieldrin are prohibited under Regulation (EC) No 1107/2009 concerning the placing of plant protection products on the market and Regulation (EU) No 2019/1021 on persistent organic pollutants (European Commission 2022 b; European Parliament and European Council 2009, 2019). Dieldrin is also on the list of chemicals in Annex I Part 3 and in Annex II of the PIC (Prior Informed Consent) Regulation (EU) No 649/2012 that have been placed under an export ban (European Commission 2022 a). In the former German Democratic Republic, the substance was approved for use until 1967. The Federal Republic of Germany banned all uses of the substance in 1974 (BVL 2010).

The previous evaluation does not reflect the currently available data. However, a re-evaluation of the substance is not a priority. Therefore, the MAK value, the peak limitation and the “H” designation have been withdrawn and dieldrin has

been allocated to Section II c of the List of MAK and BAT Values (DFG 2022). This section lists substances for which the previous MAK values, designations and classifications have been withdrawn and which are no longer being reviewed at present.

## Notes

### Competing interests

The established rules and measures of the Commission to avoid conflicts of interest ([https://www.dfg.de/mak/conflicts\\_interest](https://www.dfg.de/mak/conflicts_interest)) ensure that the content and conclusions of the publication are strictly science-based.

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