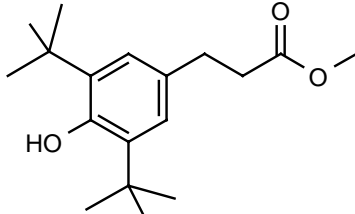


SIDS INITIAL ASSESSMENT PROFILE

CAS No.	6386-38-5
Chemical Name	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, methyl ester (Metilox)
Structural Formula	
RECOMMENDATIONS	
The chemical is currently of low priority for further work.	
SUMMARY CONCLUSIONS OF THE SIAR	
Human Health	
<p>Metilox was of low toxicity in acute toxicity tests, with an oral LD50 value of >5000 mg/kg bw, an inhalation LC50 above 55 mg/m³ and a dermal LD50 of >3000 mg/kg. The substance is not irritating to the skin and eye. No indication for sensitisation due to Metilox was found.</p> <p>The LOAEL found after repeated oral exposure during a 90 day study was 70 mg/kg bw per day. The liver and thyroid were the target organs, showing hypertrophy. In a reproduction study the NOAEL for parental toxicity was 10 mg/kg bw per day, based on decreased food consumption, decreased body weight gain and liver hypertrophy. No effects on fertility were observed. Effects on pups (decreased litter size, viability and weight) were reported at 250 mg/kg bw per day. The NOAEL for developmental effects is 100 mg/kg bw per day. Metilox is not mutagenic in the Ames test and in the chromosome aberration test <i>in vitro</i>.</p>	
Environment	
<p>Metilox has a low vapour pressure and calculated logPow between 5 and 6. Water solubility is 2.2 mg/L. The substance is hydrolysed to its carboxylic acid. Both Metilox and its hydrolysis product are not or very limited biodegradable and are expected to end up in the sediment. In the 1970s Metilox and degradation products have been monitored in surface water and sediment near a contaminated production site.</p> <p>At the water solubility limit Metilox was not acutely toxic to fish and daphnids (96-h LC50 5.8 mg/L in fish and 24-h EC50 >100 mg/L in a Daphnia test with the use of a dispersant (nominal concentrations)). For algal growth the 48 h EC50 was 2.3 mg/L (measured concentration). The NOEC in a <i>Daphnia magna</i> reproduction study was 0.123 mg/L. Based on this lowest NOEC and applying a safety factor of 50, a PNEC of 2.5 µg/L was derived. The BCF for the main metabolite, Metilox acid, has been determined in carp to be 60-223 (at 50 µg/L) and 121-532 (at 5 µg/L).</p>	

Exposure

The production volume of Metilox was 23,500 tonnes in 1992. Greater than 99.8% of the production volume is used as an intermediate in the synthesis of phenolic antioxidants for polymers. Other usages are as an antioxidant in motor oils, hydraulic fluids and lubricants. A very minor part of the production volume is used in fragrances.

During production worker exposure is expected to be very low or negligible, due to the closed production process. Environmental exposure due to release via waste water during cleaning processes and spillage of motor oils may occur.

Some consumers may be exposed to very low concentrations of Metilox found in fragrances.

NATURE OF FURTHER WORK RECOMMENDED

There is currently no concern for health.

Based on the available data there is currently no concern for the environment. However local, regional or national exposure information gathering may be considered. If that information indicates significant sediment exposure then the hydrolysis rate of Metilox and effects of Metilox and/or degradation products on sediment dwelling organisms should be investigated.