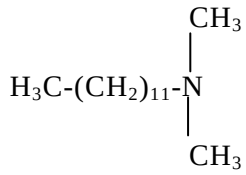
SIDS INITIAL ASSESSMENT PROFILE

CAS No.	112-18-5
Chemical Name	N,N-Dimethyldodecylamine
Structural Formula	

RECOMMENDATIONS

The chemical is a candidate for further work.

SUMMARY CONCLUSIONS OF THE SIAR

There are two industrial products containing N,N-dimethyldodecylamine with different purities, Genamin 12R 302 D (> 95 % C12-Dimethyldodecylamine) and the structural related Genamin 302 D (approximately 70 % C12-, 25 % C12-14- and 5 % C16-dimethylalkylamine).

The SIAR covers the C12- as well as the C12-14 alkyldimethylamine (Cas-No. 84649-84-3).

Human Health

Genamin 12 R 302 D and Genamin LA 302 D have been found to be harmful following oral administration to rats. Both compounds showed strong irritating or corrosive effects after either four hours or three minutes exposure. In a 28-day subchronic toxicity study, the 'No Observed Effect Level' (NOEL) was 50 mg/kg bw/day. The reference compound Genamin 12 R 302 D was not mutagenic in the Ames test with and without metabolic activation. 302 D was also not mutagenic in a micronucleus test in vivo. The corrosive property of the compounds prompt workers to limit the potential exposure to this chemical. Due to the related self-warn effect, exposure will be self-restricted to a minimum.

Environment

N,N-dimethyldodecylamine can be classified as readily biodegradable. A high potential for adsorption onto sludge is assumed. In an activated sludge simulation test with domestic activated sludge a mean primary degradation of 99.6% was found. The following effect values were found: *Brachydanio rerio*: 96h-LC50 = 0.71 – 1 mg/l; *Daphnia magna*: 48h-EC50 = 0.083 mg/l, *Scenedesmus subspicatus*: 72h-EC50 < 23.5 µg/l and 14 µg/l. In addition ecotoxicity tests using river water as test medium are available. For the green algae *Scenedesmus subspicatus* a 72h-EC50 of 56 mg/l and a NOEC of 20 µg/l was found. In a reproduction test with Daphnia magna a 21d-NOEC of 36 µg/l was obtained. Based on these data a PNECriverwater of 0.4 µg/l can be derived using an assessment factor of 50. A sediment test with the nematode *Caenorhabditis elgans* was conducted, in which a NOEC of 1620 mg/kg dw was found. With an assessment factor of 100 a PNECsed of 16.2 mg/kg dw was derived. Acute terrestrial test with earthworm and plants are available. The lowest effect value was found for Brassica napus with an 21d-EC50 of 120 mg/kg dw for the endpoint shoot height. A PECsoil of 120 µg/kg dw can be derived from this value using an assessment factor of 1000.

Exposure

N,N-dimethyldodecylamine is produced from lauryl alcohol and dimethylamine. In 1999 C12-14 alkyldimethylamine was produced and processed in the EU in an amount of 27.000 t and in the USA in an amount of 29.500 t. There are 4 European companies and 2 US companies that produce and/or process C12-14 alkyldimethylamine. C12-14 alkyldimethylamine is used as an intermediate for manufacture of amineoxides and quarternary amino compounds. The subsequent products are used as disinfectants; detergents; dyeing auxiliaries, wetting agents, antistatic agents and bleaching agents in textile industry; pharmacy; corrosion inhibitors; fuel oil antiicing; pourpoint additives; molecular weight regulators in plastic industry; prevention of waterspots in photography; complexing developers and dyes. Releases into the environment may occur during production, and use of the subsequent products. Processing to amineoxides and quarternary amino compounds is assumed to be a waste-water free process, therefore, no releases into the hydrosphere are expected by this life-cycle step.

NATURE OF FURTHER WORK RECOMMENDED

One production site was identified where risk reduction measured might be warranted.