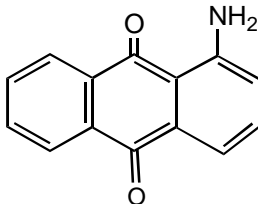


**SIDS INITIAL ASSESSMENT PROFILE**

<b>CAS No.</b>	82-45-1
<b>Chemical Name</b>	9,10-Anthracenedione, 1-amino-
<b>Structural Formula</b>	

**CONCLUSIONS AND RECOMMENDATIONS**

A potential hazard to the environment due to toxicity to algae is identified, but exposure is low in the sponsor country.

Unless further information on exposure in other Member countries presents evidence to the contrary, it is currently considered of low potential risk and low priority for further work.

**SHORT SUMMARY WHICH SUPPORTS THE REASONS FOR THE CONCLUSIONS AND RECOMMENDATIONS**

Production volume of 1-aminoanthraquinone in Japan is ca. 1,000 - 2,000 tonnes/year in 1990-1993. This chemical is used as intermediates for dyes and pharmaceuticals in closed system in Japan. This chemical is stable in neutral, acidic or alkaline solutions, and is considered as "not readily biodegradable". Direct photodegradation is expected as this chemical absorbs UV light with half-life of about one week.

The potential environmental distribution of the chemical obtained from a generic fugacity model (Mackey level III) showed that the chemical would be distributed mainly to water and soil. Predicted environmental concentration ( $PEC_{local}$ ) of this chemical was estimated as  $1.7 \times 10^{-4}$  mg/l from Japanese local exposure scenario. As indirect exposure, the daily intake through drinking water is estimated as  $5.6 \times 10^{-6}$  mg/kg/day and through fish is calculated as  $3.5 \times 10^{-2}$  mg/kg/day.

For the environment, various NOEC and  $LC_{50}$  values were gained from test results;  $LC_{50} = > 1000$  mg/l (acute fish);  $EC_{50} = > 1000$  mg/l (acute daphnia);  $EC_{50} = 0.25$  mg/l (acute algae); NOEC = 0.10 mg/l (acute algae); NOEC = 0.32 mg/l (long-term daphnia reproduction). From the lowest toxicity data to algae, acute-NOEC of *Algae* (0.1 mg/l) was adopted for the calculation of PNEC. The assessment factor of 100 was used to both acute and chronic toxicity data to determine PNEC according to the OECD Provisional Guidance for Initial Assessment of Aquatic Effects. Thus, PNEC of the chemical is 0.001 mg/l in the present report. The PEC is lower than the PNEC, therefore environmental risk is presumably low.

As 1-aminoanthraquinone is produced in a closed system, exposure during synthesis may be excluded. The product is filled into barrels under the local exhaust ventilation. Inhalation at work place is considered to be main exposure route while skin contact plays a minor role. However workers wear personal protective equipment (e.g. safety glasses, dust respirator, rubber gloves) during the filling process. Therefore, the exposure at work place is considered to be negligible at present situation. In addition, this chemical is not contained in consumer products, because it is an intermediate in industrial use.

Although the chemical showed positive results only in *S. typhimurium* TA 1537 with metabolic activation, negative results were obtained by other bacterial strains and chromosomal aberration test *in vitro*. In a combined repeat dose and reproductive/developmental toxicity screening test, several toxicological findings in kidney and spleen were observed at the lowest dose (eosinophilic droplet/body [kidney], nephropathy [spleen]). The parental animals exhibited no effects on reproductive parameters such as fertility index. However, nursing behaviour disappeared in all of the treatment female groups. Viability of pups on day 4 after birth was decreased in all treatment groups. Therefore, NOEL was less than 40 mg/kg/day both for repeated dose toxicity and reproductive toxicity.

As for indirect exposure via environment, PEC was estimated as  $1.7 \times 10^{-4}$  mg/l from local exposure scenario. The daily intake through drinking water is estimated as  $5.6 \times 10^{-6}$  mg/kg/day and through fish is calculated as  $3.5 \times 10^{-3}$  mg/kg/day. For human health, although NOEL is estimated as less than 40 mg/kg/day for both repeated dose and reproductive toxicity, the margin of safety is large. Therefore, health risk through the environment, in general, is considered to be presumably low due to its use pattern and exposure situation.

In conclusion, no further testing is needed at present considering its toxicity and exposure levels.

#### **NATURE OF FURTHER WORK RECOMMENDED**