

**SIDS INITIAL ASSESSMENT PROFILE**

<b>CAS No.</b>	78-67-1
<b>Chemical Name</b>	2,2'-Azobis(2-methylpropionitrile)
<b>Structural Formula</b>	$(\text{H}_3\text{C})_2\text{C}(\text{CN}) \text{ N}=\text{NC}(\text{CN})(\text{CH}_3)_2$

**RECOMMENDATIONS**

The chemical is currently of low priority for further work.

**SUMMARY CONCLUSIONS OF THE SIAR****Human Health**

2,2'-Azobis(2-methylpropionitrile) is considered not to be irritating to skin and eyes, or a skin sensitizer. In an OECD combined repeat dose and reproductive/developmental toxicity study in rats at 2, 10 and 50 mg/kg/day, this chemical was toxic to the liver as well as the kidneys. Increases in eosinophilic bodies and basophilic changes of the renal tubular epithelial cells in the kidneys were observed only in treated male rats. This male rat specific renal toxicity might be caused by accumulation of  $\alpha_2\mu$ -macroglobulin as one of the possible mechanisms. Centrilobular hypertrophy of hepatocytes with the related changes in hepatotoxic blood parameters was detected at the middle and high doses in both sexes. NOAEL for repeated dose toxicity was considered to be 2 mg/kg/day, based on hepatic toxicity. As there was only a reduction in viability and body weight of offsprings after birth at the high dose, most likely due to maternal toxicity, NOAEL for reproductive toxicity was considered to be 50 mg/kg/day. This chemical may not be genotoxic, based on negative results of bacterial mutation testing and chromosomal aberration *in vitro* testing.

**Environment**

2,2'-Azobis(2-methylpropionitrile) is not readily biodegradable (OECD 301C: 0% after 28-day), and it is stable in water ( $T_{1/2} = 304$  days at pH 7).

72-h  $\text{EC}_{50}$  of algae, *Selenastrum capricornutum* is more than 9.4 mg/l, and 72h NOEC is 4.2 mg/l. For the *Daphnia magna* test, 48-h  $\text{EC}_{50}$  for immobilisation is more than 10 mg/l, and 21-day  $\text{EC}_{50}$  and 21-day NOEC for reproduction are 7.5 mg/l and 2.2 mg/l, respectively. For testing in fish, Medaka (*Oryzias latipes*), 96-h and 14-day  $\text{LC}_{50}$  values are both more than 10 mg/l. No data are available for effects on terrestrial organisms.

**Exposure**

The production volume of 2,2'-Azobis(2-methylpropionitrile) is 1,100 tons/year in 1993 in Japan. This chemical is used in closed systems as an initiator of polymerisation in polymer industry, and not included in consumer products, therefore no consumer exposure is expected.

This chemical is released into the environments from the production and process sites, and as an example its amount is reported to be 1 kg/year by a processor who treats 12 tonnes/year. A generic fugacity model (Mackey level III) shows that most (98.6%) of this chemical will distribute in water phase after it is discharged into water.

<b>NATURE OF FURTHER WORK RECOMMENDED</b>
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