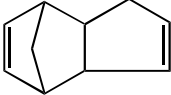


SIDS INITIAL ASSESSMENT PROFILE

CAS No.	77-73-6
Chemical Name	Dicyclopentadiene
Structural Formula	

CONCLUSIONS AND RECOMMENDATIONS**Environment**

The chemical is moderately toxic to aquatic organisms and is considered not readily biodegradable. The predicted environmental concentration is lower than the predicted no effect concentration. It is currently considered of low potential risk and low priority for further work.

Health

The chemical is moderately toxic in repeated doses toxicity study (i.e. liver, kidney, adrenal) and an irritant to the skin and eyes. Within the Sponsor country exposure is well controlled based on the only known use as an intermediate in a closed system for the manufacture of resins. Consumer exposure and estimated daily intake through in-direct exposure are also considered to be low. As margin of safety is very large, 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

Dicyclopentadiene is stable solid with a production volume of ca. 33,000 tonnes in 1993 in Japan. The chemical is used as an intermediate for production of resins in closed systems. This chemical is used as a consumer product at a concentration of 0.2% in Germany.

Dicyclopentadiene is considered not readily biodegradable. Direct photodegradation is expected and dicyclopentadiene has a high potential bioaccumulation. Modelling of the potential environmental distribution of dicyclopentadiene (obtained from a generic fugacity model (Mackay level III)) indicates that the chemical will be distributed mainly to water. Using production data from Japan and Germany the predicted environmental concentrations (PEC_{local}) of this chemical were estimated for the aquatic environment as 8.3×10^{-4} mg/l and 2.6×10^{-2} mg/l respectively.

The lowest acute toxicity data to algae, zooplankton and fish were: 27mg/l (72 h- EC_{50} of *Selenastrum*), 8mg/l (48 h EC_{50} *Daphnia magna*) and 4.3 mg/l (96 h LC_{50} of *Oryzias latipes*), respectively. The lowest chronic toxicity data to algae and zooplankton were; 18 mg/l (72 h-NOEC (growth) of *S. capricornutum*) and 3.2 mg/l (21d-NOEC (reproduction) *Daphnia magna*). The lowest acute and chronic toxicity data for each trophic level were considered in calculating the predicted no effect concentration (PNEC). An assessment factor of 100 was applied to both acute and chronic toxicity data to determine the PNEC, because chronic toxicity data for fish was absent. The PNEC was calculated as 0.032 mg/l. The chemical is moderately toxic to fish, daphnids and algae however the predicted environmental concentration is lower than the predicted no effect concentration and therefore, the environmental risk is considered to be low.

The main route of human exposure is inhalation with a limited numbers of workers potentially exposed during tank filling, sampling and analytical work. The concentration in the atmosphere was measured at two production sites as 12.9 mg/m^3 (range $2.7 - 90 \text{ mg/m}^3$) during sampling operations. Therefore, the worst case occupational Estimated Human Exposure ($\text{EHE}_{\text{inhal}}$) may be estimated as 0.94 mg/kg/day . Indirect exposure via the environment, the daily intakes through drinking water and fish are estimated as $8.7 \times 10^{-4} \text{ mg/day}$ and $1.5 \times 10^{-2} \text{ mg/kg/day}$, respectively, based on $\text{PEC}_{\text{local}}$ of $2.6 \times 10^{-2} \text{ mg/l}$.

Dicyclopentadiene is considered as an irritant to skin and eyes. This chemical showed no genotoxic effects in bacteria and chromosomal aberration tests *in-vitro*. In a combined repeat dose and reproductive/developmental toxicity screening test, both male and female rats showed slight suppression of body weight, and two female rats died before the pregnancy. Histopathological examination showed single cell necrosis in the liver, and hyaline droplets and basophilic change in the tubular epithelium of the kidneys in male rats. This compound had no effects on reproductive parameters. The no-observable effect level (NOEL) was identified as 4 mg/kg/day for repeated dose toxicity and 100 mg/kg/day for reproductive toxicity.

For human health, the risk for workers is expected to be low because the frequency of exposure is very limited and personal protective equipment is worn. The risks to the consumer and the general population through indirect exposure are also assumed to be low because a margin of safety through drinking water or fish is calculated to be 5600 or 267. Therefore, it is currently considered of low potential risk and low priority for further work.

NATURE OF FURTHER WORK RECOMMENDED