

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

June 30, 1994

TO: Benzyl Dimethylamine File (CAS # 103-83-3)
FROM: George Eurich
SUBJECT: Screening Level for Benzyl Dimethylamine

The following sources were searched for information on this compound:

RTECS	NIOSH
IRIS	NTP MANAGEMENT STATUS REPORT
EPB LIBRARY	IARC MONOGRAPHS
ACGIH	EPB CHEMICAL CRITERIA DATABASE
HEAST	CAS ONLINE (1967-1994)
NLM (1981-1994)	

The screening level is calculated from a Union Carbide rat 4-hour LC50. Fischer 344 rats (6/sexes/group) were exposed to mean concentrations of 501, 277, 139, and 24 ppm benzyldimethylamine in a single 4 hour inhalation study. All animals in the high dose group died within 2.5 hours of the start of the experiment. Animals of the remaining groups survived the exposure and the 14-day postexposure period. Surviving animals showed signs of periorbital and perinasal reddish crust, salivation and urogenital area wetness. At the 277 ppm dose, both male and female rats showed pulmonary congestion and males exhibited nasal cavity rhinitis. The LC50 was calculated to be 373 ppm (with 95% confidence limits) according to Thompson's moving averages method. Because there appears to be a steep dose-mortality curve, in that all animals died at the 501 ppm dose, and none at the 277 ppm dose, the latter will be used as a surrogate LC50 for determining an ITSL according to Rule 232 (1) (f) as follows:

MW = 135.23

1 ppm = 0.0055 mg/l : 277 ppm = 1524 mg/m³

ITSL = $\frac{1524 \text{ mg/m}^3}{500 \times 100} = 30 \text{ ug/m}^3$ based on annual averaging time.

References:

Fait, D.W., and Dodd, D.E. 1981. N-Benzyl-N,N-Dimehtylamine Four-Hour Acute LC50 Inhalation on Rats and Mice. Union Carbide Corporation internal study.

GE:ma