

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

May 26, 1998

TO: File for Di-sec-butylamine (CAS No. 4444-67-1)  
FROM: Marco Bianchi, Toxics Unit, Air Quality Division  
SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for di-sec-butylamine is 417  $\mu\text{g}/\text{m}^3$  based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: IRIS, HEAST, NTP Management Status Report, RTECS, EPB-CCD, EPB library, CAS-online, NLM-online, IARC, NIOSH Pocket Guide, ACGIH Guide, and Patty's Industrial Hygiene and Toxicology.

A review of the above databases provided only limited information to derive an ITSL for di-sec butylamine. In a subacute inhalation study by Gage (1970), four male and four female rats were exposed to 50 mg/L (50,000  $\text{mg}/\text{m}^3$ ) for nineteen, 6-hour exposures. The result of these exposures caused restlessness, initial tremors, incoordination, and no weight gain, the organs appeared normal at autopsy. Although only one dose level was used, discussions with other staff toxicologists concurred it was still appropriate to use it as a LOAEL. Adverse effects were interpreted as minimal, and the description "organs normal at autopsy" was defined by the author as "examination revealed no changes to organs which could be attributed to the treatment". Therefore, a LOAEL of 50,000  $\text{mg}/\text{m}^3$  will be used to derive an ITSL.

LOAEL = 50,000  $\text{mg}/\text{m}^3$

NOAEL to LOAEL safety factor = 10

35-fold safety factor will be reduced to 30 for this 4-week study

ITSL = LOAEL/(30x100x10) x hours exposed per day/24hrs/day

ITSL = (50,000  $\text{mg}/\text{m}^3$ )/(30x10x100) x 6hrs/24hrs = 0.4166  $\text{mg}/\text{m}^3$

0.4166  $\text{mg}/\text{m}^3$  x 1000 $\mu\text{g}/\text{mg}$  = 417  $\mu\text{g}/\text{m}^3$

The ITSL for di-sec-butylamine = 417  $\mu\text{g}/\text{m}^3$  based on annual averaging.

**Reference:**

Gage J.C. 1970. The subacute inhalation toxicity of 109 industrial chemicals. Brit J Ind Med., 27, 1-18.

MB:SLB

cc: Mary Lee Hultin, AQD