

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Bis(chloroethyl)ether file (CAS # 111-44-4)  
FROM: Doreen Lehner  
SUBJECT: Screening level for bis(chloroethyl)ether  
DATE: June 8, 2015

The Initial Risk Screening Level (IRSL) for bis(chloroethyl)ether (CAS # 111-44-4) is 0.003  $\mu\text{g}/\text{m}^3$  based on an annual averaging time. The IRSL was established on July 23, 1986 and is based on the EPA (1994) carcinogenic risk from inhalation exposure Inhalation Unit Risk (IUR) of  $3.3 \times 10^{-4} (\mu\text{g}/\text{m}^3)^{-1}$ . This IUR is based on an increased incidence of hepatomas in male (C57B1/6 x C3H/AnF) mice that were dosed via gavage beginning at seven days of age and at four weeks exposure dosing was continued via the diet for 18 months (Innes et al., 1969).

Rule 231(1) was used to develop an IRSL for bis(chloroethyl)ether. The equation is below:

$$IRSL = \frac{1 \times 10^{-6}}{Unit\ Risk}$$

Using the IUR of  $3.3 \times 10^{-4} (\mu\text{g}/\text{m}^3)$  gives:

$$IRSL = \frac{1 \times 10^{-6}}{3.3 \times 10^{-4}} = 0.003 \mu\text{g}/\text{m}^3$$

**References:**

APCR, 1994. Air Pollution Control Rules, Promulgated pursuant to Part 55, Air Pollution Control of the Natural Resources and Environmental Protection Act, Michigan Department of Environmental Quality. 1994. Act 451, as amended (NREPA).

EPA. 1994. Integrated Risk Information System (IRIS). Bis(chloroethyl)ether (BCEE) (CASRN 111-44-4). Retrieved data on 6/2/2015. Available online at: <http://www.epa.gov/iris/subst/0137.htm>

Innes JRM, Ulland MG, Valerio MG, Petrucelli L, Fishbein L, Hart ER, Pallota AJ, Bates RR, Falk HL, Gart JJ, Klein M, Mitchell I, and Peters J. 1969. Bioassay of pesticides and industrial chemicals for tumorigenicity in mice: a preliminary note. J Natl Cancer Inst. 42(6):1101-1114.

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