

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

August 16, 1999

TO: File for Epoxy Resin Solution (EPA # 103550)

FROM: Marco Bianchi

SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for epoxy resin solution is $6 \mu\text{g}/\text{m}^3$ 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, and ACGIH Guide.

Epoxy resin solution is considered a trade secret by its formulator, PPG Industries. An EPA number has been assigned to this compound, but a Chemical Abstract Service number (CAS #) has not. Since the name of this compound describes a chemical family instead of a specific chemical, and the references and databases that are used to obtain chemical information are not indexed by EPA numbers, there is no way to acquire any useful toxicologic information. Therefore, PPG Industries was asked to provide toxicology data for this compound.

A review of the data by PPG Industries provided the minimum toxicological requirements to determine an ITSL for epoxy resin solution. This compound was administered as a one time dose via gastric intubation to a single group of five male and five female albino rats at a dose level of 2000 mg/kg. Mortality, clinical observations, body weights and gross necropsy findings were evaluated. Results showed no remarkable body weight changes or gross necropsy findings. Clinical findings were limited to five rats with mucoid feces and two rats with wet yellow urogenital staining on the day of dosing (day 0). All animals appeared normal by day 1 and throughout the remainder of the 14 day study. No deaths were reported throughout the study. The LD_{50} was found to be greater than 2000 mg/kg.

The ITSL was derived as follows:

$\text{LD}_{50} = 2000 \text{ mg/kg}$

$$\text{ITSL} = \frac{1}{500} \times \frac{1}{40} \times \frac{1}{100} \times \frac{2000}{0.167 \times 0.945} = 0.00634 \text{ mg/m}^3$$

$0.00634 \text{ mg/m}^3 \times 1000 = 6.34 \text{ ug/m}^3$ based on annual averaging.

The ITSL for epoxy resin solution = 6 ug/m^3 based on annual averaging.

References:

1. PPG Industries, Inc. WIL-13078. ABC Project No. 41443. Acute Oral Toxicity Study of PMN 1844 in Albino Rats.

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