

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

February 28, 1986

TO: File

FROM: Catherine Simon

SUBJECT: Risk Assessment for Epichlorohydrin (CAS No. 106-89-8)

The U.S. Environmental Protection Agency has reviewed the available carcinogenicity data for epichlorohydrin (EPA, 1984). Their review indicates that there is sufficient evidence in animals that epichlorohydrin is carcinogenic, and that epichlorohydrin is mutagenic in both prokaryotic and eukaryotic systems. The available epidemiology data are inadequate to assess the carcinogenic potential of epichlorohydrin in humans. Applying the International Agency for Research on Cancer (IARC) criteria for classifying the weight of evidence for carcinogenicity, epichlorohydrin is placed in the 2B category, meaning that it is "probably carcinogenic to humans."

The EPA has also conducted a quantitative risk assessment for epichlorohydrin (EPA, 1984). The recommended potency for estimating risk from chronic low level inhalation exposure is  $1.2 \times 10^{-6} \text{ (ug/m}^3\text{)}^{-1}$ . This value was determined by applying the "linearized" multistage model to the study by Laskin et al (1980), in which male Sprague-Dawley rats exposed to epichlorohydrin by inhalation, developed an increased incidence of nasal squamous cell carcinomas.

I have reviewed EPA's carcinogenic assessment of epichlorohydrin and concur with their findings. Using the potency value of  $1.2 \times 10^{-6} \text{ (ug/m}^3\text{)}^{-1}$ , the concentration in air resulting in a  $1 \times 10^{-6}$  increased cancer risk is  $0.8 \text{ ug/m}^3$ . This value assumes exposure occurs for 24 hours per day, 365 days per year, for an entire lifetime.

References

- U.S. Environmental Protection Agency. 1984. Health Assessment Document for Epichlorohydrin. EPA-600/8-83-032F.
- Laskin, S. et al 1980. Inhalation carcinogenicity of epichlorohydrin in noninbred Sprague-Dawley rats. J. Natl. Cancer Institute 65:751-755.

CAS:mh

