

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Isophorone diisocyanate polymer file (CAS # 53880-05-0)
FROM: Gary Butterfield
SUBJECT: Screening level for Isophorone diisocyanate polymer
DATE: January 4, 2006

Isophorone diisocyanate polymer is also known as 5-isocyanato-1-(isocyanatomethyl)-1,3,3-trimethyl cyclohexane. It has the molecular formula (C₁₂ H₁₈ N₂ O₂)_x. The polymer is made up of multiple units of isophorone diisocyanate (or IPDI) monomer (CAS # 4098-71-9).

The following references or databases were searched to identify data to determine the screening level: U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS), National Institute for Occupational Safety and Health (NIOSH) Registry for Toxic Effects of Chemical Substances (RTECS), American Conference of Governmental and Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), Michigan Department of Environmental Quality (DEQ) library, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service (CAS) Online (1968 - December 2005), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

The NLM search located one unpublished acute inhalation toxicity study that was conducted with a clear coating system of which isophorone diisocyanate polymer was one of approximately eight ingredients. Unfortunately the study that was submitted to EPA was sanitized to remove confidential business information (CBI). The list of chemicals and percentage of each chemical in the coating system were considered to be CBI and deleted from the report. Thus, it is not possible to find out what chemicals are in the coating system, or at what percentage of the total system lead to the LC50. Thus, this study is not of any value for setting the ITSL for isophorone diisocyanate polymer.

Due to a lack of toxicity information that was located in searches of the above references under this CAS number, the screening level is being set at 0.1 ug/m³ with annual averaging, under rule 232(1)(i).

References:

PPG Industries. 1990. Acute inhalation toxicity study in rats of Down Draft Clear Two-Pack Coating System: HC-55-4444 (Pack I)/KH-86-2677 (Pack II). Sanitized report EPA OTS # 0535255.