MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

TO: Methylvinyldimethoxysilane file (CAS # 16753-62-1)

FROM: Gary Butterfield

SUBJECT: Screening level for Methylvinyldimethoxysilane

DATE: June 2, 2009

Methylvinyldimethoxysilane is also known as Dow Corning X1-2349 Intermediate MeViSi(OMe)2. It is a pale yellow liquid with a specific gravity of 0.88 g/ml at 25C. The molecular formula of methylvinyldimethoxysilane is $C_5H_{12}O_2Si$ with a molecular weight of 132 g/mol.

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 - May 2009), National Library of Medicine (NLM) - Toxline, and National Toxicology Program (NTP) Status Report.

The CAS and NLM on-line literature searches for this evaluation were conducted on May 18, 2009. There was no toxicity studies located during the search for methylvinyldimethoxysilane.

Dow Corning provided an unpublished acute inhalation LC50 study (Dow Corning 1996). A single group of 5 male and 5 female Fischer 344 rats, 6 to 7 weeks old, were exposed to 5 mg/L for 4 hours. The air concentration was measured by IR. There were no deaths during the exposure or during the 14-day recovery/observation period. The report indicates that the LC50 was greater than 5 mg/L, but not actually determined in this study. The 5 mg/L can be used as a surrogate LC50 in the calculation of the ITSL using R232(1)(f) as follows:

$$\text{ITSL} = \frac{5\ \text{mg/L}}{500 \times 100} = 100\ \text{ug/m}^3 \text{ with annual averaging}$$

References:

Dow Corning. 1996. Acute inhalation toxicity study of Dow Corning X1-2349 Intermediate MeViSi(OMe)2 in rats. Dow Corning report # 1996-I0000-41646.

GB:lh