MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

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INTEROFFICE COMMUNICATION

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August 9, 2007

TO: **Memo to File Vinyltrichlorosilane [75-94-5]**

FROM: **Margaret M Sadoff**

RE: **Screening Level Development**

A search of the literature and the following databases was performed for information regarding Vinyltrichlorosilane (VTCS): American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values, National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Hazardous Chemicals, EPA Integrated Risk Information System (IRIS), EPA High Production Volume Information System, Registry of Toxic Effects of Chemical Substances (RTECS), Environmental Protection Bureau Library, International Agency for Research on Cancer (IARC) Monographs, CAS Registry Online, Hazardous Substance Data Bank (HSDB), National Library of Medicine/Toxline, National Library of Medicine ToxSeek, Health Effects Assessment Summary Tables (HEAST), National Toxicology Program (NTP) Study Database, Entrez PubMed, Scirus, IPCS Intox Databank and CalEPA's Toxicity Values Database

INFORMATION ON THIS CHEMICAL IS EXTREMELY LIMITED.

Physical & Chemical Characteristics
(Source: NLM/Toxline HSDB)

Colorless or pale yellow liquid or solid with a sharp, choking odor (like hydrochloric acid). In its natural dry state, VTCS is non-corrosive but may become corrosive when it comes into contact with water or mucous membranes. It is highly irritating to eyes, nose and throat.

BP = 65.9 mmHg at 25C

Readily hydrolysable with liberation of hydrochloric acid: 1 mol VTCS release 3 mol HCl.

Soluble in chloroform and most organic solvents.

Reactive with water and alcohol.

Acute Toxicity

Rat oral LD 50 = 190 mg/kg (Patty's Toxicology, 2nd ed.)
Dow Corning 4-hr LC50 = 52 ppm (342 mg/m3)
Workplace Environmental Exposure Guide (WEEL) = 1 ppm (6.6 mg/mg3)

Emergency Guideline Values:

TEELs	0	0.15 ppm
	1	0.5
	2	5.0
	3	50
AEGL-1 (proposed)	10 min	0.6 ppm
	30	0.6
	60	0.6
	4 hr	0.6
	8 hr	0.6
ERPGs	1	0.5 ppm
	2	5
	3	50

No subchronic or chronic toxicity information in humans or animals.

No genetox, repro or developmental toxicity.

An ITSL can be developed pursuant to R232(1)(f) based on Dow Corning's 4-hour LC50:

$$\text{ITSL} = \frac{\text{LC50}}{500 \times 100} = \frac{342 \text{ mg/m3}}{50000} = 0.00684 \text{ mg/m3 or } \sim 7 \text{ ug/m3, annual average}$$