35884-42-5

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

June 2, 1999

TO: Files for Benzyltrimethylammonium hydroxide (100-85-6)
Lithopone (1345-05-7)
Triethylene glycol mono-2-ethylhexyl ether (1559-37-1)
1-(2-Hydroxyethylthio)propane (6713-03-7)
Dowanol DPnB (35884-42-5)
Linear primary alcohol (67762-41-8)
Hydrocarbons, terpene processing by-products (68956-56-9)
Exxate 900 (108419-33-6)
Exxate 1000 (108419-34-7)

FROM: Dan O'Brien, Toxics Unit

SUBJECT: Initial Threshold Screening Levels

The initial threshold screening level (ITSL) for each of the above listed chemicals is 0.1 µg/m^3 based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: AQD chemical files; EPA's Integrated Risk Information System (IRIS) and Health Effects Assessment Summary Tables (HEAST); American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) Booklet; National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards and Registry of Toxic Effects of Chemical Substances (RTECS); National Toxicology Program (NTP) World Wide Website (WWW), MDEQ Library; International Agency for Research on Cancer (IARC) WWW; Chemical Abstract Service (CAS) On-line and National Library of Medicine (NLM) Toxline (1967 –April 14, 1999), Chemical Evaluation Search And Retrieval System (CESARS), Handbook of Environmental Data on Organic Chemicals, Patty's Industrial Hygiene and Toxicology, Merck Index and the Condensed Chemical Dictionary.

No adequate toxicological data specific to any of these chemicals were found which could be used in the derivation of a screening level. Consequently, per section R 336.1232, Rule 232(1)(i) of Act 451, as amended, the **ITSL** for each of the chemicals listed above is **0.1 µg/m^3**, and per Rule 232(2)(c), an **annual averaging** time applies to each.

Two points warrant further elaboration. It should be noted that in the case of benzyltrimethylammonium hydroxide, one pharmacokinetic study of the related compound benzyltrimethylammonium chloride (56-93-0) was located (Sanders *et al*,

1995). The results of that study are potentially adequate to identify a Lethal Dose 50 (LD_{50}), from which an ITSL could be derived for that compound. However, lacking any data on the comparative toxicity of the chloride and the hydroxide forms of benzyltrimethylammonium, it was considered inappropriate to use the Sander's study as a basis of an ITSL for benzyltrimethylammonium hydroxide.

Second, with respect to Dowanol DPnB, the CAS search specific to its CAS number (35884-42-5) yielded a reference to an acute toxicologic evaluation of dipropylene glycol monobutyl ether (Myers and Tyler, 1992). When retrieved, that reference provided data specific to a chemical with a different CAS number (29911-28-2). A CAS structure and name search was carried out, followed by contact with STN Technical Support, to determine the structural relationship between the two compounds, and whether the toxicity information for 29911-28-2 could be used for 35884-42-5. These communications revealed Dowanol DPnB to be what CAS designates as an Incompletely Defined Substance, due to the indeterminate location of methyl groups on its structure. Thus, while the two chemicals are structurally similar, it is unclear what effect this potential shifting of the position of the methyl group might have on the toxicity of Dowanol as compared to dipropylene glycol monobutyl ether. Consequently, it was not considered appropriate to use the acute toxicity information for dipropylene glycol monobutyl ether (29911-28-2) to derive an ITSL for Dowanol DPnB (35884-42-5).

References

Myers RC, Tyler TR (1992). Acute toxicologic evaluation of dipropylene glycol monobutyl ether. *Acute Toxic. Data* **1**(3):172.

Sanders JM, Griffin RJ, Burka LT, Matthews HB (1995). Toxicokinetics of the cholinomimetic compound benzyltrimethylammonium chloride in the male rat and mouse. *Xenobiotica* **25**(3):303-313.

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