MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

July 5, 2000

TO: File for distillates (petroleum), chemically neutralized middle (CAS #64742-30-9)

FROM: Marco Bianchi, Toxics Unit, Air Quality Division

SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for *distillates (petroleum), chemically neutralized middle* is 2 micrograms per cubic meter ($\mu g/m^3$) based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: Integrated Risk Information System, Health Effects Assessment Summary Table, National Toxicology Program Management Status Report, Registry of Toxic Effects Chemical Substances, Environmental Protection Bureau (EPB)-Chemical Criteria Database, EPB library, Chemical Abstract Service (CAS)-online, National Library of Medicine-online, International Agency for Research on Cancer, National Institute for Occupational Safety and Health Pocket Guide, and American Conference of Governmental Industrial Hygienists Guide.

No adequate toxicological data specific to *distillates (petroleum), chemically neutralized middle* was found to independently derive a screening level. It was thought that a surrogate screening level for this compound could be obtained if its chemical and physical characteristics were similar to the chemical and physical characteristics of other petroleum distillates with established screening levels. This procedure was recommended by the Scientific Advisory Panel (1993), and has been used by the Air Quality Division (AQD) for other petroleum distillates (Butterfield, 1994).

A search of the Toxic Substance Control Act (TSCA) Chemical Substance Inventory (EPA, 1979) yielded a specific chemical substance definition for CAS #64742-30-9, referring to this chemical as *distillates (petroleum), chemically neutralized middle.* The definition went on to characterize the compound as "a complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominately in the range of $C_{11}$ through $C_{20}$ and boiling in the range of approximately $205^0C$ to $345^0C$." With respect to the number of carbons and the boiling range, this compound is similar to other compounds in the petroleum middle distillate range to be considered a member of this group, such as *hydrotreated middle distillate*, and *hydrosulfurized middle distillate.* These compounds have been assigned a screening level of 2 $\mu g/m^3$ with the approval of the Scientific Advisory Panel (Butterfield, 1993). *Distillates (petroleum), chemically neutralized*

*middle* has similar chemical properties to be considered a subset of these compounds. Therefore, the ITSL for *distillates (petroleum), chemically neutralized middle*, will be established at 2 $\mu g/m^3$ with an annual averaging time. Additionally, because this compound is one of a group of petroleum hydrocarbons where the toxicity is anticipated to act via similar mechanisms, the combined ambient impact of all petroleum hydrocarbon materials in this middle distillate range must be below this ITSL for the same air permit.

**The ITSL for *distillates (petroleum), chemicaly neutralized middle* = 2 $\mu g/m^3$ based an annual averaging.**

**References:**

Butterfield G (1994). Memo to AQD Toxics Unit chemical file for hydrotreated middle distillate (64742-46-7), dated 6/13/94.

Butterfield G (1994). Memo to AQD Toxics Unit chemical file for hydrodesulfurized middle distillate (64742-80-9), dated 6/13/94.

Scientific Advisory Panel (1993). Discussion paper for scientific advisory panel. Developing screening levels for hydrocarbon fractions, dated 8/19/93.

EPA 1979. TSCA Chemical Substance Inventory. Volume I: Initial Inventory. Washington, DC: Office of Toxic Substances, U.S. Environmental Protection Agency. Appendix A: Chemical Substance Definitions, p.12.

MB:SLB
cc: Cathy Simon, AQD
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