

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

November 21, 2000

TO: Straight run middle distillate file (CAS # 64741-44-2)
FROM: Gary Butterfield, Toxics Unit, Air Quality Division
SUBJECT: Screening level for straight run middle distillate

Straight run middle distillate (CAS # 64741-44-2) is described in the Toxic Substance Control Act (ToSCA) inventory as a complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C11 through C20 and boiling in the range of 205 degrees C to 345 degrees (or 401 degrees F to 653 degrees).

An April 14, 2000 CAS on-line search found no hits for this CAS number. The NLM on-line literature search found a few acute studies, including one inhalation and two oral studies that were submitted to U.S. Environmental Protection Agency (USEPA) under ToSCA. The oral LD50 studies are less suitable for deriving the screening level than the inhalation LC50 study. First of all, because the route of exposure from a LC50 study is most relevant for development of an inhalation screening level. An additional reason for not using the oral studies is that, the oral studies didn't actually determine the LD50, as no animals died at the highest dose tested, 5 g/kg.

A search of standard secondary toxicity references - RTECS, IARC, NTP, NIOSH, ATSDR, EPA's IRIS, etc. - also did not find any toxicity data for this CAS number that could be used to determine a screening level.

A screening level based on the rat acute inhalation LC50 of 1.82 mg/L or 1820 mg/m³, as reported by Hazleton Labs (1986), provides the best basis for setting the screening level. The ITSL can be calculated from this 4 hour LC50 by use of the equation in R232(f) as follows.

$$\text{ITSL} = \frac{1.82 \text{ mg/L}}{500 \times 100} = 36 \text{ } \mu\text{g/m}^3 \text{ with annual averaging.}$$

References:

Hazleton Labs. 1986. Acute inhalation toxicity evaluation of petroleum hydrocarbons. EPA/OTS0000411-3

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