

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

June 11, 1999

TO: File for Naphtha, Light Catalytic Reformed (CAS No. 64741-63-5)  
FROM: Michael Depa  
SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for light catalytic reformed naphtha is 100 µg/m<sup>3</sup> (annual averaging time).

The following references or databases were searched to identify data to determine the ITSL: EPA's Integrated Risk Information System (IRIS), Registry of Toxic Effects of Chemical Substances (RTECS), American Conference of Governmental and Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), National Institute of Occupational Safety and Health (NIOSH) Pocket Guide to Hazardous Chemicals, Environmental Protection Bureau Library, International Agency for Research on Cancer (IARC) Monographs, Chemical Abstract Service (CAS) Online (1967 – April 27, 1999), National Library of Medicine (NLM), Health Effects Assessment Summary Tables (HEAST), and National Toxicology Program (NTP) Status Report.

The CAS Registry file for 64741-63-5 defines "light catalytic reformed naphtha (petroleum)" as:

A complex combination of hydrocarbons produced by distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C5 through C11 and boiling in the range of approximately minus 35 degree C to 190 degree C (95 F to 374 degree F). It contains a relatively large proportion of aromatic and branched chain hydrocarbons. This stream may contain 10% or more benzene.

On a MSDS sheet provided by Marathon Oil Company the composition of this distillate was described as:

Paraffins	45-52%
Cycloparaffins	6-10%
Olefins	10-30%
Aromatic Hydrocarbons	25-48%
Benzene	1-6%

An acute LC50 study was found. A group of five male and five female rats (strain not specified) were exposed to a concentration of 5.05 mg/L (~5000 mg/m<sup>3</sup>) for 4 hours (API, 1993). No animals died or exhibited clinical signs during the course of the exposures or during the 14 day observation period. No toxic signs of any significance were seen in animals of either sex that could be attributed to exposure to the test material. Individual and mean body weights were not affected by exposure to

the test material. Histopathological examination of lung tissues yielded minimal pulmonary findings. Since an LC50 could not be determined from this study the dose of 5000 mg/m<sup>3</sup> was used instead. Pursuant to Rule 232(1)(f) the ITSL was derived as follows:

$$\text{ITSL} = \text{LC50}/(500 \times 100)$$

$$\text{ITSL} = (5,000 \text{ mg/m}^3)/(50,000)$$

$$\text{ITSL} = 0.100 \text{ mg/m}^3$$

$$\text{ITSL} = 100 \text{ }\mu\text{g/m}^3 \text{ (based on an annual averaging time)}$$

The initial threshold screening level (ITSL) for light catalytic reformed naphtha is 100  $\mu\text{g}/\text{m}^3$  with an annual averaging time.

## **REFERENCE**

API. 1983. Acute inhalation toxicity evaluation of a petroleum derived hydrocarbon in rats – final report. Submitted to the American Petroleum Institute (API), 1220 L Street, N.W., Washington D.C. 20005 by Litton Bionetics, Inc., 5516 Nicholson Lane, Kensington, Maryland 20895. LBI Project No. 22235-02, December 1983. Obtained from the US Environmental Protection Agency USEPA/OTS Doc# FYI-AX-0184-0285 SU (microfiche)