

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

SEPTEMBER 21, 1994

TO: File for Potassium Fluoride (CAS # 7789-23-3)

FROM: Michael Depa, Toxics Unit

SUBJECT: Screening Level Determination

The initial threshold screening level (ITSL) for potassium fluoride is  $76 \mu\text{g}/\text{m}^3$  based on an eight hour averaging time.

The following references or databases were searched to identify data to determine the ITSL: IRIS, RTECS, ACGIH Threshold Limit Values, NIOSH Pocket Guide to Hazardous Chemicals, Environmental Protection Bureau Library, IARC Monographs, CAS Online (1967-August 20, 1994), National Library of Medicine, Health Effects Assessment Summary Tables, and NTP Status Report. Review of these sources found that EPA has not established an RfC or RfD for potassium fluoride. Occupational exposure limits (OELs) were available for fluorides of alkali metals. The NIOSH REL and the ACGIH TLV for fluorides were both  $2.5 \text{ mg}/\text{m}^3$  (as fluoride). The OEL of  $2.5 \text{ mg}/\text{m}^3$  for fluoride was used to calculate the OEL for potassium fluoride in the following way:

$$\text{OEL} = \frac{2.5 \text{ mg F}}{\text{m}^3} \times \frac{\text{Weight of KF}}{\text{Weight of F}} \times \frac{1 \text{ g}}{1000 \text{ mg}}$$

$$\text{OEL} = \frac{2.5 \text{ mg F}}{\text{m}^3} \times \frac{58 \text{ g KF}}{19 \text{ g F}} \times \frac{1 \text{ g F}}{1000 \text{ mg F}}$$

$$\text{OEL} = 7.63 \times 10^{-3} \text{ g}/\text{m}^3$$

$$\text{OEL} = 7.6 \text{ mg}/\text{m}^3$$

Pursuant of Rule 232(1)(c), the 1TSL was calculated as follows:

$$\text{ITSL} = \frac{\text{OEL}}{100}$$

$$\text{ITSL} = \frac{7.6 \text{ mg}/\text{m}^3}{100}$$

$$\text{ITSL} = 0.076 \text{ mg}/\text{m}^3$$

$$\text{ITSL} = 76 \mu\text{g}/\text{m}^3$$

The ITSL for potassium fluoride is  $76 \mu\text{g}/\text{m}^3$  based on an eight-hour averaging time.

ACGIH (1993) Documentation of threshold limit values and biological exposure indices. Cincinnati, OH. Pages 657-659.