

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

October 21, 1994

TO: File for Androstenedione (63-05-8)
FROM: Marco Bianchi
SUBJECT: Initial Threshold Screening Level

The initial threshold screening level (ITSL) for androstenedione is $17 \mu\text{g}/\text{m}^3$ based on an annual averaging time.

The following references or databases were searched to identify data to determine the ITSL: IRIS, HEAST, NTP Management Status Report, RTECS, EPB-CCD, EPB library, CAS-online, NLM-online, IARC, NIOSH Pocket Guide, and ACGIH Guide.

A complete reference check was conducted for androstenedione, but only limited information was available. Upjohn provided an in-house oral LD_{50} study for androstenedione. Two groups of four male albino rats were given a single oral dose of 5000 mg/kg body weight of androstenedione suspended in a 0.25% methylcellulose solution. Within thirty minutes to two hours post dosing, two of the four rats developed salivation and wetness around the mouth, but appeared normal thereafter. On day one post dosing, one rat had dried red material about the mouth, one rat had diarrhea and two rats appeared normal. On day two post dosing, and thereafter for the rest of the 14-day study period, all four rats appeared normal and had body weights which exceeded their fasting body weights. Necropsy of all four rats at terminal euthanasia did not reveal any gross lesions. Although there were no deaths from compound administration at 5000 mg/kg, this value will be used as a surrogate to calculate an ITSL.

The ITSL was derived as follows:

The LD_{50} for this study was determined to be 5000 mg/kg.

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$\text{LD}_{50} = 5000 \text{ mg/kg}$

$$\text{ITSL} = \frac{1}{500} \times \frac{1}{40} \times \frac{1}{100} \times \frac{5000}{0.167 \times 0.900} = 0.0166 \text{ mg/kg}$$

$0.0166 \text{ mg/kg} \times 1000 = 17 \mu\text{g}/\text{m}^3$ based on annual averaging.

The ITSL = $17 \mu\text{g}/\text{m}^3$ based on annual averaging.

MB:ma