

From: Matsumura, April Mido
Sent: Tuesday, June 05, 2007 11:27 AM
To: John_Lague@URSCorp.com
Cc: 'Don Bryan'; Hirai, Nolan S
Subject: HAP concentration screening

John,

HAP concentration screening procedure attached.
You can discard the other file I sent on phosphine since this file includes all three cases, rather than just the one.

Thanks,
April

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HAP Concentration Screening

Paraphrasing HAR §11-60.1-179(a) & (b), the director cannot approve a HAP source if the director determines that the source may result in an unacceptable ambient air concentration. The department uses the following screening procedure to determine if a HAP concentration is considered significant.

1. Non-carcinogenic HAP with a TLV-TWA

Significant concentration means an 8-hour average ambient air concentration greater than 1/100 of the TLV-TWA, and any annual average concentration greater than 1/420 of the TLV-TWA. Example:

Phosphine is a non-carcinogenic HAP per the EPA Region 9 PRG Table.
(<http://www.epa.gov/region09/waste/sfund/prg/>)

Phosphine TLV-TWA = 0.42 mg/m³ = 420 ug/m³
Reference: Guide to Occupational Exposure Values, compiled by ACGIH

Significant Concentration:

1/100 TLV-TWA = 4.2 ug/m³, 8-hour
1/420 TLV-TWA = 1.0 ug/m³

2. Non-carcinogenic HAP without a TLV-TWA

Significant concentration is a hazard index greater than 1. Divide the annual concentration of each non-carcinogenic HAP by its respective PRG designated as "nc" and determine the hazard index (HI) by summing the ratios of all non-carcinogenic HAPs.

$$HI = [(conc\ x / PRG\ x) + (conc\ y / PRG\ y) + (conc\ z / PRG\ z) \dots]$$

conc = annual concentration of each HAP
x, y, z... represent each individual non-carcinogenic HAP

Reference: Users' Guide & Background Technical Document
for USEPA Region 9's PRG Table, 2004, pg 15.

3. Carcinogenic HAP

Significant concentration for a carcinogenic HAP is a concentration that is a cancer risk greater than 1E-5, assuming continuous exposure for 70 years.

$$Risk = [(conc\ x / PRG\ x) + (conc\ y / PRG\ y) + (conc\ z / PRG\ z) \dots] \times 1e-6$$

conc = annual concentration of each HAP
x, y, z... represent each individual carcinogenic HAP

Reference: Users' Guide & Background Technical Document
for USEPA Region 9's PRG Table, 2004, pg 15.