

COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF HEALTH

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SECRETARY OF HEALTH

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April 27, 1967

Robert A. Kehoe, M. D.
Professor Emeritus of
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Dear Dr. Kehoe

Dr. Brandt informed me of your request for a copy of the calculation we discussed in my office. The following is the calculation:

Assume that no adverse effects occur when 0.5 mg is obtained by injection; provided that there is no increase in atmospheric levels. (Atmospheric levels = 1.5 $\mu\text{g}/\text{m}^3$ —Cincinnati data.)

Thus: The amount that can be safely absorbed is:

$$\text{ingestion} = 0.5 \times 0.1 = 0.050$$

$$\text{inhalation} = 1.5 \times 20 \times 0.1 = 0.003$$

$$\text{inhalation-ingestion} = 1.5 \times 20 \times 0.45 \times 0.1 = 0.001$$

$$.054 \text{ mg/day} \quad \text{Total}$$

The average amount absorbed through injection is:

$$0.3 \times 0.1 = 0.030 \text{ mg/day}$$

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Thus the amount that can be safely absorbed through
inhalation = $0.054 - 0.030 = 0.024$ mg/day

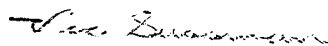
Let X = allowable atmospheric concentration

Thus: $0.024 = X (20 \times 0.1 + 20 \times 0.45 \times 0.1)$

$X = 8.3 \mu\text{g}/\text{m}^3$

Please let me know if you have any further questions concerning this.

Sincerely,



Victor H. Sussman, Director
Division of Air Pollution Control

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