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COMMONWEALTH OF PENNSYLVANIA



DEPARTMENT OF HEALTH

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April 27, 1967

Robert A. Kehoe, M. D.
Professor Emeritus of
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Cincinnati, Ohio 45219

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:

ingestion = $0.5 \times 0.1 = 0.050$

inhalation = $1.5 \times 20 \times 0.1 = 0.003$

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

.054 mg/day 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

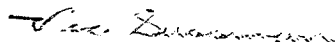
Let X = allowable atmospheric concentration

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