

To: Chuck Campbell
From: Joe Loschiavo

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As you requested, I worked out some equations to help put the recent C-8 test results in perspective. The lowest effective level found so far in rats is 25 mg/kg. This dose was applied to the skin of rats.

- ① Assuming 100% of the C-8 is absorbed through the skin I performed the following equations:

The average person weighs approximately 70 kg. Thus, the total C-8 dose to a human would be $\frac{25 \text{ mg}}{\text{kg}} \times 70 \text{ kg} = 1750 \text{ mg}$.

Over an 8-hour workday a person breathes approximately 10 m^3 of air. Therefore, the equivalent average C-8 in air concentration would be $\frac{1750 \text{ mg C-8}}{10 \text{ m}^3} = 175 \frac{\text{mg}}{\text{m}^3} \text{ C-8}$. This

is 17,500 times the AEL ($= 0.01 \text{ mg/m}^3$).

- ② Assuming only a small percentage of the C-8 is absorbed through the skin (~1%) I performed the following equations:

$$\text{Total dose} = 1750 \times .01 = 17.5 \text{ mg C-8}$$

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$$\frac{17.5 \text{ mg}}{10 \text{ m}^3} = 1.75 \frac{\text{mg C-8}}{\text{m}^3} \quad \text{This is } \underline{175} \text{ times}$$

The AEL.

So, even with a small percentage of C-8 being absorbed, the equivalent inhalation dose is many times the AEL.

The percentage of C-8 absorption that must occur to be equivalent to the total inhalation dose at the AEL would be 0.006%.

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