



INTER-OFFICE CORRESPONDENCE

To: G. Byron Edwards

Date: February 18, 1980

From: M. A. Bernabo

Location: 5 West

Subject: Human Response to EDC
Concentrations in Air

You had requested some information on the EDC threshold concentrations for smell, toxicities and death for your hazards reliability study. You were interested in some concentration and time boundaries for different effects. I have compiled the following from a brief review of the relevant literature.

<u>Effect</u>	<u>Concentration</u>
Detection of odor (sweet)	3 - 100 ppm ¹ (p. 16)
Barely detectable odor	50 ²
Definite odor	100 ²
Pronounced odor	200 ²

*Odor is not a good warning of chronic hazardous exposure because it is not an unpleasant, striking odor; can be adapted to at low concentrations; and the threshold varies considerably for different individuals.

<u>Effect</u>	<u>Concentration</u>
1. Acute poisoning--weakness, dizziness, vomiting, headache, irritation of mucous membranes and skin. Some fatalities when signs and symptoms above occur 2 ⁺ times in two to three weeks.	Repeated exposure to 75-125 ppm. ¹ (p. 39)
2. Delayed effects until evening--lassitude, malaise, nausea, vomiting and abdominal pain.	100 ppm -- 8 hrs/day chronic exposure ¹ (p. 41)
3. Dryness of mouth, unpleasant sweetish aftertaste, dizziness, lassitude, sleepiness, nausea, vomiting, constipation, poor appetite, burning eyes, lachrimation, and pain in epigastrium. <u>Reversible effects when removed from job.</u>	62 - 200 ppm chronic exposure ¹ (p. 97)

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| 4. Adverse cardiac and nervous system effects. | 25 ppm for 6 mos. to 5 yrs. ¹ (p. 99) |
| 5. Adverse effects on gastro intestinal, liver, bile duct, and nervous system. | 10-15 ppm for 5 yrs.
50 ppm maximum
20 ppm - 15% of time ¹
(pp. 99-100) |
| 6. No adverse effects. | 5 ppm - 40 hr. work week
15 ppm - 15 min. ceiling ¹
(pp. 100-101) |

References:

¹NIOSH Criteria Document for Ethylene Dichloride (US Dept. of HEW, 1976)

²Patty's Industrial Hygiene and Toxicology (Vol. II, p. 1284)

I hope this information will be of assistance to you. The NIOSH criteria document lists many other references and is a good source of information. Please contact me if you have any questions.

M. A. Bernabo
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cc: Z. G. Bell
A. P. Leber

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