

40 CFR Part 61.61 (O)
REVISION OF THE DEFINITION OF "ETHYLENE DICHLORIDE PURIFICATION"

EPA Response to Vinyl Institute NAPTAC Comments

"The revision to the definition was not intended to broaden the existing definition but was intended to clarify the definition because certain plants had misinterpreted what equipment was covered. The existing definition was intended to include inprocess storage tanks (where vinyl chloride may be present) and not final product storage tanks (where vinyl chloride is not expected to be present). The reason for the revision will be added to the preamble. (Meanwhile, the BF Goodrich representative indicated that he would submit information on the vinyl chloride content of liquid ethylene dichloride and vapor space in storage tanks that might, in his opinion, be regulated by the revised definition as written. The purpose of this submittal is to help us clarify which tanks in fact we intended to be covered by the standard.)

VINYL INSTITUTE RESPONSE:

As we stated at the NAPTAC Meeting in Durham on August 30, 1984, EPA has presented no rationale or discussion concerning revision of the definition of "ethylene dichloride purification." No justification has been presented for inclusion of storage tanks in this definition. No estimates of vinyl chloride emissions or cost impact for including storage tanks was provided. Absolutely no technical, environmental or economic justification was provided.

To demonstrate that storage tanks do not pose a significant source of vinyl chloride emissions and that the cost associated with required controls is not justified we present the actual data from the plants involved as follows:

PLANT	TANKS	SIZE (M GALLONS)	VCM EMISSIONS (Tons/Year)	COST OF CONTROLS
A	8	1.0 - 523	1.3	2,300,000
B	1	200	0.03	20,000
C	7	850'	1.5	680,000

• Total of 7 tanks

"C.C. / 1000"

A 2.15 × 10⁶

B 6.7 × 10⁶

C 13.5 × 10⁶

From AP 42, Supplement 12

$$L_B = 2.26 \times 10^{-2} M \left(\frac{P}{14.7 - P} \right)^{0.68} D^{1.73} H^{0.15} \Delta T^{0.5} F_P C K_C$$

Where L_B = Fixed roof breathing loss, lb/yr. organics
 M = Molecular weight lb/mole
 P = True vapor pressure at bulk liquid condition psia
 D = Tank diameter, feet
 H = Average vapor space height, including roof volume correction, ft.
 ΔT = Average ambient temp. change night and day, °F.
 F_P = Paint factor (from Table 4.3.2).
 C = Adjustment factor for small diameter tanks (from Figure 4.3.4).
 K_C = Crude oil factor (.65 for crude oil, 1.0 for gasoline and other liquids).

V-130 (at OCD)

M = 35.8 Average
 P = 2.53 psia (Organics)
 D = 30 ft.
 H = 8 ft.
 ΔT = 9.3°F
 F_P = 1.0
 C = 1.0
 K_C = 1.0

$$L_B = (.226) (99) (.344) (3593.3) (2.89) (3.05) (1) (1) (1) \\ = 2437.6 \text{ lbs EDC/yr}$$

$$VCM = 2437.6 \times .0235 = \underline{57.3} \text{ lbs/yr. (VCM)}$$

TANK CONDITIONS

Tank - V- 130
Dimensions - 30 ft. diameter x 40 ft. high
Tank Color - White
Paint Condition - Good
Liquid Temperature 35°C.
Liquid Level - Constant
Material - Ethylene Dichloride
Weight Fraction EDC in Vapor - 0.0235