

D.1

$$t = \frac{\mu \alpha \rho_c}{2 \Delta P} \left(\frac{V}{A} \right)^2$$

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$$\text{SLOPE} = \frac{\mu \alpha \rho_c}{2 \Delta P} = 0.317 \text{ cm}^2/\text{s}$$

$$\frac{\mu \alpha}{2 \Delta P} \rho_c = 0.317 \quad \text{FOR } \rho_c = 0.0034 \text{ g/cm}^3$$

$$\frac{\mu \alpha}{2 \Delta P} = \frac{0.317}{0.0034} = 92.9$$

$$\text{FOR } V = 7300 \text{ L} = 7.3 \times 10^6 \text{ cm}^3$$

$$A = 1.3 \text{ m}^2 = 1.3 \times 10^4 \text{ cm}^2$$

$$\rho_c = 0.28 \text{ g/100 cm}^3 \\ = 0.0028 \text{ g/cm}^3$$

$$\frac{V}{A} = \frac{7.3 \times 10^6}{1.3 \times 10^4} = 561.5 \text{ cm}$$

$$\text{SO } t = \frac{\mu \alpha}{2 \Delta P} \rho_c \left(\frac{V}{A} \right)^2$$

$$= (92.9)(0.0028)(561.5)^2$$

$$t = 82058 \text{ s}$$

$$\underline{\underline{t = 22.8 \text{ h}}}$$

t (s)	A (cm ²)	V (L)	V (cm ³)	V/A (cm)	tA/V (s/cm)
10	89	0.500	500	5.62	1.78
20	89	0.707	707	7.94	2.52
30	89	0.866	866	9.73	3.08

Plot

↑
x

↑
y

