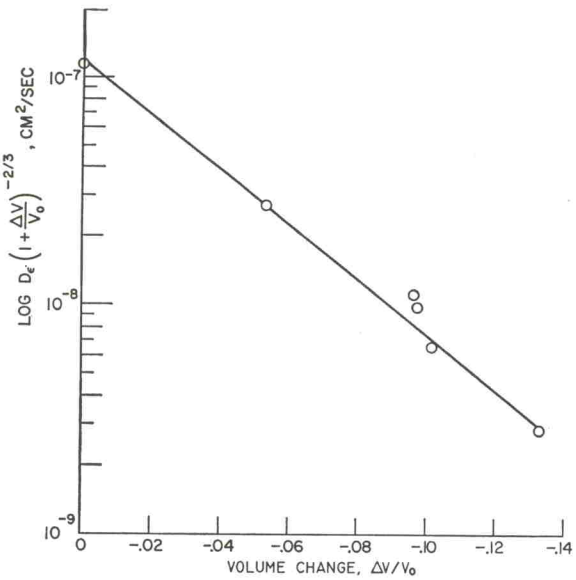
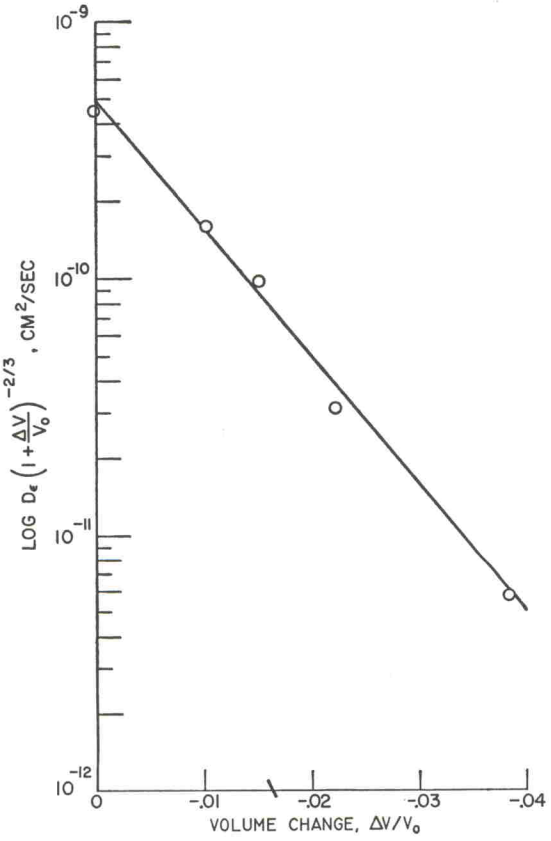
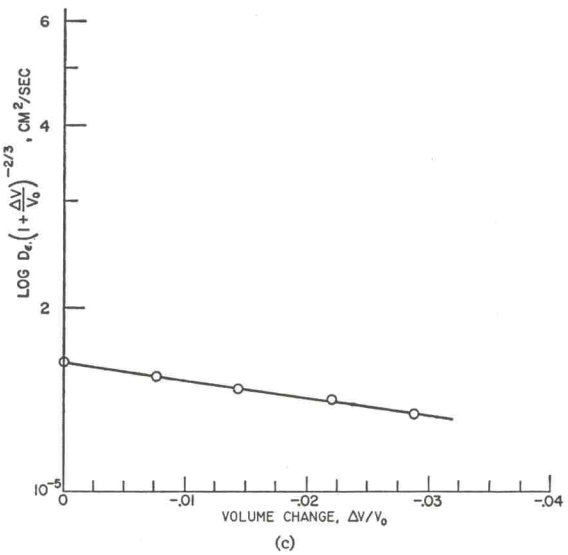


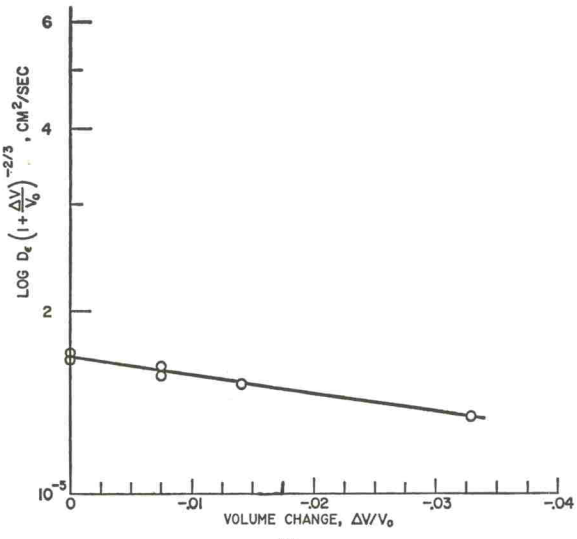
(a)



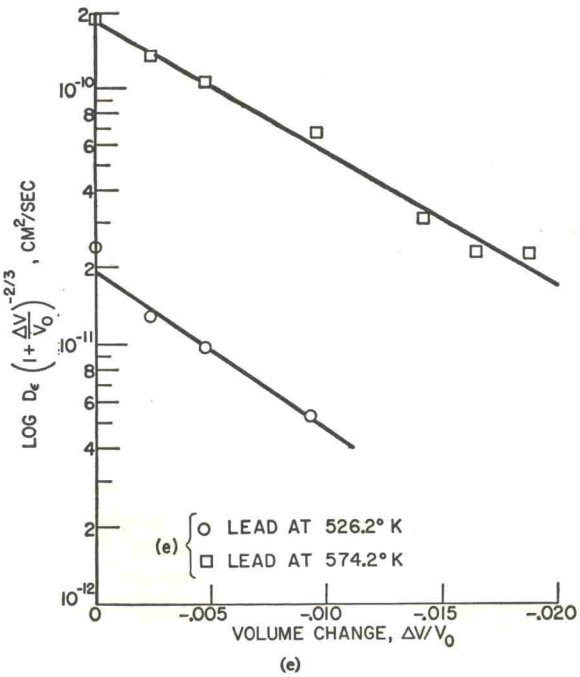
(b)



(c)

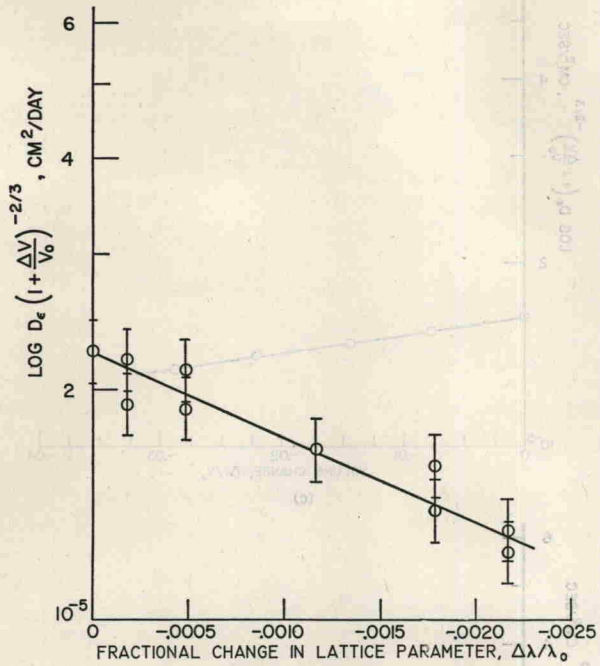


(d)

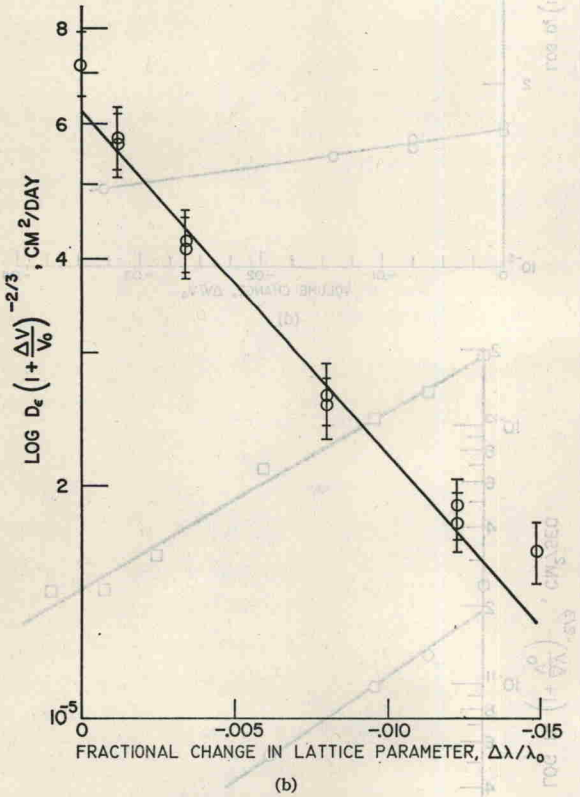


(e)

FIG. 1. Variation of $\log[D_\epsilon(1+\Delta V/V_0)^{-\frac{1}{3}}]$ plotted against volume change $(\Delta V/V_0)$ for self-diffusion of various elements. (a) Sodium at 363°K [see enclosed graph]. (b) White phosphorous at 314°K. (c) Liquid mercury at 303°K. (d) Liquid gallium at 303°K. (e) Lead at 526.2°K—o ; Lead at 574.2°K—□.

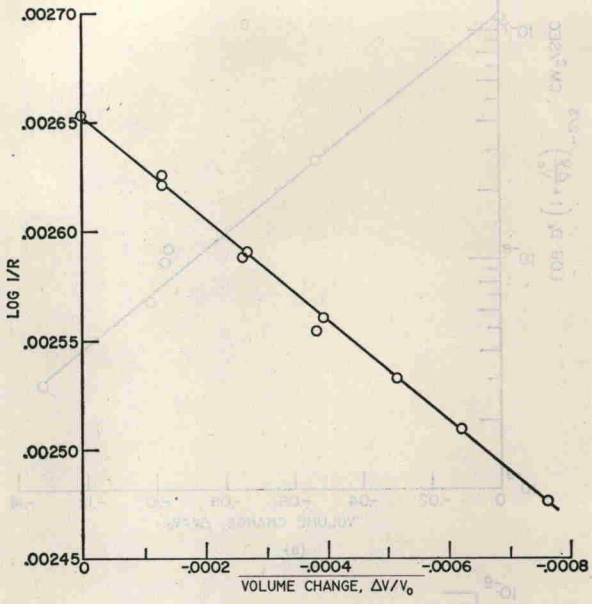


(a)

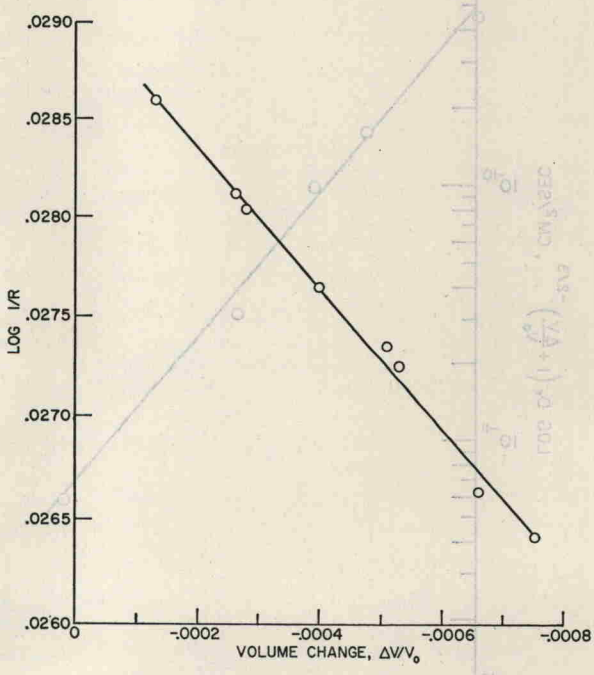


(b)

FIG. 2. Variation of $\log[D_\epsilon(1+\Delta V/V_0)^{-\frac{2}{3}}]$ plotted against fractional change in lattice parameter $\Delta\lambda/\lambda_0$ for self-diffusion in zinc. (a) Zinc at 580°K, perpendicular to c axis. (b) Zinc at 580°K, parallel to c axis.



(a)



(b)

FIG. 3. Variation of $\log(1/R)$ plotted against volume change $\Delta V/V_0$ for mobility of silver at 573°K. (a) Silver chloride. (b) Silver bromide.

Activation Volume

The activation volume is ordinarily calculated from the relation

$$\Delta V^\ddagger=\left[\frac{\partial(\Delta G)}{\partial P}\right]_T=-kT\left[\frac{\partial[\ln(D/\alpha\lambda^2\nu^*)]}{\partial P}\right]_T, \quad (60)$$