

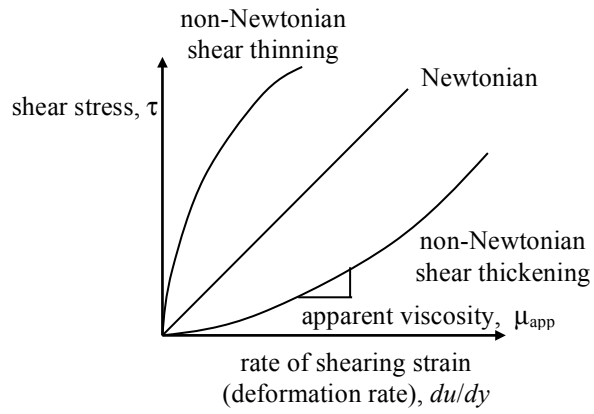
Viscosity and Viscous Stresses



<https://livestream.com/accounts/4931571/events/5369913/videos/134070866>

Viscosity and Viscous Stresses

(dynamic) Viscosity, μ



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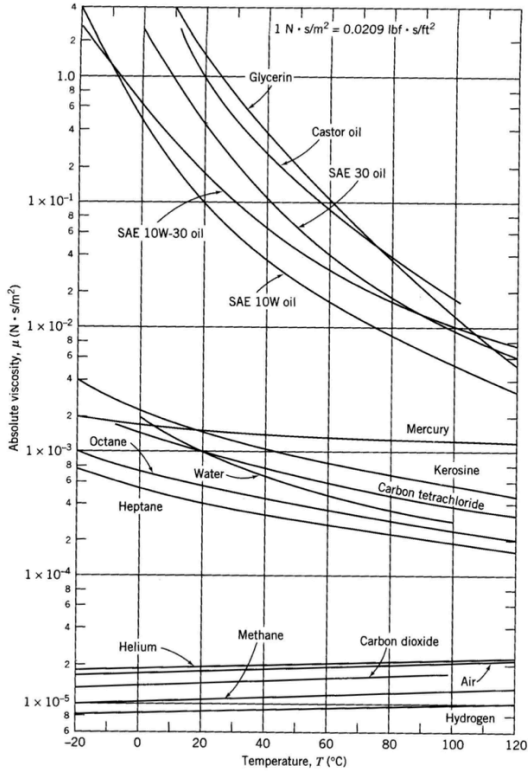


Fig. A.2 Dynamic (absolute) viscosity of common fluids as a function of temperature. (Data from [1, 6, and 10].)

$$\mu_{\text{H}_2\text{O}@20^\circ\text{C}} = 1.00 \cdot 10^{-3} \text{ N}\cdot\text{s}/\text{m}^2 = 1 \text{ cP}$$

$$\mu_{\text{air}@20^\circ\text{C}} = 1.81 \cdot 10^{-5} \text{ N}\cdot\text{s}/\text{m}^2 = 0.018 \text{ cP}$$

$$\nu_{\text{H}_2\text{O}@20^\circ\text{C}} = 1.00 \cdot 10^{-6} \text{ m}^2/\text{s} = 1 \text{ cSt}$$

$$\nu_{\text{air}@20^\circ\text{C}} = 1.50 \cdot 10^{-5} \text{ m}^2/\text{s} = 15 \text{ cSt}$$

(Plot from Fox, R.W. and McDonald, A.T., *Introduction to Fluid Mechanics*, 5th ed., Wiley.)

