

Typical Ranges of Prandtl Numbers for Selected Fluids

The Prandtl number is a dimensionless group defined as

$$\text{Pr} = \frac{\text{molecular diffusion of momentum}}{\text{molecular diffusion of heat}} = \frac{\nu}{\alpha} = \frac{\mu C_p}{k}$$

Fluid	Pr
Liquid metals	0.004 – 0.030
Gases	0.7 – 1.0
Water	1.7 – 13.7
Light organic fluids	5 – 50
Oils	50 – 100,000
Glycerin	2000 – 100,000

The Prandtl number depends on the temperature of the substance.