

12.1: Gases, Liquids, and Density

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Definition: (Fluids) A fluid is any substance that can flow and change shape depending on its container. Both liquids and gases are fluids, but liquids have cohesion, which allows them to keep their volume, whereas gases expand to fill any container.

Definition: (Density) The **density** of a substance is its mass per unit volume. We use ρ to define density.

Average density is given by

$$\rho = \frac{m}{V}$$

Density at a point is given by

$$\rho = \frac{dm}{dV}$$