

Relative Density

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Synonym: [Relative Density](#) = [Specific gravity](#)

[Dimensionless](#) ratio of the actual [fluid density](#) ρ to the [fluid density](#) of a reference substance ρ_{ref} , both taken at reference conditions (equal or close to [STP](#), which should be specified individually):

(1)
$$SG = \frac{\rho}{\rho_{\text{ref}}}$$

The selection of reference substance and the corresponding value of ρ_{ref} depends on the context.

For fluids which are liquid at [STP](#) this is usually a distilled water and for fluids which are gaseous at [STP](#) this is usually a dry air:

Liquid specific gravity γ_L	Gas specific gravity γ_g
$\rho_{\text{ref}} = \rho_{\text{H}_2\text{O}}$	$\rho_{\text{ref}} = \rho_{\text{air}}$
$\gamma_L = \frac{\rho_L}{\rho_{\text{H}_2\text{O}}}$	$\gamma_g = \frac{\rho_g}{\rho_{\text{air}}}$

See also

[Natural Science](#) / [Physics](#) / [Fluid density](#)

[[API gravity](#)][[Oil specific gravity \(o\)](#)][[Gas specific gravity \(g\)](#)][[Liquid specific gravity \(L\)](#)]