

## **DENSITY OF AQUEOUS SOLUTIONS**

Density of aqueous solutions at 15 °C,  $\rho_m = \rho_{dis} + Ay_s$  (with  $\rho_{dis} = 1000 \text{ kg/m}^3$ ), as a function of solute mass fraction,  $y_s$  (linear correlation).

Solute	Formula(state)	Density coefficient	Experimental data points
		$A [kg/m^3]$	$ ho_{ m m}$ [kg/m <sup>3</sup> ]
Caustic potash	KOH(s)	920	1092 at 10% wt, 1517 at 50% wt
Caustic soda	NaOH(s)	1100	1115 at 10% wt, 1525 at 50% wt
Ethanol	$C_2H_6O(l)$	-200	982 at 10% vol, 914 at 50% vol
Ethylene glycol	$C_2H_6O_2(l)$	10	1013 at 10% vol, 1066 at 50% vol
Fructose	$C_6H_{12}O_6(s)$	400	1039 at 10% wt, 1340 at 70% wt (sat)
Methanol	CH <sub>4</sub> O(l)	-200	982 at 10% vol, 919 at 50% vol
Oxygenated water	$H_2O_2(l)$	350	1035 at 10% wt, 1196 at 50% wt
Salt	NaCl(s)	770	1074 at 10% wt, 1204 at 26% wt (sat)
Sugar (sucrose)	$C_{12}H_{22}O_{11}(s)$	400	1040 at 10% wt, 1300 at 60% wt (sat)
Sulfuric acid	$H_2SO_4(1)$	705	1066 at 10% wt, 1395 at 50% wt

More detailed density data, and many other properties, can be found in <u>Solution properties</u> for some special solutions: salt-water, sugar-water, alcohol-water, hydrogen peroxide-water, ammonia-water and carbon dioxide-water.

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