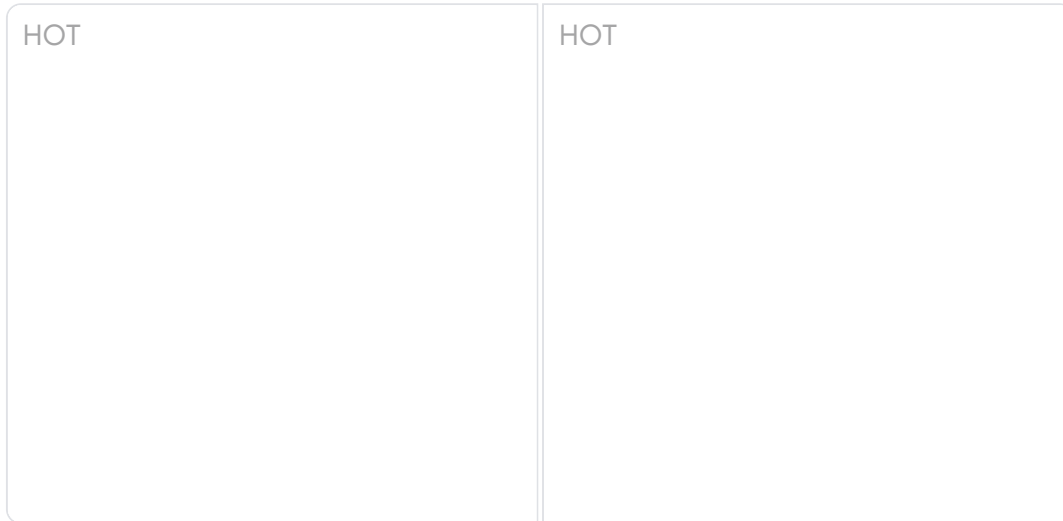




Densities of Aqueous Solutions of Inorganic Sodium Salts

Changes in density of aqueous solutions with changes in concentration at 20°C. Density of inorganic sodium salts in water is plotted as function of wt%, mol/kg water and mol/l solution.

Sponsored Links



Top Rated M
Life Extension

Be aware of the concentration units in the figures:

wt%: Mass of solute/total mass of solution*100%

mol/kg: Molality = moles of solute/kg of *water*

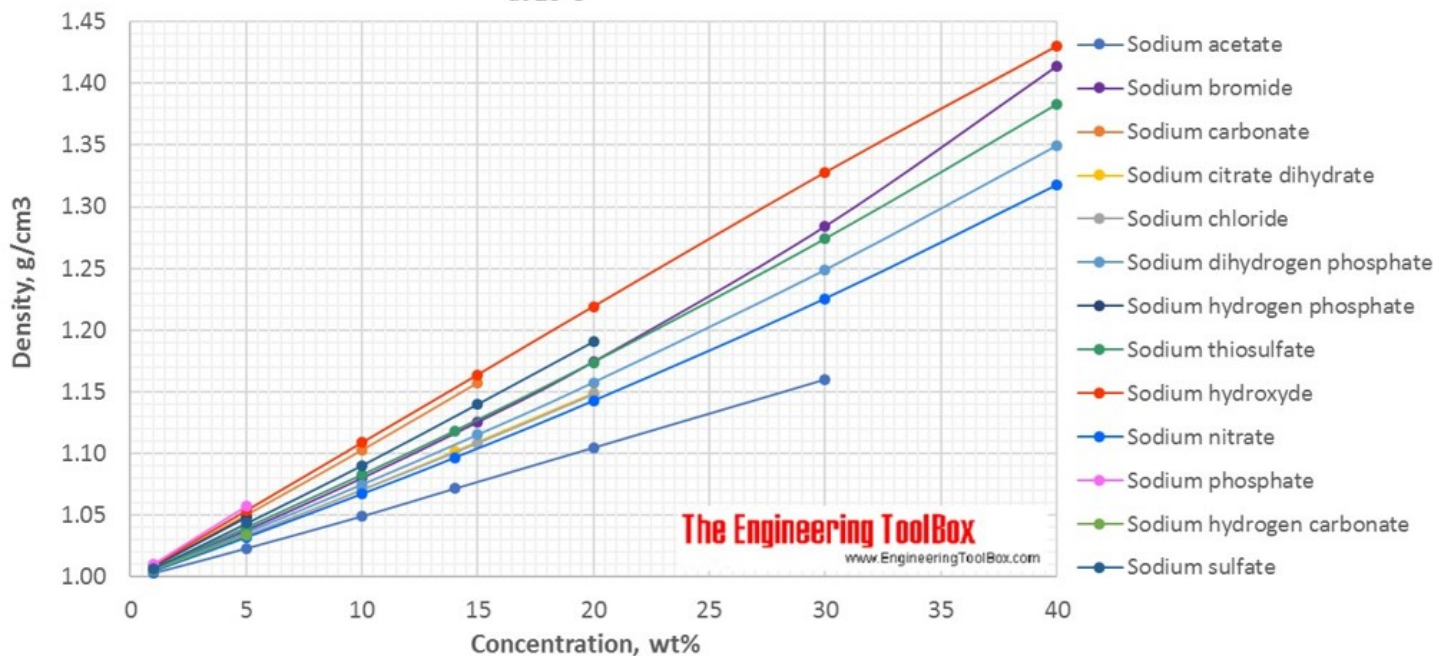
mol/liter: Molarity = moles of solute/liter of *solution*

Values are tabulated below the figures.

See also density of aqueous solutions of [inorganic chlorides](#) , [inorganic potassium salts](#) , [some other inorganic substances](#) , [organic acids](#) and [organic substances as sugars and alcohols](#).

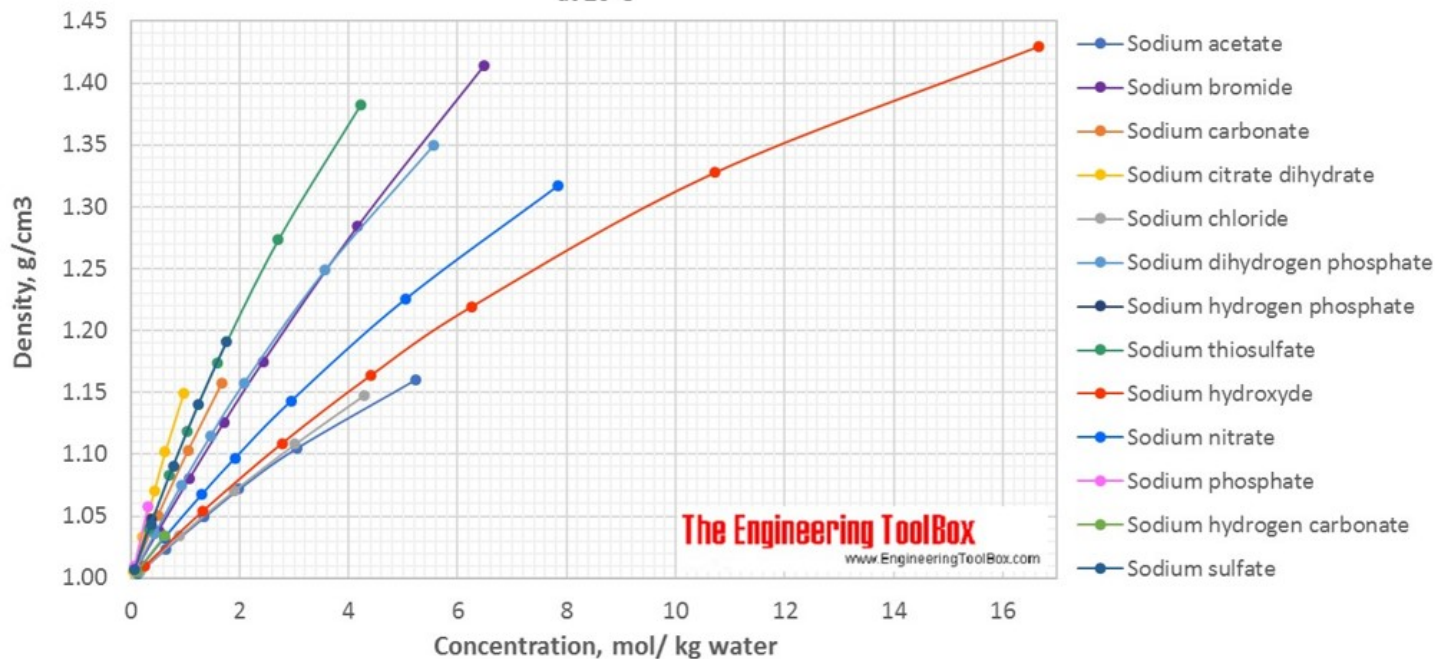
Density of aqueous solutions of sodium salts

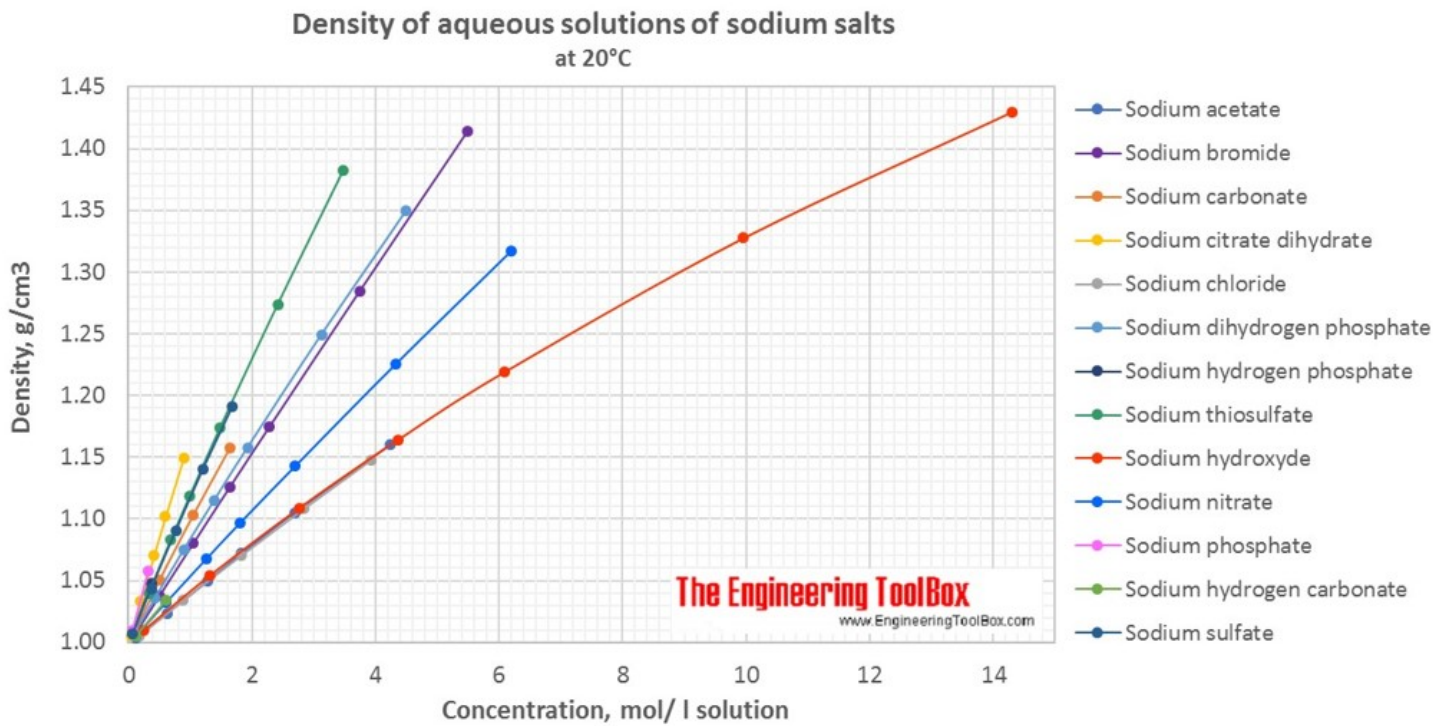
at 20°C



Density of aqueous solutions of sodium salts

at 20°C





Density of aqueous solutions at 20°C, given as g/cm³:

For full table - rotate the screen!

Mass%	Sodium acetate	Sodium bromide	Sodium carbonate	Sodium chloride	Sodium thiosulfate
1	1.0034	1.006	1.0086	1.0053	1.0065
5	1.0234	1.038	1.0502	1.034	1.0399
10	1.0495	1.0803	1.1029	1.0707	1.0827
20	1.1050	1.1745		1.1478	1.174
30	1.1602	1.2842			1.2739
40		1.4138			1.3827
Density at 20°C, given as g/cm ³					

Conversion of the concentration from mass% to mol/kg (moles of solute/kg of water = molality):

For full table - rotate the screen!

Mass%	Sodium acetate	Sodium bromide	Sodium carbonate	Sodium chloride	Sodium thiosulfate
1	0.123	0.098	0.095	0.173	0.064
5	0.642	0.512	0.497	0.901	0.333
10	1.354	1.08	1.048	1.901	0.703
20	3.047	2.43		4.278	1.581
30	5.224	4.165			2.711
40		6.479			4.216
Molality at 20°C, given as mol/kg water					

Conversion of the concentration from mass% to mol/liter (moles of solute/liter of solution = molarity):

For full table - rotate the screen!

Mass%	Sodium acetate	Sodium bromide	Sodium carbonate	Sodium chloride	Sodium thiosulfate
1	0.122	0.098	0.095	0.172	0.064
5	0.624	0.504	0.495	0.885	0.329
10	1.279	1.05	1.041	1.832	0.685
20	2.694	2.283		3.928	1.485
30	4.243	3.744			2.417
40		5.496			3.48
Molarity at 20°C, given as mol/l solution					

Sponsored Links

Related Topics

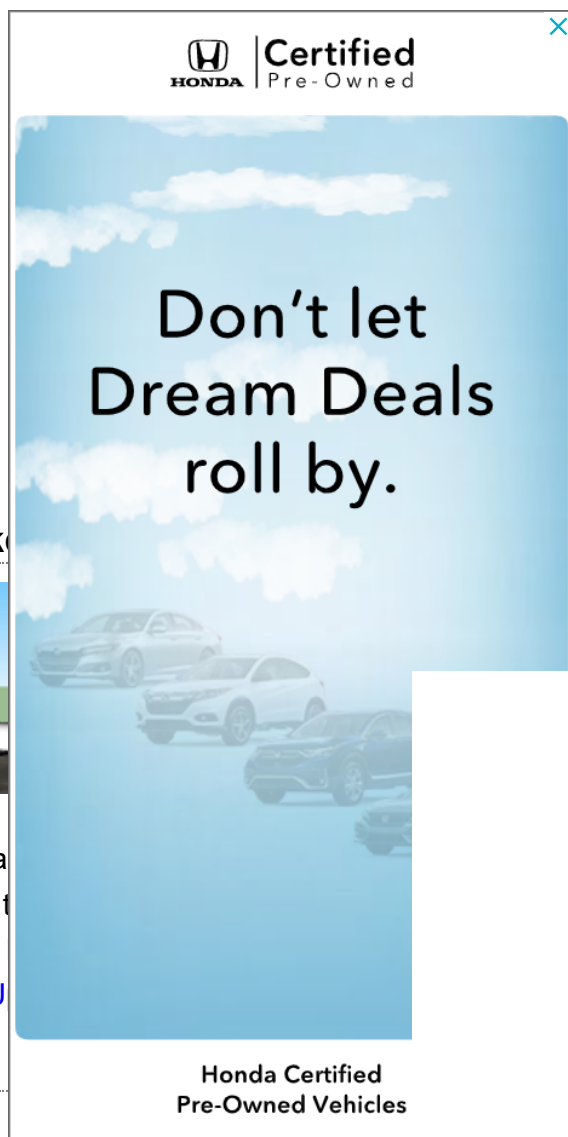
- **Material Properties** - Material properties of gases, fluids and solids - densities, specific heats, viscosities and more.
- **Densities** - Densities of solids, liquids and gases. Definitions and conversion calculators.

Related Documents

- **API Gravity** - API expresses the gravity or density of liquid petroleum products. Online API to Specific Gravity calculator.
- **Concentration Units Converter** - Calculator and formulas for conversion between different units of concentration: Molarity, molality, mole fraction, weight percent of solute and grams of solute per liter of solution - descriptive terms for solubility.
- **Crude Oil - Density vs. Temperature** - Variations in crude oil density are shown as function of temperature, together with volume correction factors.
- **Densities of Aqueous Solutions of Inorganic Chlorides** - Changes in density of aqueous solutions with changes in concentration at 20°C. Density of inorganic chlorides in water is plotted as function of wt%, mol/kg water and mol/l solution.
- **Densities of Aqueous Solutions of Inorganic Potassium Salts** - Changes in density of aqueous solutions with changes in concentration at 20°C. Density of potassium salts in water is plotted as function of wt%, mol/kg water and mol/l solution.
- **Densities of Aqueous Solutions of Organic Acids** - Changes in density of aqueous solutions with changes in concentration at 20°C. Density of acetic acid, citric acid, formic acid, D-lactic acid, oxalic acid and trichloroacetic acid in water is plotted as function of wt%, mol/kg water and mol/l solution.
- **Density Converter** - Online density converter with commonly used units.
- **Density of Aqueous Solutions of Organic Substances as Sugars and Alcohols** - Changes in density of aqueous solutions with changes in concentration at 20°C. Density of some sugars, alcohols

- and other organic substances in water is plotted as function of wt%, mol/kg water and mol/l solution.
- **Density of Aqueous Solutions of some Inorganic Substances** - Changes in density of aqueous solutions with changes in concentration at 20°C. Density of inorganic substances in water is plotted as function of wt%, mol/kg water and mol/l solution.
 - **Density vs. Specific Weight vs. Specific Gravity** - An introduction to density, specific weight and specific gravity.
 - **Elements of the Periodic System** - The elements of the periodic system with names, symbols, atomic numbers and weights, melting and boiling points, density, electronegativity and electron affinity, and electron configuration.
 - **Fuel Oils - Densities vs. Temperature** - Variations in fuel oils density as function of temperature, together with volume correction factors.
 - **Hydrocarbons, Linear Alcohols and Acids - Densities** - Density of hydrocarbons like alcohols and acids as function of carbon number at 20°C / 68°.
 - **Jet Fuel - Density vs. Temperature** - Variations in jet fuel density as function of temperature, together with volume correction factors.
 - **Liquid-Liquid Solution - Shrinkage and Estimation of Density** - It is possible to estimate the density of a liquid-liquid solution from the density of the solute and the solvent. However, due to shrinkage, the estimate will be a bit too low.
 - **Liquids - Densities** - Densities of common liquids like acetone, beer, oil, water and more.
 - **Liquids - Densities vs. Pressure and Temperature Change** - Densities and specific volume of liquids vs. pressure and temperature change.
 - **Liquids - Specific Gravities** - Specific gravities of liquids like alcohol, oils, benzene, water and many more.
 - **Lubricating Oil - Densities vs. Temperature** - Variations in lubricating oil density as function of temperature, together with volume correction factors.
 - **Organic Sulfur Compounds - Densities** - Liquid density of different kinds of organic sulfur compounds with varying carbon number (20°C/68°F). Comparison of thiols, sulfides, disulfides and thiophenes.
 - **Solids - Densities** - Densities of selected solids.
 - **Solutions, Molarity and Dilution** - Definitions and examples of how to calculate wt%, molarity and how to prepare dilutions.
 - **Water - Specific Volume vs. Temperature** - Online calculator, figures and tables showing Specific Volume of water at temperatures ranging from 0-370 °C and 32 - 700 °F - Imperial and SI Units.

Sponsored Links



HONDA | Certified Pre-Owned

Don't let Dream Deals roll by.

Honda Certified Pre-Owned Vehicles

Engineering ToolBox - Sk



Add standard and customized pa
- to your [Sketchup model](#) with t
amazing, fun and free [SketchUp](#)
your SketchUp from the [SketchU](#)

Translate this Page to

[Arabic](#) - [Chinese \(Simplified\)](#)
[Japanese](#) - [Korean](#) - [Portuguese](#) - [Russian](#) - [Spanish](#) - - or select [Your own language](#)

About the ToolBox

We appreciate any comments and tips on how to make The Engineering ToolBox a better information source. Please contact us by email

- editor.engineeringtoolbox@gmail.com

if You find any faults, inaccuracies, or otherwise unacceptable information.

The content in The Engineering ToolBox is [copyrighted](#) but can be used with [NO WARRANTY or LIABILITY](#) . Important information should always be double checked with alternative sources. All applicable national and local regulations and practices concerning this aspects must be strictly followed and adhered to.

Privacy

We don't collect information from our users. Only emails and answers are saved in our archive. Cookies are only used in the browser to improve user experience.

deling!



umbers, piping, stairs and more
[sion](#) - enabled for use with the
ineering ToolBox extension to

[ch](#) - [German](#) - [Italian](#) -

Some of our calculators and applications let you save application data to your local computer. These applications will - due to browser restrictions - send data between your browser and our server. We don't save this data.

Google use cookies for serving our ads and handling visitor statistics. Please read [Google Privacy & Terms](#) for more information about how you can control adserving and the information collected.

AddThis use cookies for handling links to social media. Please read [AddThis Privacy](#) for more information.

Advertise in the ToolBox

If you want to promote your products or services in the Engineering ToolBox - please use [Google Adwords](#). You can target the Engineering ToolBox by using [AdWords Managed Placements](#).

Citation

This page can be cited as

- Engineering ToolBox, (2017). *Densities of Aqueous Solutions of Inorganic Sodium Salts*. [online] Available at: https://www.engineeringtoolbox.com/density-aqueous-solution-inorganic-sodium-salt-concentration-d_1957.html [Accessed Day Mo. Year].

Modify access date.



Home

- [Acoustics](#)
- [Air Psychrometrics](#)
- [Basics](#)
- [Combustion](#)
- [Drawing Tools](#)
- [Dynamics](#)
- [Economics](#)
- [Electrical](#)
- [Environment](#)
- [Fluid Mechanics](#)
- [Gases and Compressed Air](#)
- [HVAC Systems](#)
- [Hydraulics and Pneumatics](#)
- [Insulation](#)
- [Material Properties](#)
 - [Boiling Points](#)

- Densities
- Melting and Freezing Points
- Viscosities

- Mathematics
- Mechanics
- Miscellaneous
- Physiology
- Piping Systems
- Process Control
- Pumps
- Sanitary Drainage Systems
- Standard Organizations
- Statics
- Steam and Condensate
- Thermodynamics
- Water Systems

Unit Converter

Temperature

 °C °F

Length

 m *km* *in* *ft* *yards* *miles* *naut miles*

Area

- m^2
 km^2
 in^2
 ft^2
 $miles^2$
 $acres$

Convert!

Volume

1.0

- m^3
 $liters$
 in^3
 ft^3
 $us\ gal$

Convert!

Weight

1.0

- kg_f
 N
 lb_f

Convert!

Velocity

1.0

- m/s
 km/h
 ft/min
 ft/s
 mph
 $knots$

Convert!

Pressure

1.0

- $Pa\ (N/m^2)$
 bar

mm H₂O

kg/cm²

psi

inches

H₂O

Convert!

Flow

1.0

m³/s

m³/h

US gpm

cfm

Convert!

Scientific Online Calculator



3.10

Sponsored Links



[Make Shortcut to Home Screen?](#)