

Density

Density is the mass per unit volume of a substance.

$$D = \frac{m}{V} = \frac{\text{mass}}{\text{volume}}$$

Units

either kilograms
metre³ or grams
centimetre³

kg
m³ or g
cm³

NOTE: 1 cm³ = 1 mL

Mar 13-9:11 AM

Solids (at 20°C) kg/m ³	Liquids (at 20°C) kg/m ³	Gases (at 0°C & standard pressure) kg/m ³
Osmium 22 500	Mercury 13 600	Carbon dioxide 1.98
Platinum 21 400	Carbon tetrachloride 1 600	Oxygen 1.43
Gold 19 300	Chloroform 1 490	Air 1.29
Uranium 18 700	Sea water 1 030	Nitrogen 1.25
Lead 11 300	Water 1 000	Helium 0.178
Nickel 8 900	Olive oil 920	Hydrogen 0.089
Copper 8 900	Turpentine 870	
Iron 7 900	Methyl alcohol 790	
Zinc 7 100	Ether 740	
Tin 5 600	Gasoline 690	
Aluminum 2 700		
Magnesium 1 700		
Ice (0°C) 920		

Mar 14-10:26 AM

TABLE 28 Some Characteristic Properties

Substance	Density (kg/m ³)	Melting point (°C)	Boiling point (°C)
Chromium	7 100	1 615	2 200
Zinc	7 100	420	907
Tin (white)	7 300	232	2 260
Manganese	7 300	1 260	1 900
Nickel	8 900	1 455	2 900
Cobalt	8 900	1 495	3 000
Copper	8 900	1 083	2 300
Methyl alcohol	790	− 98.0	64.7
Ethyl alcohol	790	− 117.3	78.5

Sep 14-8:09 PM

Floating and Sinking-Bouyancy

- solids can float in liquids
 - liquids can float in liquids
 - gases can float in gases
- depends in the density!



Density of Object > Density of fluid
SINKS

Density of Object < Density of fluid
FLOATS



Feb 6-9:34 AM