|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **COMMON PHYSICAL QUANTITIES** | | | | | | | | | | | | | | | | | | | | | | |
| **Quantity** | | | **Symbol** | | | **Value** | | | | | **Quantity** | | | | **Symbol** | | | **Value** | | | | |
| Gravitational acceleration on Earth | | |  | | | 9.8 ms-2 | | | | | Mass of electron | | | |  | | | kg | | | | |
| Radius of Earth | | |  | | |  | | | | | Charge on electron | | | |  | | |  | | | | |
| Mass of Earth | | |  | | |  | | | | | Mass of neutron | | | |  | | |  | | | | |
| Mass of Jupiter | | |  | | |  | | | | | Mass of proton | | | |  | | |  | | | | |
| Radius of Jupiter | | |  | | |  | | | | | Mass of alpha particle | | | |  | | |  | | | | |
| Mean radius of Jupiter orbit | | |  | | |  | | | | | Charge on alpha particle | | | |  | | |  | | | | |
| Mass of Moon | | |  | | |  | | | | | Planck’s constant | | | |  | | |  | | | | |
| Radius of Moon | | |  | | |  | | | | |
| Mean radius of Moon orbit | | |  | | |  | | | | | Permittivity of free space | | | |  | | |  | | | | |
| Solar radius | | |  | | |  | | | | |
| Mass of Sun | | |  | | |  | | | | | Permeability of free space | | | |  | | |  | | | | |
| 1 AU | | |  | | |  | | | | |
| Stefan-Boltzmann constant | | |  | | |  | | | | | Speed of light in vacuum | | | |  | | |  | | | | |
| Universal constant of gravitation | | |  | | |  | | | | | Speed of sound in air | | | |  | | | 3.4 102 ms-1 | | | | |
| **REFRACTIVE INDICES**  The refractive indices refer to sodium light of wavelength 589 nm and to substances at a temperature of 273 K. | | | | | | | | | | | | | | | | | | | | | |
| **Substance** | | | | **Refractive index** | | | | | **Substance** | | | | | | | **Refractive index** | | | | | |
| Diamond | | | | 2.42 | | | | | Glycerol | | | | | | | 1.47 | | | | | |
| Glass | | | | 1.51 | | | | | Water | | | | | | | 1.33 | | | | | |
| Ice | | | | 1.31 | | | | | Air | | | | | | | 1.00 | | | | | |
| Perspex | | | | 1.49 | | | | | Magnesium fluoride | | | | | | | 1.38 | | | | | |
| **SPECTRAL LINES** | | | | | | | | | | | | | | | | | | | | | | |
| **Element** | | **Wavelength/nm** | | | | | **Colour** | | | **Element** | | | | **Wavelength/nm** | | | | | | **Colour** | | |
| Hydrogen | | 656 | | | | | Red | | | Cadmium | | | | 644 | | | | | | Red | | |
|  | | 486 | | | | | Blue-green | | |  | | | | 509 | | | | | | Green | | |
|  | | 434 | | | | | Blue-violet | | |  | | | | 480 | | | | | | Blue | | |
|  | | 410 | | | | | Violet | | | **Lasers** | | | | | | | | | | | | |
|  | | 397 | | | | | Ultraviolet | | | *Element* | | | | *Wavelength/nm* | | | | | | *Colour* | | |
|  | | 389 | | | | | Ultraviolet | | | Carbon dioxide | | | | 9550 | | | | | | Infrared | | |
|  | |  | | | | |  | | |  | | | | 10590 | | | | | | Infrared | | |
| Sodium | | 589 | | | | | Yellow | | | Helium-neon | | | | 633 | | | | | | Red | | |
| **PROPERTIES OF SELECTED MATERIALS** | | | | | | | | | | | |  |  | | | |  | | | |
| **Substance** | **Density/kgm-3** | | | | **Melting Point/K** | | | **Boiling Point/K** | | | | **Specific Heat Capacity**  **(J kg-1 °C-1)** | | **Specific latent heat of fusion**  **(J kg-1‑)** | | | | | **Specific latent heat of vaporisation**  **(J kg-1)** | |
| Aluminium |  | | | | 933 | | | 2623 | | | |  | |  | | | | | … | |
| Copper |  | | | | 1357 | | | 2853 | | | |  | |  | | | | | … | |
| Glass |  | | | | 1400 | | | … | | | |  | | … | | | | | … | |
| Ice |  | | | | 273 | | | … | | | |  | |  | | | | | … | |
| Glycerol |  | | | | 291 | | | 563 | | | |  | |  | | | | |  | |
| Methanol |  | | | | 175 | | | 338 | | | |  | |  | | | | |  | |
| Sea Water |  | | | | 264 | | | 377 | | | |  | | … | | | | | … | |
| Water |  | | | | 273 | | | 373 | | | |  | |  | | | | |  | |
| Air |  | | | | … | | | … | | | | … | | … | | | | | … | |
| Hydrogen |  | | | | 14 | | | 20 | | | |  | | … | | | | |  | |
| Nitrogen | 1.25 | | | | 63 | | | 77 | | | |  | | … | | | | |  | |
| Oxygen | 1.43 | | | | 55 | | | 90 | | | |  | | … | | | | |  | |

The gas densities refer to a temperature of 273 K and a pressure of Pa.