**DATA SHEET**

COMMON PHYSICAL QUANTITIES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Quantity* | *Symbol* | *Value* | *Quantity* | *Symbol* | *Value* |
| Gravitational acceleration on EarthRadius of EarthMass of EarthMass of JupiterRadius of JupiterMean Radius of Jupiter OrbitSolar RadiusMass of Sun1 AUStefan-Boltzmann constantUniversal constant of gravitation | *g**rE**ME**MJ**RJ**σ**G* | 9·8 m s−26·4 x 106 m6·0 x 1024 kg1·9 x 1027 kg7·15 x 107 m7·79 x 1011 m6·955 x 108 m2·0 x 1030 kg1·5 x 1011 m5·67 x 10−8 W m−2 K−46·67 x 10−11 m3 kg−1 s−2 | Mass of electronCharge on an electronMass of neutronMass of protonMass of alpha particleCharge on alpha particlePlanck’s constantPermittivity of free spacePermeability of free spaceSpeed of light in a vacuumSpeed of sound in air | *me**e**mn**mp**mα**h**ε0**μ0**c**v* | 9·11 x 10−31 kg−1·60 x 10−19 C1·675 x 10−27 kg1·673 x 10−27 kg6·645 x 10−27 kg3·20 x 10−19 C6·63 x 10−34 J s8·85 x 10−12 F m−14π x 10−7 H m−13·0 x 108 m s−13·2 x 102 m s−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 GlassIce Perspex | 2·421·511·311·49 | GlycerolWaterAirMagnesium Fluoride | 1·471·331·001·38 |

SPECTRAL LINES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *element* | *Wavelength /nm* | *colour* | *element* | *Wavelength /nm* | *colour* |
| hydrogensodium | 656486434410397389589 | Red Blue-green Blue-violet Violet Ultraviolet UltravioletYellow | Cadmium | 644509480 | Red Green Blue |
| *Lasers* |
| *element* | *Wavelength /nm*} | *colour* |
| Carbon dioxideHelium-neon |  9550 10590 633 | InfraredRed |

PROPERTIES OF SELECTED MATERIALS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Substance* | *Density/**kg m−3* | *Melting Point/**K* | *Boiling Point/**K* | *Specific Heat Capacity/**J kg−1 K−1* | *Specific Latent Heat of Fusion/**J kg−1* | *Specific Latent Heat of**Vaporisation/ J kg−1* |
| Aluminium Copper Glass Ice Glycerol Methanol Sea Water Water Air Hydrogen Nitrogen Oxygen | 2·70 × 1038·96 × 1032·60 × 1039·20 × 1021·26 × 1037·91 × 1021·02 × 1031·00 × 1031·299·0 × 10−21·251·43 | 93313571400273291175264273. . . .146355 | 2623 2853. . . .. . . .563338377373. . . .207790 | 9·02 × 102 3·86 × 102 6·70 × 102 2·10 × 103 2·43 × 103 2·52 × 103 3·93 × 103 4·18 × 103 . . . . 1·43 × 104 1·04 × 103 9·18 × 102 | 3·95 × 1052·05 × 105. . . .3·34 × 1051·81 × 1059·9 × 104. . . .3·34 × 105. . . .. . . .. . . .. . . . | . . . .. . . .. . . .. . . .8·30 × 105 1·12 × 106. . . .2·26 × 106. . . .4·50 × 1052·00 × 105 2·40 × 104 |

The gas densities refer to a temperature of 273 K and a pressure of 1·01 × 105 Pa.

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