# Conversion Tables

## Pressure, liquid head, stress

- Enter at left hand column and read horizontally

| → | kPa | lbf/n² | kgf/cm2 | $ftH_2O$ | $mH_2O$ | in HG | mmHg |
|---|---|---|---|---|---|---|---|
| kPa | 1 | 0.145 | 0.0102 | 0.335 | 0.102 | 0.295 | 7.501 |
| lbf/in² | 6.895 | 1 | 0.0703 | 2.307 | 0.703 | 2.036 | 51.71 |
| kgf/cm² | 98.067 | 14.22 | 1 | 32.808 | 10.0 | 28.96 | 735.6 |
| $ftH_2O$ | 2.984 | 0.433 | 0.0305 | 1 | 0.305 | 0.881 | 22.38 |
| $mH_2O$ | 9.789 | 1.42 | 0.1 | 3.28 | 1 | 2.896 | 73.55 |
| inHg | 3.386 | 0.491 | 0.035 | 1.135 | 0.346 | 1 | 25.4 |
| mmHg | 0.133 | 0.019 | 0.0014 | 0.045 | 0.014 | 0.039 | 1 |

100kPa = 1 bar

### Length

| | | | | | |
|---|---|---|---|---|---|
| 1 in | = | 25.4 mm | 1 mm | = | 0.039 37 in |
| 1 ft | = | 0.3048 m | 1 m | = | 3.280 84 ft |

### Area

| | | | | | |
|---|---|---|---|---|---|
| 1 in² | = | 645.16 mm² | 1 mm² | = | 0.00155 in² |
| 1 ft² | = | 0.0929 m² | 1 m² | = | 10.7639 ft² |

### Volume

| | | | | | |
|---|---|---|---|---|---|
| 1 US gal | = | 3.785 L | 1 L | = | 0.2642 US gal |
| 1 imp gal | = | 4.5461 L | | = | 0.2200 imp gal |
| 1 in³ | = | 16387 mm³ | 1 mm³ | = | 61 x $10^{-6}$ in³ |
| 1 ft³ | = | 0.0283 m³ | 1 m³ | = | 35.3147 ft³ |

### Velocity, Speed

| | | | | | |
|---|---|---|---|---|---|
| 1 ft/s | = | 0.3048 m/s | 1 m/s | = | 3.280 84 ft/s |
| 1 mile/h | = | 1.609 344 km/h | | = | 2.236 94 mile/h |
| | = | 0.447 04 m/s | 1 km/h | = | 0.621 371 mile/h |

### Acceleration

| | | | | | |
|---|---|---|---|---|---|
| 1 ft/s² | = | 0.3048 m/s² | 1 m/s | = | 3.280 84 ft/s² |

### Flow

| | | | | | |
|---|---|---|---|---|---|
| 1 USgal/min | = | 0.063 L/s | 1 L/s | = | 15.85 US gal/mm |
| | = | 63.0915 x $10^{6}$ m³/s | 1m³/s | = | 15850 US gal/min |
| | = | 0.2271 m³/h | 1 m³/h | = | 4.403 US gal/min |
| 1 impgal/min | = | 0.076 L/s | 1 L/s | = | 13.2 imp gal/min |
| | = | 0.2728 m³/h | 1 m³/h | = | 3.666 imp gal/min |
| 1 ft³/min | = | 0.472 L/s | 1 L/s | = | 2.1189 ft³/min |
| | = | 1.699 m³/h | 1 m³/h | = | 0.5886 ft³/min |

### Mass

| | | | | | |
|---|---|---|---|---|---|
| 1 lb | = | 0.454 kg | 1 kg | = | 2.205 lb |
| 1 ton | = | 1.0160 t | 1 t | = | 0.9842 ton |

### Mass per unit length

| | | | | | |
|---|---|---|---|---|---|
| 1 lb/ft | = | 1.488 kg/m | 1 kg/m | = | 0.672 lb/ft |

### Mass per unit area

| | | | | | |
|---|---|---|---|---|---|
| 1 lb/ft² | = | 4.882 43 kg/m² | 1 kg/m² | = | 0.204 816 lb/ft² |
| 1 oz/yd² | = | 33.9057 g/m² | 1 g/m² | = | 0.029 494 oz/yd² |
| 1 oz/ft² | = | 305.152 g/m² | | = | 0.003 277 06 oz/ft² |

### Density (mass/unit volume)

| | | | | | |
|---|---|---|---|---|---|
| 1 lb/ft³ | = | 1.60185 kg/m³ | 1 kg/m³ | = | 0.062 428 lb/ft³ |
| 1 lb/yd³ | = | 0.593 278 kg/m³ | | = | 1.685 56 lb/yd³ |
| 1 ton/yd³ | = | 1.328 94 t/m³ | 1 t/m³ | = | 0.752 48 ton/yd³ |

### Mass per unit time

| | | | | | |
|---|---|---|---|---|---|
| 1 lb/s | = | 0.453 592 kg/s | 1 kg/s | = | 2.204 62 lb/s |
| 1 ton/h | = | 1.016 05 t/h | 1 t/h | = | 0.984 207 ton/h |

### Force

| | | | | | |
|---|---|---|---|---|---|
| 1 lb force | = | 4.448 N | 1 N | = | 0.225 lb force |
| | = | 0.0044 kN | 1 kN | = | 224.81 lb force |
| 1 kg force | = | 9.807 N | 1 N | = | 0.102 kg force |
| | = | 0.0098 kN | 1 kN | = | 101.97 kg force |

### Torque

| | | | | | |
|---|---|---|---|---|---|
| 1 lb.ft | = | 1.3558 N.m | 1 N.m | = | 0.7376 lbf.ft |
| 1 kgf.m | = | 9.8067 N.m | | = | 0.10197 kgf.m |

### Temperature

| | | | | | |
|---|---|---|---|---|---|
| °F | = | $^{9}/_{5}$°C + 32 | °C | = | $^{5}/_{9}$ (F - 32) |
| | | | | = | K - 273.15 |

### Thermal expansion

| | | | | | |
|---|---|---|---|---|---|
| 1 in/ft | = | 83.33 mm/m | 1 mm/m | = | 0.012 in/ft |

### Work, Energy, Heat (1J = 1W.s)

| | | | | | |
|---|---|---|---|---|---|
| 1 kWh | = | 3.6 MJ | 1 MJ | = | 0.277 778 kWh |
| 1 Btu | = | 1.055 06 kJ | 1 kJ | = | 0.947 817 Btu |
| | = | 1055.06 J | | | |
| 1 ft.lbf | = | 1.355 82J | 1 J | = | 0.737 562 ft.lbf |

### Power, Heat flow rate

| | | | | | |
|---|---|---|---|---|---|
| 1 hp | = | 0.745 700 kW | | | |
| | = | 745.700 W | 1 kW | = | 1.341 02 hp |
| 1 Btu/h | = | 0.293 071 W | 1 W | = | 3.412 14 Btu/h |
| 1 ft.lbf/s | = | 1.355 82 W | | = | 0.737 562 ft.lbf/s |

### Intensity of heat flow

| | | | | | |
|---|---|---|---|---|---|
| 1 Btu/(ft².h) | = | 3.154 59 W/m² | 1 W/m² | = | 0.316 998 Btu/(ft².h) |

### Thermal Conductance (c value)

| | | | | | |
|---|---|---|---|---|---|
| 1 Btu/(ft².h.°F) | = | 5.678 26 W/(m².K) | 1 W/(m.K) | = | 0.176 110 Btu/(ft².h.°F) |

### Thermal Conductivity (k value)

| | | | | | |
|---|---|---|---|---|---|
| 1 Btu/(ft.h.°F) | = | 1.730 73 W/(m.K) | 1 W/(m.K) | = | 0.577 789 Btu/(ft.h.°F) |

### Calorific value

| | | | | | |
|---|---|---|---|---|---|
| 1 Btu/lb | = | 2.326 kJ/kg | 1 kJ/kg | = | 0.429 923 Btu/lb |
| 1 Btu/ft³ | = | 37.2589 kJ/m³ | | = | 0.026 839 2 Btu/ft³ |

### Thermal capacity

| | | | | | |
|---|---|---|---|---|---|
| 1 Btu(lb.°F) | = | 4.1868 kJ/(kg.K) | 1 kJ/(kg.K) | = | 0.238 846 Btu/(lb.°F) |
| 1 Btu/(ft³.°F) | = | 67.10661 kJ/(m³.K) | | = | 0.014 9107 Btu/(ft³.°F) |