# COMMON NON-SI UNIT CONVERSIONS (C5)

| *Unit* | Unit Symbol | Quantity | Equation Expressed in Terms of SI Units | Equation Expressed in Terms of Other Units |
|---|---|---|---|---|
| ***Degree Fahrenheit*** | °F | Fahrenheit Temperature | $x\ °\mathrm{F} \cong \left(x \times \frac{9}{5} - 459.67\right) \mathrm{K}$ | $x\ °\mathrm{F} \cong \left(x \times \frac{9}{5} + 32\right) °\mathrm{C}$ |
| ***Foot*** | ft | Length | $x\ \mathrm{ft} \cong 0.304\ 8x\ \mathrm{m}$<br>[U.S. Survey] $x\ \mathrm{ft} \cong 0.304\ 800\ 6x\ \mathrm{m}$ | - |
| ***Inch*** | in | Length | $x\ \mathrm{in} \cong 25.4x\ \mathrm{mm}$ | - |
| ***Yard*** | yd | Length | $x\ \mathrm{yd} \cong 0.914\ 4x\ \mathrm{m}$ | - |
| ***Mile*** | mi | Length | $x\ \mathrm{mi} \cong 1.609\ 344x\ \mathrm{km}$ | $x\ \mathrm{mi} \cong 5280x\ \mathrm{ft}$ |
| ***Acre*** | ac<br>acre | Area | $x\ \mathrm{ac} \cong 4\ 046.873x\ \mathrm{m}^2$ | - |
| ***Square Inch*** | $\mathrm{in}^2$ | Area | $x\ \mathrm{in}^2 \cong 645.16x\ \mathrm{mm}^2$ | - |
| ***Square Foot*** | $\mathrm{ft}^2$ | Area | $x\ \mathrm{ft}^2 \cong 0.092\ 903\ 04x\ \mathrm{m}^2$ | - |
| ***Square Yard*** | $\mathrm{yd}^2$ | Area | $x\ \mathrm{yd}^2 \cong 0.836\ 127\ 36x\ \mathrm{m}^2$ | - |
| ***Square Mile*** | $\mathrm{mi}^2$ | Area | $x\ \mathrm{mi}^2 \cong 2.589\ 988x\ \mathrm{km}^2$ | - |
| ***Gallon*** | gal | Volume | $x\ \mathrm{gal} \cong 3.785\ 412x\ \mathrm{L}$ | - |
| ***Quart*** | qt | Volume | $x\ \mathrm{qt} \cong 0.946\ 352\ 9x\ \mathrm{L}$ | - |
| ***Pint*** | pt | Volume | $x\ \mathrm{pt} \cong 0.473\ 176\ 5x\ \mathrm{L}$ | - |
| ***Fluid Ounce*** | fl oz | Volume | $x\ \mathrm{fl\ oz} \cong 29.573\ 53\ \mathrm{mL}$ | - |
| ***Mile per Hour*** | mph | Velocity | $x\ \mathrm{mph} \cong 1.609\ 344x\ \mathrm{km/h}$ | - |

| *Unit* | Unit Symbol | Quantity | Equation Expressed in Terms of SI Units | Equation Expressed in Terms of Other Units |
|---|---|---|---|---|
| ***Ton (Short)*** | t | Mass | $x$ t ≅ 907.184 74$x$ kg | - |
| ***Pound (Avoirdupois)*** | lb | Mass | $x$ lb ≅ 0.453 592 37$x$ kg | - |
| ***Ounce (Avoirdupois)*** | oz | Mass | $x$ oz ≅ 28.349 52$x$ g | - |
| ***Bar*** | bar | Pressure | $x$ bar ≅ 100$x$ kPa | - |
| ***Pound-Force per Square Inch*** | psi | Pressure | $x$ psi ≅ 6.894 757$x$ kPa | - |
| ***Kilowatt-Hour*** | kWh | Energy | $x$ kWh ≅ 3.6$x$ MJ | - |
| ***Calorie (Nutrition)*** | cal | Energy | $x$ cal ≅ 4.184$x$ kJ | - |
| ***Horsepower*** | hp | Power | $x$ hp ≅ 746$x$ W | - |
| ***Angstrom*** | Å | Wavelength | $x$ Å ≅ 0.1$x$ nm | - |
| ***Curie*** | Ci | Radioactivity | $x$ Ci ≅ 37 000$x$ MBq | - |
| ***Rad*** | rad | Absorbed Dose | $x$ rad ≅ 0.01$x$ Gy | - |
| ***Roentgen Equivalent Man*** | rem | Dose Equivalent | $x$ rem ≅ 0.01$x$ Sv | - |
| ***Roentgen*** | R | Exposure | $x$ R ≅ 0.000 258$x$ C/kg | - |

**Notes:**

- The rad and radian share a common unit symbol, rad, for this reason the use of the rad is strongly discouraged and the gray (Gy) should instead be used as the unit for absorbed dose.
- Most units listed above are discouraged from use outside of the United States of America (U.S.) and conversion factors are only provided to convert to and from the U.S. customary system when communicating with the general public, all other uses – including U.S. scientific – are discouraged.

**Sources:**

- Unit [1] [2]

- Unit Symbol [1] [2]
- Quantity [1] [2]
- Equation Expressed in Terms of SI Units [1] [2]
- Equation Expressed in Terms of Other Units [1] [2]