



| Temperature | To Obtain | | | |
|----------------|--|--|---|---|
| | Celsius, °C | Fahrenheit, °F | Kelvin, °K | Rankine, °R |
| | Multiply By | | | |
| Celsius, °C | – | $^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$ | $^{\circ}\text{K} = ^{\circ}\text{C} + 273.16$ | $^{\circ}\text{R} = (^{\circ}\text{C} + 273.16) \times 1.8$ |
| Fahrenheit, °F | $^{\circ}\text{C} = (^{\circ}\text{F} - 32)/1.8$ | – | $^{\circ}\text{K} = ((^{\circ}\text{F} - 32)/1.8) + 273.16$ | $^{\circ}\text{R} = ^{\circ}\text{F} + 459.69$ |
| Kelvin, °K | $^{\circ}\text{C} = ^{\circ}\text{K} - 273.16$ | $^{\circ}\text{F} = ((^{\circ}\text{K} - 273.16) \times 1.8) + 32$ | – | $^{\circ}\text{R} = ^{\circ}\text{K} \times 1.8$ |
| Rankine, °R | $^{\circ}\text{C} = (^{\circ}\text{R}/1.8) - 273.16$ | $^{\circ}\text{F} = ^{\circ}\text{R} - 459.69$ | $^{\circ}\text{K} = ^{\circ}\text{R}/1.8$ | – |

| Volume | To Obtain | | | | | | |
|-------------------|-------------------|-----------------|-----------------|----------------|-------------------|-----------|----------------|
| | cm ³ * | ft ³ | in ³ | m ³ | gal (U.S. Liquid) | L | gal (Imperial) |
| | Multiply By | | | | | | |
| cm ³ * | – | 0.00003531 | 0.0610237 | 0.000001 | 0.0002641 | 0.001 | 0.0002199 |
| ft ³ | 28,316.847 | – | 1728 | 0.02831685 | 7.480519 | 28.316847 | 6.229 |
| in ³ | 16.387064 | 0.0005787 | – | 0.00001637 | 0.0043290 | 0.0163871 | 0.003605 |
| m ³ | 1,000,000 | 35.31467 | 61,023.74 | – | 264.172 | 1000 | 220.0 |
| gal (U.S. Liquid) | 3785.4123 | 0.13368056 | 231 | 0.00378541 | – | 3.785412 | 0.8327 |
| L | 1000 | 0.03531467 | 61.02374 | 0.001 | 0.2641721 | – | 0.2200 |
| gal (Imperial) | 4546.10 | 0.1605 | 277.40 | 0.004546 | 1.201 | 4.546 | – |

* 1 cm³ = 1 ml

| Mass and Weight | To Obtain | | | | | | |
|--------------------|-----------------------|-----------------|-----------|-------------------------|-------------------------|------------------------|------------------------|
| | mg | g | kg | oz* | lb* | ton (short, U.S.) | ton (long, metric) |
| | Multiply By | | | | | | |
| mg | – | 0.001 | 0.000001 | 3.5274×10^{-5} | 2.2046×10^{-6} | 1.102×10^{-9} | 1×10^{-9} |
| g | 1000 | – | 0.001 | 0.0352740 | 0.0022046 | 1.102×10^{-6} | 1×10^{-6} |
| kg | 1,000,000 | 1000 | – | 35.273962 | 2.2046226 | 0.0011023 | 1×10^{-3} |
| oz* | 28,349.5 | 28.34952 | 0.0283495 | – | 0.0625 | 3.125×10^{-5} | 2.83×10^{-5} |
| lb* | 453,592 | 453.59237 | 0.4535924 | 16 | – | 0.0005 | 4.535×10^{-4} |
| ton (short, U.S.) | 9.07185×10^6 | 907.185 | 907.18474 | 32,000 | 2000 | – | 0.907 |
| ton (long, metric) | 1×10^9 | 1×10^6 | 1000 | 35,274 | 2205 | 1.102 | – |

*avoirdupois

| Concentration Equivalents | | | |
|---------------------------|------------|---------------|---------------|
| Concentration | Equivalent | Concentration | Equivalent |
| 1,000,000 ppm | = 100.00% | 1,000 ppb | = 1 ppm |
| 100,000 ppm | = 10.0% | 100 ppb | = 0.1 ppm |
| 10,000 ppm | = 1.0% | 10 ppb | = 0.01 ppm |
| 1,000 ppm | = 0.1% | 1 ppb | = 0.001 ppm |
| 100 ppm | = 0.01% | 1,000 ppt | = 0.001ppm |
| 10 ppm | = 0.001% | 100 ppt | = 0.0001ppm |
| 1 ppm | = 0.0001% | 10 ppt | = 0.00001ppm |
| | | 1 ppt | = 0.000001ppm |
| | | 1,000 ppt | = 1 ppb |
| | | 100 ppt | = 0.1 ppb |
| | | 10 ppt | = 0.01 ppb |
| | | 1 ppt | = 0.001 ppb |

| Exponential Equivalents | | | |
|-------------------------|----------------|---------------------|---------------------|
| Scientific Notation | Equivalent | Scientific Notation | Equivalent Notation |
| 1×10^{10} | 10,000,000,000 | 1×10^0 | 1 |
| 1×10^9 | 1,000,000,000 | 1×10^{-1} | 0.1 |
| 1×10^8 | 100,000,000 | 1×10^{-2} | 0.01 |
| 1×10^7 | 10,000,000 | 1×10^{-3} | 0.001 |
| 1×10^6 | 1,000,000 | 1×10^{-4} | 0.0001 |
| 1×10^5 | 100,000 | 1×10^{-5} | 0.00001 |
| 1×10^4 | 10,000 | 1×10^{-6} | 0.000001 |
| 1×10^3 | 1,000 | 1×10^{-7} | 0.0000001 |
| 1×10^2 | 100 | 1×10^{-8} | 0.00000001 |
| 1×10^1 | 10 | 1×10^{-9} | 0.000000001 |
| 1×10^0 | 1 | 1×10^{-10} | 0.0000000001 |