

Scientists in any country other than the U. S. might need to convert measurements in SI units or other standard units to units used in the U. S. Here is a handy table:

1 light-year = $(2.9974258 \times 10^8 \text{ m/s}) \cdot (39.37007874 \text{ in/m}) \cdot (3 \text{ barleycorns/in}) \cdot$
 $(365 \text{ d} \times 86400 \text{ s/d} + 6 \text{ h} \times 3600 \text{ s/h} + 9 \text{ min} \times 60 \text{ s/min} + 9.55 \text{ s} = 3.155814955 \times 10^7 \text{ s})$
 $= 1.11724266 \times 10^{18} \text{ barleycorns} = 1.11724266 \text{ billions of billions of barleycorns}$

1 liter = $1.22835 \times 10^{-10} \text{ cubic furlongs} = 0.122835 \text{ cubic millifurlongs}$
 (1 furlong = 1 furrow long = 660 ft)
 $= 4.193207 \text{ millihogsheads}$
 (1 hogshead = 63 gallons = 238.4810 L)
 $= 4.399385 \text{ decipottles}$
 (1 pottle = 0.5 British gallon = 2.2730450 L)
 $= 1.047438 \text{ centibarrels (cranberry)}$
 (1 cranberry barrel = 95.4710 L)

1 stere = $1 \text{ m}^3 = 29.3524 \text{ firkins}$
 (1 firkin = 9 gal = 34.0687 L)

1oC = a little bit more warmish
 (King so-and-so didn't even have a thermometer hundreds of years ago when the English system was set up)

1 kilogram = $7.716179 \text{ hectoscruples}$
 (1 scruple = $5/6 \text{ pennyweight} = 1.2959782 \text{ g}$)

1 N m⁻² (*) = $4.01463 \text{ milli-inches}_{\text{water}}$
 (1 inch of water at 0oC and under the gravitational acceleration at the mean sea level and corrected for centrifugal force of the Earth's rotation = 249.089 Pa)
 $= 1.605296 \times 10^{-15} \text{ light-years of mustard gas at } 60\text{oF and } 1 \text{ bar at the equator at sea level}$
 $= 1.605296 \text{ femtolight-years of mustard gas...}$
 (This unit of light years of mustard gas was coined by my friend and colleague, Dennis J. Diestler while we were in grad school at Caltech)

$P = g\rho_{\text{mass}}h = 9.80616 \text{ m/s}^2 \cdot (MW \cdot P_0/RT) \cdot 9.46053 \times 10^{12} \text{ m}$
 $P_0 = 1.01325 \times 10^5 \text{ kg m}^{-1} \text{ s}^{-2}$
 $R = 8.314413 \text{ J mol}^{-1} \text{ K}^{-1}$
 $T = 288.716 \text{ K}$
 $MW = 0.15908 \text{ kg mol}^{-1}$
 $\rho_{\text{mass}} = 6.4148 \text{ kg m}^{-3}$
 $P = 6.22938 \times 10^{14} \text{ (kg m}^{-1} \text{ s}^{-2} = \text{N m}^{-2})$

35 mm = $1.7398393 \text{ millichains}$
 (1 chain = 792 in = 20.116800 m = 20,116.800 mm)

Duly computed by Vince Gutschick, Las Cruces, NewMexico, actually a part of the USA; 2006

* Einstein, Newton, and Pascal were playing hide-and-seek. It was Einstein's turn to be the seeker. While he closed his eyes and counted to 100, Pascal ran off, but Newton walked a short distance, drew a square 1 m on a side with chalk, and stood in it. Einstein opened his eyes, spied Newton, and said, "I found Newton." Newton replied, "No, you found Newton over 1 square meter. You found Pascal."