

Convert Imperial to Metric Units
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By Roger Gagon

When you travel outside the United States, you quickly notice that the U.S. is unique, at least in one way. In other countries a street sign gives the distance to town as three kilometers. You walk into the grocery store and buy a liter of milk. You overhear a local farmer buying seed for his eight hectares of land.

Because the United States has been slow to adopt the metric standard used by the rest of the world, writers often need to provide both Imperial measurements and metric equivalents. Thanks to Bruce Hallock's winning macro in this year's Best Shot contest, included here as METRIC.WPM, this conversion process is no longer a drudgery. You can type your Imperial measurement, such as 25 miles, block the Imperial measurement, run the macro and have the metric equivalent (40.2 kilometers) inserted immediately after the Imperial measurement.

Supported Conversions

The macro provides a variety of conversions from Imperial measurements to their metric equivalents, including miles to kilometers, feet to meters, pounds to kilograms and degrees Fahrenheit to degrees Celsius (see Table 1 below).

Of course you're not limited to these conversions. With a basic knowledge of macros and using a metric conversion table (found in many dictionaries under the heading Metric), you should have no problem adding some of your own conversions to the macro. If you include primary metric measurements in your writing, you may also want to add all of the metric to Imperial conversions.

Using the Macro

Before you run the macro, type your Imperial measurement using any one of the formats shown in Figure 1 below. Periods can also be used with the abbreviated formats. The macros don't recognize (") for inches, (') for feet or (°) for degrees, so you'll need to use a valid format from the list in Figure 1.

Let's say that you typed 25 miles. For the macro to insert the conversion in the correct location, you always need to block from left to right, so move your cursor to the 2 in 25. Press Block (Alt-F4) and block to the end of the word "miles." (It doesn't matter if you block an extra space or two after miles.) To run the macro, press Macro (Alt-F10), type "metric" and press (Enter).

You'll be asked how many decimal places you want included in the conversion. Press the desired number, and the macro inserts 40.2 kilometers in parentheses immediately after 25 miles. The macro drops any decimal places beyond the number you specify. (It doesn't round up if the last digit is greater than 5.)

You'll want to be aware of a few things when you run the macro:

- If you are converting a measurement from inches, when you run the macro you'll be asked if you want the conversion expressed in meters, centimeters or millimeters.

- When converting large numbers, you can use commas as thousands separators (for example, 8,250 feet).
- The macro allows you to use decimal places in the original numbers for all conversions except degrees.

How the Macro Works

Lines 1-10 do some preliminary stuff like turning off Typeover mode and Reveal Codes (line 1) and checking to see if you have blocked the Imperial measurement (lines 2-4).

The macro needs to identify the word you blocked – such as meters or pounds – so that it knows which conversion factor to use. To ease the task of identifying the various formats that can be used to type the unit of measure (see Figure 1), the macro copies the blocked text to the other document screen (lines 5-6), separates the number from the text (line 7) and then strips any periods or spaces from the text (lines 8-10).

Lines 11-33 use a {CASE CALL} command to see if the text (in its stripped form) matches one of the possible units of measure, such as inch, inches, in, squareinch, squareinches or sqin. (Remember, sq. in. with the periods and spaces stripped out is sqin.) If a match for the blocked text can't be found, line 33 calls label Sorry at the end of the macro (line 73) to display a brief error message, then the macro quits.

If a match is found, the macro sends execution to a matching label found on lines 42-72. When one of these labels is called, it assigns a specific conversion factor, such as 6.452, to variable CF (Conversion Factor), assigns the metric unit, such as square inches, to variable Un (Unit of measure), then returns to line 34.

Line 34 asks how many decimal places you want included in the conversion. The next few lines then calculate the decimal number and insert the final conversion into the document.

Imperial	Metric
Acres	Hectares
Cubic feet	Cubic meters
Cubic inches	Cubic centimeters
Cubic yards	Cubic meters
Degrees Fahrenheit	Degrees Celsius
Feet	Meters
Gallons	Liters
Inches	Centimeters
Inches	Meters
Inches	Millimeters

Imperial	Metric
Miles	Kilometers
Miles per hour	Kilometers per hour
Ounces	Grams
Pints	Liters
Pounds	Kilograms
Quarts	Liters
Square feet	Square meters
Square inches	Square centimeters
Square miles	Square kilometers
Square yards	Square meters
Tons	Metric tons
Yards	Meters

Table 1

inch	inches	in	
square inch	square inches	sq in	
cubic inch	cubic inches	cu in	
foot	feet	ft	
square foot	square feet	sq ft	
cubic foot	cubic feet	cu ft	
yard	yards	yd	yds
square yard	square yards	sq yd	sq yds
cubic yard	cubic yards	cu yd	cu yds
mile	miles	mi	
square mile	square miles	sq mi	
mile per hour	miles per hour	mph	
ounce	ounces	oz	
pound	pounds	lb	lbs
ton	tons	short ton	short tons
gallon	gallons	gal	gals
quart	quarts	qt	qts
pint	pints	pt	pts
acre	acres	ac	
degree	degrees	deg	
degree Fahrenheit	degrees Fahrenheit	degree F	degrees F

Figure 1