

Conversion Formulas and Tables


Metric to English, English to Metric

Introduction

Most of the world, with the exception of the USA, uses the metric system of measurements exclusively. In the USA there are many people that choose to use the metric system. There are also those who are unfamiliar with, or just don't 'like' the metric system.


JOBO is an international company. As such, we want to be able to provide information that is understandable to as many different people as possible. To this end, we try to include both metric and English measurements whenever possible.

You may find other sources that publish information exclusively in only one of the measurement systems. These tables will help those who are not familiar with one system to be able to convert to 'their' system of measures.

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● Conversion Formulas

- Temperature: Metric to English
- Temperature: English to Metric
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Formula for Temperature:

Metric to English

Celsius to Fahrenheit

Exact:

$$9/5 C + 32 = F$$

Approximately:

$$C \times 2 \sim F$$

Rough Example:

$$.1C \sim .2F$$

The 'Approximately' and the 'Rough Example' conversions should be used only to figure changes to the original temperature, not for converting an absolute temperature. For example, finding out how much difference 3/10 of a degree is OK, but, 'what is 68 degrees F equal to in C' is not correctly converted (because of the 32 degree shift, plus or minus). Note: Some references may use the name 'centigrade' instead of 'Celsius', they mean the same thing.

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Formula for Temperature:

English to Metric

Fahrenheit to Celsius

Exact:

$$5/9 (F - 32) = C$$

Approximately:

$$F \times .5 \sim C$$

Rough Example:

$$1F \sim .05C$$

The 'Approximately' and the 'Rough Example' conversions should be used only to figure changes to the original temperature, not for converting an absolute temperature. For example, finding out how much difference 3/10 of a degree is OK, but, 'what is 68 degrees F equal to in C' is not correctly converted (because of the 32 degree shift, plus or minus). Note: Some references may use the name 'centigrade' instead of 'Celsius', they mean the same thing.

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Formula for Volume:**Metric to English****Milliliters to Ounces****Exact:**

$$\text{ml} / 29.5737 = \text{oz}$$

Approximately:

$$\text{ml} / 30 \sim \text{oz}$$

Rough Example:

$$90 \text{ ml} \sim 3 \text{ oz}$$

Ounces used for conversion are US fluid ounces. 8 oz = 1 US cup. 16 oz = 1 US pint (pt.) 32 oz = 1 US quart (qt.) 128 oz = 1 US gallon (gal.) 1 ml = 1 cubic centimeter (cc.) 1000 ml = 1 liter (l.) Note: 'Liter' is sometimes spelled 'litre.'

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Formula for Volume:**English to Metric****Ounces to Milliliters**

Exact:

$$\text{oz} / 0.0338 = \text{ml}$$

Approximately:

$$\text{oz} / 0.03 \sim \text{ml}$$

Rough Example:

$$1 \text{ oz} \sim 30 \text{ ml}$$

Ounces used for conversion are US fluid ounces. 8 oz = 1 US cup. 16 oz = 1 US pint (pt.) 32 oz = 1 US quart (qt.) 128 oz = 1 US gallon (gal.) 1 ml = 1 cubic centimeter (cc.) 1000 ml = 1 liter (l.) Note: 'liter' is sometimes spelled 'litre.'

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Formula for Length:**Metric to English****Millimeters to Inches****Exact:**

$$\text{mm} / 25.40 = \text{in}$$

Approximately:

$$\text{mm} / 25 \sim \text{in}$$

Rough Example:

$$25\text{mm} \sim 1\text{in}$$

10 mm = 1 cm (centimeter), 1,000 mm = 1 m (meter), 12 in = 1 foot, 3 foot = 1 yard.

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Formula for Length:**English to Metric****Inches to Millimeters****Exact:**

$$\text{in} / 0.03937 = \text{mm}$$

Approximately:
in / 0.04 ~ mm

Rough Example:
1 in ~ 25mm

10 mm = 1 cm (centimeter), 1,000 mm = 1 m (meter), 12 in = 1 foot, 3 foot = 1 yard.

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Formula for Weight:

Metric to English

Grams to Ounces

Exact:
 $\text{gm} \times 0.03527 = \text{oz}$

Approximately:
 $\text{gm} \times 0.03 \sim \text{oz}$

Rough Example:
30gm ~ 1oz

Ounces used for conversion are US weight ounces (avoirdupois). 16 oz = 1 pound (lb.) 1000 grams = 1 kilogram (kg.)

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Formula for Weight:

English to Metric

Ounces to Grams

Exact:
 $\text{oz} \times 28.349 = \text{gm}$

Approximately:
 $\text{oz} \times 30 \sim \text{gm}$

Rough Example: 1oz ~ 30gm

Ounces used for conversion are US weight ounces (avoirdupois). 16 oz = 1 pound (lb.) 1000 grams = 1 kilogram (kg.)

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● Conversion Tables

- Temperature: Metric to English
- Temperature: English to Metric
- Volume: Metric to English
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- Length: English to Metric
- Weight: Metric to English
- Weight: English to Metric

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Table for Temperature: Metric to English Celsius to Fahrenheit

C	F	Notes
-40.0	-40.0	Same Temperature
0.0	32.0	Water Freezes
15.0	59.0	
16.0	60.8	
17.0	62.6	
18.0	64.4	
19.0	66.2	
20.0	68.0	Common B&W
21.0	69.8	
22.0	71.6	
23.0	73.4	
24.0	75.2	Common B&W

25.0	77.0	
26.0	78.8	
27.0	80.6	
28.0	82.4	
29.0	84.2	
30.0	86.0	
31.0	87.8	
32.0	89.6	
33.0	91.4	
34.0	93.2	
35.0	95.0	Common RA-4, R-3, R-3000
36.0	96.8	
37.0	98.6	
38.0	100.4	Common C-41, E-6
39.0	102.2	
40.0	104.0	
100.0	212.0	Water Boils

Note: Some references may use the name 'centigrade' instead of 'Celsius', they mean the same thing.

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Table for Temperature: English to Metric Fahrenheit to Celsius

F	C	Notes
-40.0	-40.0	Same Temperature
32.0	0.0	Water Freezes
60.0	15.6	
62.0	16.7	
65.0	18.3	
68.0	20.0	Common B&W
70.0	21.1	

72.0	22.2	
75.0	23.9	Common B&W
77.0	25.0	
80.0	26.7	
82.0	27.8	
85.0	29.4	
87.0	32.6	
90.0	32.2	
92.0	33.3	
95.0	35.0	Common RA-4
97.0	36.1	
98.6	37.0	
100.0	37.8	Common C-41, E-6
102.0	38.9	
105.0	40.6	
212.0	100.0	Water Boils

Note: Some references may use the name 'centigrade' instead of 'Celsius', they mean the same thing.

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Table for Volume: Metric to English **Milliliters to Ounces**

ml	oz	Notes
1	0.03	
5	0.17	
10	0.34	
15	0.51	
20	0.68	
25	0.85	
30	1.01	
35	1.18	

40	1.35	
45	1.52	
50	1.69	
55	1.86	
60	2.03	
65	2.20	
70	2.37	
75	2.54	
80	2.70	
85	2.87	
90	3.04	
100	3.38	
200	6.78	
300	10.14	
400	13.52	
500	16.90	
600	20.28	
700	23.66	
800	27.04	
900	30.42	
1000	33.80	1 Liter

Ounces used for conversion are US fluid ounces. 8 oz = 1 US cup. 16 oz = 1 US pint (pt.) 32 oz = 1 US quart (qt.) 128 oz = 1 US gallon (gal.) 1 ml = 1 cubic centimeter (cc.) 1000 ml = 1 liter (l.) Note: 'Liter' is sometimes spelled 'litre.'formula

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Table for Volume: English to Metric Ounces to Milliliters

oz	ml	Notes
0.125	3.70	1/8 oz
0.25	7.39	1/4 oz

0.5	14.79	1/2 oz
0.75	22.8	3/4 oz
1	29.57	
2	59.15	
3	88.72	
4	118.29	
5	147.87	
6	177.44	
7	207.02	
8	236.59	1 cup
9	266.16	
10	295.74	
11	325.44	
12	354.88	
13	384.46	
14	414.03	
15	443.61	
16	473.18	1 pint
17	502.75	
18	532.33	
19	561.90	
20	591.47	
24	709.77	
28	828.06	
32	946.36	1 quart
64	1,892.72	1/2 gallon
128	3,785.43	1 gallon

Ounces used for conversion are US fluid ounces. 8 oz = 1 US cup. 16 oz = 1 US pint (pt.) 32 oz = 1 US quart (qt.) 128 oz = 1 US gallon (gal.) 1 ml = 1 cubic centimeter (cc.) 1000 ml = 1 liter (l.) Note: 'Liter' is sometimes spelled 'litre.'

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**Table for Length:
Metric to English
Millimeters to Inches**

mm	in	Notes
1	0.04	
2	0.08	
3	0.12	
4	0.16	
5	0.20	
6	0.24	
7	.028	
8	0.32	
9	0.36	
10	0.40	1 cm
20	0.79	
30	1.19	
40	1.59	
50	1.99	
60	2.38	
70	2.79	
80	3.18	
90	3.57	
100	3.97	10 cm
200	7.94	
300	11.91	
400	15.88	
500	19.85	
600	23.82	
700	27.79	
800	31.76	
900	35.73	
1,000	39.70	1 meter

.10 mm = 1 cm (centimeter), 1,000 mm = 1 m (meter), 12 in = 1 foot, 3 foot = 1 yard.

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Table for Length:
English to Metric
Inches to Millimeters

in	mm	Notes
0.00625	1.8	1/16 in
0.0125	3.2	1/8 in
0.25	6.4	1/4 in
0.5	12.7	1/2 in
1	25.4	
2	50.8	
3	76.2	
4	101.6	
5	127.0	
6	152.4	
7	177.8	
8	203.2	
9	228.6	
10	254.0	
11	279.4	
12	304.8	1 foot
13	330.2	
14	355.6	
15	381.0	
16	406.4	
17	431.8	
18	457.2	
19	482.6	
20	508.0	
21	533.4	
22	558.8	

23	584.2	
24	609.6	2 feet
25	635.0	
26	660.4	
27	685.8	
28	711.2	
29	736.6	
30	762.0	
31	787.4	
32	812.8	
33	838.2	
34	863.6	
35	889.0	
36	914.4	3 feet or 1 yard

10 mm = 1 cm (centimeter), 1,000 mm = 1 m (meter), 12 in = 1 foot, 3 foot = 1 yard.

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**Table for Weight:
Metric to English
Grams to Ounces**

gm	oz	Notes
1	0.04	
2	0.07	
3	0.11	
4	0.14	
5	0.18	
6	0.21	
7	0.25	
8	0.28	
9	0.32	

10	0.35	
20	0.71	
30	1.06	
40	1.41	
50	1.76	
60	2.12	
70	2.47	
80	2.87	
90	3.17	
100	3.35	
200	7.05	
300	10.58	
400	14.11	
500	17.64	
600	21.16	
700	24.69	
800	28.22	
900	31.74	
1000	35.27	1 kg

.Ounces used on the conversion table are US weight ounces (avoirdupois). 16 oz = 1 pound (lb.) 1000 grams = 1 kilogram (kg.)

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Table for Weight: English to Metric Ounces to Grams

oz	gm	Notes
0.00625	1.8	1/16 oz
0.0125	3.6	1/8 oz
0.25	7.1	1/4 oz
0.5	14.2	1/2 oz
1	28.4	

2	56.9	
3	85.3	
4	113.8	
5	142.2	
6	170.6	
7	199.1	
8	227.5	
9	256.0	
10	284.4	
11	312.8	
12	341.3	
13	369.7	
14	398.2	
15	426.6	
16	455.0	1 lb
17	483.5	
18	511.9	
19	540.3	
20	568.8	
21	597.2	
22	625.7	
23	654.1	
24	682.5	
25	711.0	
26	739.4	
27	767.9	
28	796.3	
29	824.7	
30	853.2	
31	881.6	
32	910.1	2 lb
33	938.5	
34	996.9	

35	995.4	
36	1023.8	

Ounces used on the conversion table are US weight ounces (avoirdupois). 16 oz = 1 pound (lb.) 1000 grams = 1 kilogram (kg.)