**Conversion Between US Customary Units & Metric Systems Sheet**

A conversion factor is a way to represent the same quantity using different units of measurement with their corresponding numerical values. Often the units are abbreviated.

Write the abbreviation for each unit:

1. Teaspoon \_\_\_\_\_\_\_\_\_\_\_ 8) Milliliter \_\_\_\_\_\_\_\_\_\_\_
2. Tablespoon \_\_\_\_\_\_\_\_\_\_\_ 9) Liter \_\_\_\_\_\_\_\_\_\_\_
3. Cup \_\_\_\_\_\_\_\_\_\_\_ 10) Gram \_\_\_\_\_\_\_\_\_\_\_
4. Quart \_\_\_\_\_\_\_\_\_\_\_ 11) Milligram \_\_\_\_\_\_\_\_\_\_\_
5. Gallon \_\_\_\_\_\_\_\_\_\_\_ 12) Kilogram \_\_\_\_\_\_\_\_\_\_\_
6. Ounces \_\_\_\_\_\_\_\_\_\_\_ 13) Pint \_\_\_\_\_\_\_\_\_\_\_\_
7. Pounds \_\_\_\_\_\_\_\_\_\_\_

Kitchen math often requires converting quantities. The following examples show how to use conversion factors in equations. The following tables provide the conversion factors to convert from metric to US customary units or US customary units to metric.

**Example conversion**

* 236.9ml (1 cup) beet juice 100% juice, no sugar added
* 28.3g (2 tbsp) gelatin

**To Convert Cups into Milliliters**

2 cup X 0.236588236 liter X 1000 millilter = 473.8 ml

cup liter

**To Convert Tablespoons into Grams**

4 tablespoons X 14.15 gram = 56.6 g

tablespoon

**Convert 1 C into Milliliters**

**Convert 2 Tablespoons into Grams**

**Tables for Conversion Factors**

Table 1. From Metric to US Customary Units

|  |  |  |  |
| --- | --- | --- | --- |
| **To Obtain** | **Multiply** | **Conversion Factor** | **Conversion Unit** |
| Teaspoons | Milliliters | 0.202884136 | Milliliters/Teaspoons |
| Tablespoons | Milliliters | 0.0676280454 | Milliliters/Tablespoons |
| Tablespoons | Grams | 0.0782368 | Grams/Tablespoons |
| Cups | Liters | 4.22675284 | Liters/Cups |
| Quarts | Liters | 1.05668821 | Liters/Quarts |
| Gallons | Liters | 0.2641720524 | Liters/Gallons |
| Ounces | Grams | 0.03527396195 | Grams/Ounces |
| Pounds | Kilograms | 2.204622622 | Kilograms/Pounds |

|  |  |  |  |
| --- | --- | --- | --- |
| **To Obtain** | **Multiply** | **Conversion Factor** | **Conversion Unit** |
| Milliliters | Fluid Ounces | 29.57352956 | Ounces/Milliliters |
| Milliliters | Teaspoons | 4.92892159 | Teaspoons/Milliliters |
| Milliliters | Tablespoons | 14.7867648 | Tablespoons/Milliliters |
| Milliliters | Cups | 236.588 | Cups/Milliliters |
| Liters | Cups | 0.236588236 | Cups/Liters |
| Liters | Quarts | 0.946352946 | Quarts/Liters |
| Liters | Gallons | 3.785411784 | Galloons/Liters |
| Grams | Tablespoons | 14.15 | Tablespoons/Grams |
| Grams | Ounces | 28.34952313 | Ounces/Grams |
| Kilograms | Pounds | 0.45 | Pounds/Kilograms |

Table 2. From US Customary Units to Metric

|  |  |  |
| --- | --- | --- |
| **Unit** | **Abbreviation** | **Meaning** |
| mega- | M | 106 |
| kilo- | k | 103 |
| hecto- | h | 102 |
| deca- | dk | 101 |
| deci- | d | 10-1 |
| centi- | c | 10-2 |
| milli- | m | 10-3 |
| micro- |  | 10-6 |
| nano- | n | 10-9 |

Table 3. Metric Units of Mass and Volume

Practice by converting:

1. 20 teaspoons of a liquid to **milliliters.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 5 milliliters of a liquid to **teaspoons**. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. 5 ounces of a powder to **grams.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 2 grams of powder to **ounces.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 2 cups of a liquid into **milliliters.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. 5 grams to **tablespoons.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. 10 tablespoons to **grams.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 1 pound to **kilograms.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 1 kilogram to **pounds.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 1 liter to **cups.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_