### Table 1. Test Weights

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Unit</th>
<th>Approximate Weight Pounds</th>
<th>Approximate Weight Kilograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa seed</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Barley</td>
<td>bu.</td>
<td>48</td>
<td>21.8</td>
</tr>
<tr>
<td>Beans, dry</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Beans, lima</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Beans, snap</td>
<td>bu.</td>
<td>30</td>
<td>13.6</td>
</tr>
<tr>
<td>Bluegrass seed</td>
<td>bu.</td>
<td>14-30</td>
<td>6.3-13.6</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>bu.</td>
<td>43-52</td>
<td>19.5-23.6</td>
</tr>
<tr>
<td>Clover seed</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Corn, ear (husked)</td>
<td>bu.</td>
<td>70</td>
<td>31.7</td>
</tr>
<tr>
<td>Corn, shelled</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Cotton</td>
<td>bale, gross</td>
<td>500</td>
<td>226.8</td>
</tr>
<tr>
<td></td>
<td>bale, net</td>
<td>478</td>
<td>216.8</td>
</tr>
<tr>
<td>Cottonseed</td>
<td>bu.</td>
<td>32</td>
<td>14.5</td>
</tr>
<tr>
<td>Flaxseed</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Grain sorghums</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Lentils</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Milk</td>
<td>gal.</td>
<td>8.6</td>
<td>3.9</td>
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<tr>
<td>Millet</td>
<td>bu.</td>
<td>48-50</td>
<td>21.8-22.7</td>
</tr>
<tr>
<td>Milo</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Mustard seed</td>
<td>bu.</td>
<td>58-60</td>
<td>26.3-27.2</td>
</tr>
<tr>
<td>Oats</td>
<td>bu.</td>
<td>32</td>
<td>14.5</td>
</tr>
<tr>
<td>Orchard grass seed</td>
<td>bu.</td>
<td>14</td>
<td>6.3</td>
</tr>
<tr>
<td>Peas, dry</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Rice, rough</td>
<td>bu.</td>
<td>45</td>
<td>20.4</td>
</tr>
<tr>
<td>Rice, rough</td>
<td>bag</td>
<td>100</td>
<td>45.4</td>
</tr>
<tr>
<td>Rye</td>
<td>bu.</td>
<td>56</td>
<td>25.4</td>
</tr>
<tr>
<td>Soybeans</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
<tr>
<td>Sudangrass seed</td>
<td>bu.</td>
<td>40</td>
<td>18.1</td>
</tr>
<tr>
<td>Sweet potatoes</td>
<td>bu.</td>
<td>55</td>
<td>24.9</td>
</tr>
<tr>
<td>Timothy seed</td>
<td>bu.</td>
<td>45</td>
<td>20.4</td>
</tr>
<tr>
<td>Wheat</td>
<td>bu.</td>
<td>60</td>
<td>27.2</td>
</tr>
</tbody>
</table>
Length (Linear) Measurements and Conversions
1 foot = 12 inches
1 yard = 3 feet
1 surveyor's rod = 16.5 feet
1 mile = 5,280 feet
1 mile = 1,760 yards
1 mile = 320 surveyor's rods
1 mile = .869 nautical miles
1 kiloyard = 3000 feet
1 kiloyard = .9144 mile
1 foot = .1667 fathom
1 hand (equine) = 4 inches = 10.16 centimeters

Surface (Area) Measurements and Conversions
1 square foot = 144 square inches
1 square foot = 0.0929 square meters
1 square yard = 9 square feet
1 square yard = 0.836 square meters
1 square rod = 30.25 square yards
1 square rod = 27.225 square feet
1 square rod = 25.293 square meters
1 square centimeter = .155 square inches
1 square decimeter = 15.5 square inches
1 square meter = 1.196 square yards
1 square meter = 10.764 square feet
1 square kilometer = 247.1 acres
1 acre = 160 square rods
1 acre = 1 rod wide by 0.5 mile long
1 acre = 43,560 square feet
1 acre = 208.71 feet by 208.71 feet
1/2 acre = 147.58 feet wide by 147.58 feet long
1/4 acre = 104.355 feet wide by
104.355 feet long
1 acre = 4,840 square yards
1 square acre = 69.57 yards by 69.57 yards
1 circular acre = 235.504 feet in diameter
1 centiare = 1 square meter
1 are = 100 centiares
1 are = 100 square meters
1 square are = 10 meters by 10 meters
1 are = .0247 acres
1 are = 119.599 square yards
1 decare = 1,000 square meters
1 decare = 10 ares
1 decare = .247 acres
1 hectare = 10,000 square meters
1 hectare = 10 decares
1 hectare = 2.47105 acres
1 acre = .404686 hectares
1 square hectare = 100 meters by 100 meters
1 hectare = 107,639 square feet
1 square hectare = 328 feet by 328 feet
1 square mile = 259 hectares
1 square kilometer = 1,000,000 square meters
1 square kilometer = 100 hectares
1 square kilometer = 10 hectares by 10 hectares

United States Government Land Measurements and Conversions
1 township = 36 sections
1 section = 640 acres
1 section = 1 square mile
1 quarter section = 160 acres
1 quarter section = 1/2 mile long by 1/2 mile wide
1 eighth section = 80 acres
1 eighth section = 1/2 mile long by 1/4 mile wide
1 sixteenth section = 40 acres
1 sixteenth section = 1/4 mile long by 1/4 mile wide

Surveyor's Measurements and Conversions
1 link = 7.92 inches
1 link = .66 feet
1 rod = 25 links
1 rod = 16.5 feet
1 pole = 1 rod
1 pole = 25 links
1 chain = 4 rods
1 chain = 66 feet
1 acre = 10 square chains
1 mile = 80 chains
1 mile = 8 furlongs
1 furlong = 10 chains
1 furlong = 0.125 mile
1 furlong = 660 feet
Volume Measurements and Conversions
1 cubic foot = 1,728 cubic inches
1 cubic yard = 27 cubic feet

Dry
1 teaspoon = .1667 fluid ounces (1/6 oz.)
1 tablespoon (1/2 oz.) = 3 teaspoons (level)
1 peck = 8 quarts (dry)
1 peck = 9.31 quarts (wet)
1 bushel = 4 pecks
1 bushel grain or shelled corn = 1.244 cubic feet
1 cubic foot grain or shelled corn = .804 bushels
1 bushel ear corn = 2.5 cubic feet
1 cubic foot ear corn = .4 bushels
1 board foot = 1" x 12" x 12" nominal dimensions
1 cord (wood) = 128 cubic feet
1 cubic yard = 81 square feet - 4 inch floor
1 cubic yard = 54 square feet - 6 inch floor

Liquid
1 fluid ounce = 2 tablespoons
1 cup (liquid) = 16 tablespoons (8 ounces)
1 gallon = 4 quarts
1 quart = 2 pints
1 pint = 2 cups
1 cup = 8 fluid ounces
1 pint = 16 fluid ounces
1 quart = 32 fluid ounces
1 gallon = 128 fluid ounces
1 gallon = .1337 cubic feet
1 cubic foot = 7.48 gallons
1 gallon = 231 cubic inches
1 gallon = 32 gill
1 gallon (US) = .8327 imperial gallons (British)
1 imperial gallon (British) = 1.201 US gallons
1 gallon water (20° C) = 8.33 pounds
1 foot of water (4° C) = .4335 pounds per square inch
1 pound per square inch = 2.307 feet of water (4° C)
1 cubic foot = 62.427 pounds of water (4° C)
1 gallon = 8.33 pounds of water (4° C)
1 acre inch = 27,154 gallons liquid
1 acre foot = 325,851 gallons liquid

Velocity
1 mile per hour = 1.467 feet per second
1 mile per hour = .447 meters per second
1 mile per hour = 1.609 kilometers per hour
1 kilometer per hour = .9113 feet per second
1 kilometer per hour = .2778 meters per second
1 kilometer per hour = .6214 miles per hour
1 meter per second = 3.281 feet per second
1 meter per second = 2.237 miles per hour
1 meter per second = 3.6 kilometers per hour
1 foot per second = .3048 meters per second
1 foot per second = .6818 miles per hour
1 foot per second = 1.0973 kilometers per hour

Flow Rate
Mass
1 short (US) ton = 2,000 pounds
1 metric ton = 2,204.62 pounds
1 short ton per day = .907 metric tons per day
1 short ton per day = 37.80 kilograms per hour
1 short ton per day = .630 kilograms per minute
1 short ton per day = 83.33 pounds per hour
1 short ton per day = 1.389 pounds per minute
1 short ton per hour = .694 kilograms per minute
1 short ton per hour = 15.12 kilograms per minute
1 metric ton per day = 1.102 short tons per day
1 metric ton per day = 41.67 kilograms per hour
1 metric ton per day = .694 kilograms per minute
1 metric ton per day = 91.86 pounds per hour
1 metric ton per day = 1.531 pounds per minute
1 metric ton per hour = 36.74 pounds per minute
1 metric ton per hour = 16.67 kilograms per minute

Volume
1 cubic foot per hour = .0283 cubic meter per hour
1 cubic meter per hour = 35.315 cubic feet per hour
1 US gallon per hour = 3.785 liters per hour
1 gallon per hour = 3.208 cubic feet per day
1 gallon per hour = 1.172 cubic feet per year
1 gallon per hour = 90.85 liters per day
1 gallon per hour = 33,182 liters per year
1 gallon per hour = 19.98 imperial gallons per day
1 gallon per hour = 7,299 imperial gallons per year
1 liter per hour = .264 gallons per hour
1 liter per hour = .8476 cubic feet per day
1 liter per hour = 309.6 cubic feet per year
1 liter per hour = 6.34 gallons per day
1 liter per hour = 2,316 gallons per year
1 liter per hour = 5.28 imperial gallons per day
1 liter per hour = 1,928 imperial gallons per year
1 acre foot per day = 325,851 gallons per day
1 acre foot per day = 13,577 gallons per hour
1 acre foot per day = 226 gallons per minute
1 acre foot per day = 3.77 gallons per second
1 acre foot per day = 1,815 cubic feet per hour
1 acre foot per day = 30.25 cubic feet per minute
1 acre foot per day = .504 cubic feet per second
1 acre foot per day = 67.222 cubic yards per hour
1 acre foot per day = 1.120 cubic yards per minute
1 acre foot per day = 51.40 cubic meters per hour
1 acre foot per day = .857 cubic meters per minute
1 acre foot per hour = 7,820,434 gallons per day
1 acre foot per hour = 325,851 gallons per hour
1 acre foot per hour = 5,430.86 gallons per minute
1 acre foot per hour = 90.51 gallons per second
1 acre foot per hour = 43.560 cubic feet per hour
1 acre foot per hour = 726 cubic feet per minute
1 acre foot per hour = 12.1 cubic feet per second
1 acre foot per hour = 1,613 cubic yards per hour
1 acre foot per hour = 26.9 cubic yards per minute
1 acre foot per hour = .448 cubic yards per second
1 acre foot per hour = 1,233.48 cubic meters per hour
1 acre foot per hour = 20.56 cubic meters per minute
1 acre foot per hour = .343 cubic meters per second
1 acre inch per hour = 651,703 gallons per day
1 acre inch per hour = 27,154 gallons per hour
1 acre inch per hour = 453 gallons per minute
1 acre inch per hour = 7.54 gallons per second
1 acre inch per hour = 60.50 cubic feet per minute
1 acre inch per hour = 1.008 cubic feet per second
1 acre inch per hour = 2.241 cubic yards per minute
1 acre inch per hour = .037 cubic yards per second
1 acre inch per hour = 1.713 cubic meters per minute
1 acre inch per hour = .029 cubic meters per second
1 hectare meter per day = 8.107 acre feet per day
1 hectare meter per day = 110,072 gallons per hour
1 hectare meter per day = .338 acre feet per hour
1 hectare meter per day = 97.29 acre inches per day
1 hectare meter per day = 14,714 cubic feet per hour
1 hectare meter per day = 10,000 cubic meters per day
1 hectare meter per day = 1,815 cubic yards per hour
1 hectare meter per day = 26.9 cubic yards per minute
1 hectare meter per day = .037 cubic yards per second
1 hectare meter per hour = 1.713 cubic meters
1 hectare meter per hour = 20.56 cubic meters
1 hectare meter per hour = .029 cubic meters

Circle and Sphere (Area) Measurements and Conversions
Diameter of a circle = circumference x .31831
Circumference of a circle = diameter x 3.1416
Area of a circle = diameter x diameter x .7854
Surface of a ball = diameter x diameter x 3.1416
Doubling the diameter of a pipe increases its capacity four times.

Ton (Weight) Measurements and Conversions
1 short ton (US) = 2,000 pounds
1 short ton = 907 kilograms
1 long ton (imperial ton or shipping ton) = 2,240 pounds
1 long ton = 1,016 kilograms
1 metric ton = 2,204.62 pounds
1 metric ton = 1,000 kilograms
1 long ton = 1.120 short tons
1 long ton = 1.016 metric tons
1 metric ton = 1.102 short tons
1 metric ton = 0.984207 long tons
1 short ton = 0.8928571 long tons
1 short ton = 0.9071847 metric tons
Speed Measurements and Conversions
1 kilometer per hour = .6214 miles per hour
1 mile per hour = 1.609 kilometers per hour
1 meter per second = 2.237 miles per hour
1 meter per second = 3.6 kilometers per hour
1 mile per hour = .447 meters per second
1 knot = 1.151 miles per hour
1 mile per hour = .8690 knots

Application Measurements and Conversions
phosphorus (P) x 2.29 = P₂O₅
P₂O₅ x .44 = phosphorus (P)
potassium (K) x 1.2 = K₂O
K₂O x .83 = potash (K)
1 short ton per acre = 2.24 metric tons per hectare
1 metric ton per hectare = .446 short tons per acre

References
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