

### POUNDS PER CUBIC INCH

| Aluminum |          | Copper Alloys          |          | Nickel Alloys      |          |
|----------|----------|------------------------|----------|--------------------|----------|
| Alloy    | lb/cu in | Alloy                  | lb/cu in | Alloy              | lb/cu in |
| Nom.     | 0.100    | CDA 110                | 0.323    | Nickel             | 0.322    |
| 1100     | 0.098    | CDA 230                | 0.316    | Monel              | 0.319    |
| 2011     | 0.102    | CDA 360                | 0.308    | Inconel            | 0.307    |
| 2024     | 0.101    | CDA 464                | 0.304    | <b>Misc Metals</b> |          |
| 3003     | 0.099    | <b>Stainless Steel</b> |          | Carbon Steel       | 0.280    |
| 5052     | 0.097    | Alloy                  | lb/cu in | Lead               | 0.410    |
| 6061     | 0.098    | 300 Series             | 0.290    | Magnesium          | 0.064    |
| 6063     | 0.097    | 400 Series             | 0.280    | Tin                | 0.264    |
| 7075     | 0.101    | 17-4                   | 0.280    | Titanium           | 0.162    |

### FORMULAE FOR WEIGHT

|                  |                                  |                |
|------------------|----------------------------------|----------------|
| Sheets           | Length x Width x t x w           | =lbs per piece |
| Circles          | .785 x D <sup>2</sup> x t x w    | =lbs per piece |
| Rings            | .785 x (D + d) x (D - d) x t x w | =lbs per piece |
| Round Rods       | D <sup>2</sup> x 9.42 x w        | =lbs per foot  |
| Square Bars      | D <sup>2</sup> x 12 x w          | =lbs per foot  |
| Rectangular Bars | Thickness x Width x 12 x w       | =lbs per foot  |
| Hexagonal Rods   | D <sup>2</sup> x 10.39 x w       | =lbs per foot  |

D = Outside diameter (or dimension) in inches    d = Inside diameter in inches    t = Thickness in inches    w = Pounds per cubic inch

|               |                      |               |
|---------------|----------------------|---------------|
| Round Tubing  | 37.7 x w x t x (D-t) | =lbs per foot |
| Square Tubing | 48.0 x w x t x (D-t) | =lbs per foot |

D = Outside diameter (or dimension) in inches    t = Wall thickness in inches    w = Pounds per cubic inch

### LINEAR MEASURE CONVERSION

|                            |                               |
|----------------------------|-------------------------------|
| 1 Inch = 25.4 Millimeters  | 1 Millimeter = 0.03937 Inches |
| 1 Inch = 2.54 Centimeters  | 1 Centimeter = .3937 Inches   |
| 1 Foot = 30.48 Centimeters | 1 Meter = 39.37 Inches        |
| 1 Yard = .9144 Meters      | 1 Meter = 1.0936 Yards        |

### WEIGHT CONVERSION

| 1 Pound = .4536 Kilograms |              | 1 Kilogram = 2.2049 Pounds |  |
|---------------------------|--------------|----------------------------|--|
| 1 Short Ton               | 2,000 Pounds | 907.18 Kilograms           |  |
| 1 Long Ton                | 2,240 Pounds | 1,016 Kilograms            |  |
| 1 Metric Ton              | 2,205 Pounds | 1,000 Kilograms            |  |

### STRENGTH CONVERSION

| To Convert From                            | To  | Multiply by |
|--|---|-------------|
| pound/sq. inch (psi)                       | ksi (1000psi)                                 | 0.001       |
| ksi  | megapascal (Mpa)                              | 6.895       |
| pound/sq. inch (psi)                       | megapascal (Mpa)                              | 0.006895    |
| Newton/sq. millimeter (N/mm <sup>2</sup> ) | megapascal (Mpa)                              | 1           |
| pound/sq. inch (psi)                       | Newton/square millimeter (N/mm <sup>2</sup> ) | 0.006895    |
| ksi  | Newton/square millimeter (N/mm <sup>2</sup> ) | 6.895       |
| ksi  | kilogram/square millimeter                    | 0.704       |