Nuts and Bolts Weight Chart

Mcneil Instruments specializes in the manufacturing and supply of high-quality **nuts and bolts** for diverse industrial applications. Below is a comprehensive weight chart to help you choose the ideal sizes based on your requirements. Our precision-engineered products ensure durability and reliability in every application.

Nuts and Bolts Weight Chart

Size	Bolt Weight (kg)	Nut Weight (kg)	Total Weight (kg)
M12 x 35	0.049	0.013	0.062
M12 x 40	0.053	0.013	0.066
M12 x 45	0.058	0.013	0.071
M16 x 35	0.087	0.032	0.119
M16 x 40	0.094	0.032	0.126
M20 x 45	0.173	0.061	0.234
M20 x 50	0.186	0.061	0.247
M24 x 45	0.258	0.104	0.362
M24 x 50	0.276	0.104	0.380

(For a detailed chart, kindly contact Mcneil Instruments.)

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Approximate Weight for 100 Pieces

Length (mm)	Diameter (mm)	Approx. Weight (kg)
12	M6	0.67
16	M8	1.59
20	M10	3.34
25	M12	4.62
30	M14	10.12
35	M16	15.82
40	M18	16.61
50	M20	18.25
60	M24	19.92

(Weights are calculated for bolts with corresponding nuts.)

How to Calculate Weight for Nuts and Bolts

For Bolts

1. **Determine Dimensions**: Measure the bolt's **diameter, length, and thread pitch**.
2. **Material Density**: Find the density of the bolt material (e.g., steel, brass, etc.).
3. **Volume Calculation**: Use the formula:
   Volume = π × (Radius²) × Length
   (For threads, consider a reduced area calculation if precision is needed.)
4. **Weight**: Multiply the volume by the material's density.

Example:

- **Bolt Dimensions**:
  Diameter = 10 mm (Radius = 5 mm), Length = 50 mm
- **Material Density**: Steel = 7.85 g/cm³

1. **Calculate Volume**:
   Volume = π × (Radius²) × Length
   = 3.1416 × (0.5 cm)² × 5 cm
   = 3.1416 × 0.25 × 5 = **3.93 cm³**
2. **Calculate Weight**:
   Weight = Volume × Density
   = 3.93 × 7.85 = **30.85 g**

For Nuts

1. **Measure Dimensions**: Determine the **outer diameter, inner diameter, and thickness**.
2. **Material Density**: Identify the material's density.
3. **Volume Calculation**: Subtract the inner cylindrical area from the outer area using:
   Volume = π × (Outer Radius² - Inner Radius²) × Thickness
4. **Weight**: Multiply the volume by the material's density.

Example:

- **Nut Dimensions**:
  Outer Diameter = 20 mm (Radius = 10 mm),
  Inner Diameter = 10 mm (Radius = 5 mm), Thickness = 10 mm
- **Material Density**: Steel = 7.85 g/cm³

1. **Calculate Volume**:
   Volume = $\pi \times (\text{Outer Radius}^2 - \text{Inner Radius}^2) \times \text{Thickness}$
   $= 3.1416 \times [(1\text{ cm})^2 - (0.5\text{ cm})^2] \times 1\text{ cm}$
   $= 3.1416 \times (1 - 0.25) \times 1$
   $= 3.1416 \times 0.75 =$ **2.36 cm^3**
2. **Calculate Weight**:
   Weight = Volume × Density
   = 2.36 × 7.85 = **18.53 g**

Why Choose Mcneil Instruments?

- **Precision Engineering:** Manufactured to exact specifications for superior performance.
- **Durability:** High-quality materials ensure long-lasting use.
- **Custom Sizes:** Available in standard and custom specifications.
- **Global Supply:** Trusted by industries worldwide for reliable deliveries.

For further inquiries or to place an order, reach out to **Mcneil Instruments** today!