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Aluminum Facts

[Aluminum](#) comes in many different shapes and grades. The type of aluminum grade you choose ultimately depends on how you intend to use the metal. Your intended use allows you to rank the characteristics of each grade from most important to least important. This will help you narrow down the list of suitable grades. For example, if weldability is most important to your project, but strength is not, it may make sense to choose [Alloy 1100](#), as this aluminum grade has excellent Weldability, but is not typically used for high-strength or high-pressure applications.

Keep these 7 things in mind next time you choose an aluminum grade. Use the quick reference chart at the end of this article to quickly and easily find the aluminum grade that is right for you.

Is Formability or Workability (the fashioning parts through mechanical deformation) an important factor?

- [Alloy 1100](#) – Excellent Formability / Workability
- [Alloy 2011](#) – Good Formability / Workability
- [Alloy 2024](#) – Good Formability / Workability
- [Alloy 3003](#) – Excellent Formability / Workability
- [Alloy 5052](#) – Good Formability / Workability
- [Alloy 6061](#) – Good Formability / Workability
- [Alloy 6063](#) – Good Formability / Workability
- [Alloy 7075](#) – Poor Formability / Workability

Is the Weldability of the Aluminum an important factor?

- [Alloy 1100](#) – Excellent Weldability
- [Alloy 2011](#) – Poor Weldability
- [Alloy 2024](#) – Poor Weldability
- [Alloy 3003](#) – Excellent Weldability
- [Alloy 5052](#) – Good Weldability
- [Alloy 6061](#) – Good Weldability
- [Alloy 6063](#) – Good Weldability
- [Alloy 7075](#) – Poor Weldability

Is the Machining of the Aluminum an important factor?

- [Alloy 1100](#) – Good Machinability (Best if Hard Temper)
- [Alloy 2011](#) – Excellent Machinability
- [Alloy 2024](#) – Fair Machinability (Best in Annealed Condition)
- [Alloy 3003](#) – Good Machinability
- [Alloy 5052](#) – Fair Machinability (Better if Hard Temper)
- [Alloy 6061](#) – Good Machinability (T4 and T6 Tempers only)
- [Alloy 6063](#) – Fair Machinability
- [Alloy 7075](#) – Fair Machinability (Best in Annealed Condition)

Is Corrosion Resistance of the Aluminum an important factor?

- [Alloy 1100](#) – Excellent Corrosion Resistance
- [Alloy 2011](#) – Poor Corrosion Resistance
- [Alloy 2024](#) – Poor Corrosion Resistance
- [Alloy 3003](#) – Good Corrosion Resistance
- [Alloy 5052](#) – Excellent Corrosion Resistance (Preferred in marine applications)
- [Alloy 6061](#) – Excellent Corrosion Resistance
- [Alloy 6063](#) – Good Corrosion Resistance
- [Alloy 7075](#) – Average Corrosion Resistance

Is Heat Treating of the Aluminum an important factor?

- [Alloy 1100](#) – Does not respond to Heat Treatment
- [Alloy 2011](#) – Can be Heat Treated
- [Alloy 2024](#) – Can be Heat Treated
- [Alloy 3003](#) – Does not respond to Heat Treatment
- [Alloy 5052](#) – Does not respond to Heat Treatment
- [Alloy 6061](#) – Can be Heat Treated
- [Alloy 6063](#) – Can be Heat Treated
- [Alloy 7075](#) – Can be Heat Treated

Is the Strength of the Aluminum an important factor?

- [Alloy 1100](#) – Not used for high-strength or high-pressure applications
- [Alloy 2011](#) – A high mechanical strength alloy
- [Alloy 2024](#) – A high strength aluminum alloy
- [Alloy 3003](#) – Medium strength
- [Alloy 5052](#) – Medium to high strength alloy
- [Alloy 6061](#) – Medium to high strength alloy
- [Alloy 6063](#) – Medium strength
- [Alloy 7075](#) – A high strength aluminum alloy

Typical end use applications of Aluminum Grades:

- [Alloy 1100](#) – Metal Spinning and General Fabrication
- [Alloy 2011](#) – General Machining
- [Alloy 2024](#) – Aerospace Applications
- [Alloy 3003](#) – Food & Chemical Equipment – General Fabrication
- [Alloy 5052](#) – Marine Applications – General Fabrication
- [Alloy 6061](#) – Structural Applications – General Fabrication
- [Alloy 6063](#) – Architectural Applications
- [Alloy 7075](#) – Aerospace Applications

Quick Reference Chart – Choosing an Aluminum Grade

	Formability or Workability	Weldability	Machining	Corrosion Resistance	Heat Treating	Strength	Typical Applications
<u>Alloy 1100</u>	Excellent	Excellent	Good	Excellent	No	Low	Metal Spinning
<u>Alloy 2011</u>	Good	Poor	Excellent	Poor	Yes	High	General Machining
<u>Alloy 2024</u>	Good	Poor	Fair	Poor	Yes	High	Aerospace Application
<u>Alloy 3003</u>	Excellent	Excellent	Good	Good	No	Medium	Chemical Equipment
<u>Alloy 5052</u>	Good	Good	Fair	Excellent	No	Medium	Marine Applications
<u>Alloy 6061</u>	Good	Good	Good	Excellent	Yes	Medium	Structural Applications
<u>Alloy 6063</u>	Good	Good	Fair	Good	Yes	Medium	Architectural Applications
<u>Alloy 7075</u>	Poor	Poor	Fair	Average	Yes	High	Aerospace Applications