

2011-T3 Aluminum		
Minimum Properties	Ultimate Tensile Strength, psi	55,000
	Yield Strength, psi	43,000
	Brinell Hardness	95
	Rockwell Hardness	B60
Chemistry	Aluminum (Al)	91.2 - 94.6%
	Bismuth (Bi)	0.2 - 0.6%
	Copper (Cu)	5.0 - 6.0%
	Iron (Fe)	0.7% max
	Magnesium (Mg)	2.1 - 2.9%
	Lead (Pb)	0.2 - 0.6%
	Silicon (Si)	0.4% max

### 2011 Aluminum

2011 is the most machinable of the commonly available aluminum alloys. Machining this alloy can produce excellent surface finishes on your product, and small, broken chips.

Weldability, strength, and anodizing response are all rated as average at best, and this alloy does not have a high degree of corrosion resistance.

If the ability to make your part quickly is important to you, and strength is not the primary desire, 2011 represents a good choice if you're using aluminum

### 2024 Aluminum

Copper is the main alloying ingredient in 2024. It is very strong compared to most aluminum alloys, and has average machinability, but the copper component of this alloy makes it susceptible to corrosion (many items in this alloy are produced with a clad surface to protect the underlying material.) In addition, 2024 is not considered to be weldable. Finally, the fatigue resistance of 2024 make it a primary choice when the application is expected to be under stress or strain for prolonged periods. It is commonly used in aerospace applications.

2024-T3 Aluminum		
Minimum Properties	Ultimate Tensile Strength, psi	70,000
	Yield Strength, psi	50,000
	Brinell Hardness	120
	Rockwell Hardness	B75
Chemistry	Aluminum (Al)	90.7 - 94.7%
	Chromium (Cr)	0.1% max
	Copper (Cu)	3.8 - 4.9%
	Iron (Fe)	0.5% max
	Magnesium (Mg)	1.2 - 1.8%
	Manganese (Mn)	0.3 - 0.9%
	Silicon (Si)	0.5% max

### 5052 Aluminum

5052 is the alloy most suited to forming operations, with good workability and higher strength than that of the 1100 or 3003 alloys that are commercially available.

5052 is not heat-treatable, but is stronger than most of the 5xxx series of alloys. It has very good corrosion resistance, and can be easily welded. 5052 is not a good choice for extensive machining operations, as it has only a fair machinability rating.

5052-H32 Aluminum		
Minimum Properties	Ultimate Tensile Strength, psi	33,000
	Yield Strength, psi	28,000
	Brinell Hardness	60
Chemistry	Aluminum (Al)	95.7 - 97.7%
	Chromium (Cr)	0.15 - 0.35%
	Copper (Cu)	0.1% max
	Iron (Fe)	0.4% max
	Magnesium (Mg)	2.2 - 2.8%
	Manganese (Mn)	0.1% max
	Silicon (Si)	0.25% max

### 6061 Aluminum

6061 Aluminum is, by most any measure, the most commonly used aluminum alloy. It is specified in most any application due to its strength, heat treatability, comparatively easy machining, and weldability. If that were not enough, it is also capable of being anodized, adding a layer of protection for finished parts.

The main alloy ingredients of 6061 aluminum are magnesium and silicon.

6061-T6 Aluminum		
Physical and Mechanical Properties	Ultimate Tensile Strength, psi	45,000
	Yield Strength, psi	40,000
	Brinell Hardness	95
	Rockwell Hardness	B60
Chemistry	Aluminum (Al)	95.8 - 98.6%
	Chromium (Cr)	0.04 - 0.35%
	Copper (Cu)	0.15 - 0.40%
	Iron (Fe)	0.70%
	Magnesium (Mg)	0.8 - 1.2%
	Manganese (Mn)	0.15% max
	Silicon (Si)	0.4 - 0.8%
Zinc (Zn)	0.25%	

### 6063 Aluminum

6063 is often called architectural aluminum for two reasons - first, it has a surface finish that is far smoother than the other commercially available alloys, and second, its strength is significantly less (roughly half the strength of 6061), making it suited for applications where strength is not the foremost consideration.

6063 is rated as "Good" for forming and cold working operations, "Excellent" for anodizing, and "Fair" for machining.

6063-T52 Aluminum		
Minimum Properties	Ultimate Tensile Strength, psi	27,000
	Yield Strength, psi	21,000
	Brinell Hardness	60
Chemistry	Aluminum (Al)	97.5% max
	Chromium (Cr)	0.1% max
	Copper (Cu)	0.1% max
	Iron (Fe)	0.35% max
	Magnesium (Mg)	0.45 - 0.90%
	Manganese (Mn)	0.1% max
	Silicon (Si)	0.2 - 0.6%

### 6262 Aluminum

6262 was designed as an aluminum alloy for operations where significant machining is required. It contains lead and bismuth to help with chip creation and breakage, as well as to partially lubricate the cutting tool. It is generally regarded as having good strength and corrosion resistance. Finished parts can be produced with a high level of polishing.

6262-T6511 Aluminum		
Minimum Properties	Ultimate Tensile Strength, psi	31,900
	Yield Strength, psi	27,600
	Brinell Hardness	71
Chemistry	Aluminum (Al)	94.6 - 97.8%
	Chromium (Cr)	0.04 - 0.14%
	Copper (Cu)	0.15 - 0.40%
	Iron (Fe)	0.7% max
	Magnesium (Mg)	0.8 - 1.2%
	Manganese (Mn)	0.15% Max
	Bismuth (Bi)	0.4 - 0.7%
	Silicon (Si)	0.4 - 0.8%
Lead (Pb)	0.4 - 0.7%	

### 7075 Aluminum

7075 is the other "aircraft grade" aluminum that is carried by OnlineMetals. Its principal alloying ingredients are Zinc and copper, which make it one of the highest-strength aluminum alloys that are available. In fact, its typical strength in the T6 temper is higher than most mild steels.

7075 also has average-to-good ratings for machinability, corrosion resistance, and anodizing response. Like 2024, however, it is not considered to be weldable.

7075-T6 Aluminum		
Physical and Mechanical Properties	Ultimate Tensile Strength, psi	83,000
	Yield Strength, psi	73,000
	Brinell Hardness	150
	Rockwell Hardness	B87
Chemistry	Aluminum (Al)	87.1 - 91.4%
	Zinc (Zn)	5.1 - 6.1% max
	Copper (Cu)	1.2 - 2.0%
	Chromium (Cr)	0.18 - 0.28%
	Iron (Fe)	0.5 max
	Magnesium (Mg)	2.1 - 2.9%
	Manganese (Mn)	0.3% max