

Alcoa's 5052 and 6061 aluminum alloys offer a remarkable spectrum of design opportunities to benefit consumer electronics manufacturers. The light weight materials enable you to trim precious ounces, coupled with high strength to make smaller, thinner components attainable. But while they score high marks for function, these alloys also take on an outstanding variety of looks and feels – a multitude of alternatives for creating and updating handheld devices and technologies for the home.

Application

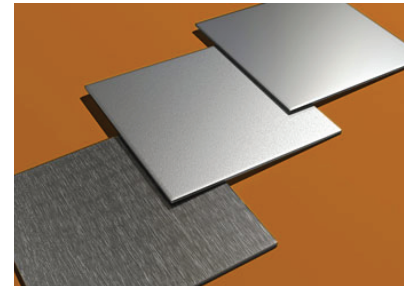
Material strength, attractive finish and anodizing are all priorities for aluminum in electronics. Alcoa's 5052 alloy achieves both and is the preferred choice in the market for consumer electronics casings. It's ideal for larger electronics like notebook computers and televisions. Alternatively, when strength and mechanical performance is a priority for your product, 6061 excels in both and is a outstanding solution for handheld devices and mobile phones.

Finishes and Surfaces

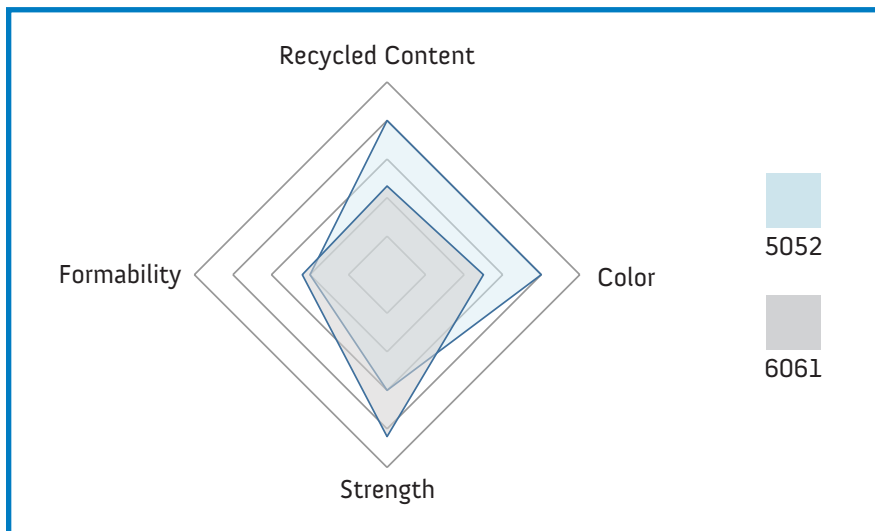
Using authentic material like aluminum in electronic casings gives the consumer a sense of quality and value that they expect from their product. Alcoa's 5052 and 6061 alloys are available in a range of esthetically pleasing mechanical and chemical finishes such as mirrored bright finish, smooth satin matte finish, and classic brushed finish. All are available in a variety of colors, and can be applied directly to the coil so a finishing step can be eliminated from the process.

Environmental

Aluminum is infinitely recyclable, and nearly 75% of all aluminum ever produced since 1888 is still in use today. Recycling aluminum uses 95% less energy and produces 95% less greenhouse gas emissions than making metal from new materials. 6061 is also available in a 25% recycled content EcoWise™ sheet.



- 5052
 - >> Predictable mechanical properties
 - >> Finishability
- 6061
 - >> High strength
 - >> High mechanical performance



Properties

Alloy Temper	Ultimate Tensile Strength		Tensile Yield Strength		Elongation ¹	Thermal Conductivity ²
	MPa	KSI	MPa	KSI	%4D"	BTU in/hr-ft ² F
5052-0	193	28	89.6	13	25%	960
5052-H32	228	33	193	28	12%	960
6061-T4	255	37	152	22	23%	1070
6061-T6	345	50	290	42	13%	1160

Availability

Alloy	Tempers	Gauges	Widths	Finishes	Typical Uses	Anodizeable
5052	0, H32	0.014"-0.190" 0.34-5mm	Up to 60" 1500mm	M, P, SB, LB, C	Laptops, Mobile devices	YES
6061	T4, T6	0.026"-0.125" 0.635-3.2mm	Up to 60" Up to 1524mm	M	Mobile devices	YES

For requirements outside of standard dimensions, please contact your Alcoa sales representative.

Available Finishes

- M) Mill Finish
- P) Preferred Mill Finish
- BR) One side Bright
- SB) Short Brush pattern
- LB) Long Brush pattern
- C) Coated

The Alcoa Advantage

OEMs are discovering that Alcoa can help them realize increasingly thinner, lighter and more durable products in a wide variety of looks and finishes. And aluminum is preferred by designers because it is contemporary, stronger and has an authentic, natural feel. Whether your company is designing the next hot cell phone, notebook computer, or flat panel display, we can help:

- >> Provide industry leading quality materials
- >> Select alloys optimized to your application
- >> Achieve greater levels of component integration
- >> Improve manufacturing practices and cycle times
- >> Increase overall product and system performance
- >> Create a sustainable, recyclable product

A successful consumer electronics product made with aluminum requires material and design expertise and solid technology. Most important, it also requires the right partner—a metals expert who can bring together all the tools and brains you need—with a global technology organization and production facilities and expertise worldwide. Contact us today to learn how we can help your products stand out in the crowd.

¹Measured at a minimum thickness of .41mm
²Measured at 77° F

Scan QR code to view all Alcoa Consumer Electronics products and offerings

