

## What We Can Learn From Aluminum

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Recycling aluminum is a simple and important part of the solution to our energy crisis and a perfect example of how powerful recycling can be. Aluminum is a versatile, recyclable material. In fact, aluminum is known as “infinitely recyclable.” When you recycle aluminum you save 95% of the energy you would have otherwise used to mine and smelt the natural resources.

But what exactly is this incredible, flexible and infinitely recyclable metal we call aluminum, and what can we learn from it? In everyday life, aluminum appears in a broad array of forms. For example, aluminum foil is extremely thin while a soda can is sturdy and durable — it’s amazing how both of those products are so physically different yet are made from the same material. A closer look at aluminum foil and aluminum cans reveals the broad versatility of this metal.

Aluminum was identified as an element in 1782, and in the 1850s, the French commonly used the metal to produce eating utensils and fashionable accessories. Believe it or not, aluminum was considered more precious than gold and silver at that time. After World War II, aluminum was used in the design of beverage cans, and Adolph Coors Company created the first 2-piece aluminum drink can in 1959. By 1991, aluminum foil was used for 75% of packaging purposes, which came to a total of 913 million pounds of aluminum foil used for shipment.

The composition and manufacturing of aluminum cans and aluminum foil differs one from the other. The aluminum can is made from bauxite, which is commonly obtained from Brazil and Australia. This ore is refined and smelted so it can be poured into a cast then rolled to the correct thickness. Small amounts of other metals including magnesium, manganese, iron, silicon and copper are added to the aluminum can alloy to make the metal stronger. Alternatively, aluminum household foil is made from a different aluminum alloy (98 to 99% aluminum), and ranges between 0.00017 and 0.0059 inches in thickness. In order to produce foil’s thin shape, the aluminum is rolled several times through metal rolls (work rolls) after it’s smelted and casted.

Both beverage cans and foil are made from aluminum alloys; however, the production process is slightly different to achieve the desired shape and thickness. The end result in each case is a durable product that is infinitely recyclable — and an ideal example of a material that, when recycled properly, gives back to the environment.

From my perspective, one of the companies responsible for the aluminum we use is really doing things right. Alcoa is the world's leading producer of this sustainable metal and is at the forefront of efforts to increase aluminum recycling both across the US and around the world. In early 2008, Alcoa announced an aggressive goal to raise the US used beverage can recycling rate to 75% by 2015 and since then, they have distributed more than 100,000 recycling bins, with plans for 50,000 more, launched the Aluminate recycling app and, in the last five years, invested nearly \$3.5 million in community recycling programs through Alcoa Foundation.

When you consider that achieving a 75% can recycling rate would save enough energy to power almost 300,000 average American homes for a full year, that's a remarkable effort.

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