

A PLASTIC PLANET

5. SOURCE MATERIAL: ALUMINIUM

Aluminium made its debut in 1958 when two beer companies launched their beverages in aluminium cans. Coca-Cola and Pepsi followed in 1967.⁶ And today, aluminium's value as an infinitely recyclable, and recycled material, remains: 75% of all aluminium ever produced since 1888 is still in current use. On average, it takes just 60 days to manufacture one aluminium can, fill it up with a beverage, deliver it to a store, sell it to a customer, recycle it, and make a new can from it.

ALUMINIUM CANS & CONTAINERS



STARTING LIFE

Aluminium starts life as a reddish rock called Bauxite containing aluminium oxide (Al_2O_3), also known as alumina. Mainly mined in Australia, West Africa and the West Indies, the rock is heated to very high temperatures and the oxide is extracted using chemicals and electrical currents. 180 billion aluminium beverage cans are produced globally every year with 40% of the global production capacity in the US, followed by Japan, Brazil and China.

WORKING LIFE

Beverage cans are the most familiar product packaged in Aluminium. In Germany an astounding 95% of all beverages are contained in aluminium cans.⁹ Less well known aluminium packaging comes in the form of sardine and tuna cans.

Aluminium may also be on the verge of a renaissance. Imagine if you could achieve the portability, recyclability, and freshness of a can, but without giving up the benefits of a bottle? Alumni-Tek® bottles are a 16-ounce high-quality, aluminum bottle with a widemouth and re-sealable lid; you can sip, close the cap, and refill with coffee, protein shakes, or water.

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EPOXY RESINS

-Since the 1950s, epoxy-based resins became the most commonly used class of coatings for both aluminum and steel cans to protect them from corrosion. In 2013, their market share was estimated to be 95%.

-The most common epoxy coatings are synthesized from bisphenol A (BPA) and epichlorohydrin, forming bisphenol A-diglycidyl ether epoxy resins.

-In 2015, the use of bisphenol A (BPA)-based coatings in food and beverage cans was banned in France (LOI n° 2010-729).

-In 2016, the U.S. food companies Del Monte and Campbell announced the phase-out of BPA-based coatings by 2016 and 2017 at the latest, respectively.

ENDING LIFE

Aluminium cans be recycled indefinitely – into new cans - without any deterioration in their quality. After an initial energy-intensive extraction process, > 50% of the Al cans that exist today will be recycled making them one of the most recyclable containers: more than 113,000 cans are recycled every minute in the world.

-Recycled cans require 95% less energy than cans made of primary bauxite.¹² The energy saved by recycling Al cans is equivalent to 20 million barrels of oil or 12 billion kWh of electricity each year. Recycling 1kg of Al saves 6kg of bauxite from being mined and 4kg of chemicals.

-The average Al can contains 68% total recycled content.

-Cans are among the lightest containers lowering transport costs and Co2 emissions.

-The Al can is the only packaging that more than covers its recycling cost.

WEBSITES

<http://www.ball.com>

<http://packaging.world-aluminium.org/home/>