



LINDA ABLITT

# ALUMINIUM

Element Symbol: **Al**

Atomic Number: **13**

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Discoverer: Hans Christian Oersted (1825, Denmark)

Although aluminium is the most abundant metal in the Earth's crust, its discovery was relatively recent, and widespread use by humans even more recent (indeed, it was not until 1886 that an effective method of extraction of aluminium from ore was discovered). Today, aluminium is one of the most useful of metals. It is light, malleable, resists corrosion, conducts heat and electricity well, and reflects heat and visible light well. It is the second most malleable of the metals, after lead. It is widely used in construction (from aeroplanes to window frames), food storage and preparation (e.g. soft-drink cans and cooking pots), consumer appliances and scientific instruments.

Aluminium is mined in the form of bauxite, smelted to produce alumina (a white powder), and then processed through a highly energy-intensive process of electrolysis to metallic form. Recycling aluminium uses only 5% of the energy required for electrolysis, and greatly cuts down on greenhouse gas emission compared with extracting aluminium anew from ore. Australia is a major exporter of alumina, producing 30% of the world's alumina. The industry is worth over \$6 billion per annum to Australia's economy.

The Parker Cooperative Research Centre (CRC) for Integrated Hydrometallurgy Solutions is at the forefront of research to increase the productivity, efficiency, and environmental performance of alumina production. Key players in the CRC include CSIRO's Hydrometallurgy Alumina Program, led by Dr Chris Vernon, Curtin University of Technology, Murdoch University and the University of Queensland. The CSIRO Light Metals National Research Flagship and the Parker Cooperative Research Centre work in collaboration with the major industry players in alumina production.

*Provided by the element sponsor Barbara Robson*

## ARTISTS DESCRIPTION

When we think of aluminium these days the first thing that comes into our minds is sure to be soft drink cans. I have taken a photo of a display of drink cans in a shop and converted this to a highly contrasting black and white woodcut print.

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