

Metals

- Metals can be recycled indefinitely without losing any of their properties.
- Metal cans make up around 3% of the average household rubbish bag in Canterbury; these could be recycled.

Aluminium

- Aluminium is the third most abundant element in the earth's crust and is the earth's second most used metal.
- Aluminium is only found as a compound called alumina, which is a hard material consisting of aluminium combined with oxygen.
- To free the aluminium this compound has to be stripped of its oxygen. This is done by dissolving it in a molten salt and running a powerful electric current through the liquid. This process uses large quantities of energy.
- Recycling aluminium requires only 5% of the energy needed to make new aluminium, and produces only 5% of the CO₂ emissions.
- Recycling 1kg of aluminium (compared to making 1kg from alumina ore) saves up to 6kg of ore, 4kg of chemical products and 14kWh of electricity - enough energy to run a TV set for three hours
- The aluminium drink can is the world's most recycled packaging container - worldwide over 50% of aluminium cans are recycled.
- Aluminium cans are generally recycled into new aluminium cans but it can also be recycled into food and pharmaceutical packaging
- Aluminium can be recycled indefinitely, as reprocessing does not damage its structure. Aluminium is also the most cost-effective material to recycle.

How Aluminium is Recycled:

1. Shredding: Mechanical hammers shred the flattened cans into small pieces
2. Decoating: Decoration is removed by blowing hot air (500⁰ C) through the shreds
3. Melting: The shreds are melted in a furnace heated to 750⁰ C
4. Casting: The molten metal flows into moulds and is cooled by jets of water. As it cools and the metal hardens and an 'ingot' is formed
5. The ingots are pre-heated to 600⁰ C and undergo their first rolling. They are then 'cold rolled' to the exact specification and thickness required by the can maker.
6. The aluminium sheet is lubricated and fed through a cupping press. This cuts thousands of shallow cups. The sides of the cups are raised to form the can shape by being rammed through a series of rings. The can is trimmed and washed ready for decorating
7. The inside and outside of the can is treated with a lacquer. This forms the base coat for the external decoration and prevents the contents reacting with the metal inside
8. After the decoration has been applied the cans are dried in an oven and then passed through a necker/flanger to prepare them to take the can end
9. Cans are cleaned using high pressure air and water. Then the air is extracted and at the same time the can is filled with carbon dioxide gas (CO₂). The liquid contents are then added and the can ends are attached and mechanically sealed
10. Used beverage cans are normally back on supermarket shelves as new beverage cans in 6-8 weeks.

Information from:

<http://www.world-aluminium.org/environment/recycling/>

www.wasteonline.org.uk

<http://www.recycle-more.co.uk/nav/page524.aspx>