



## Steel

### Did You Know?

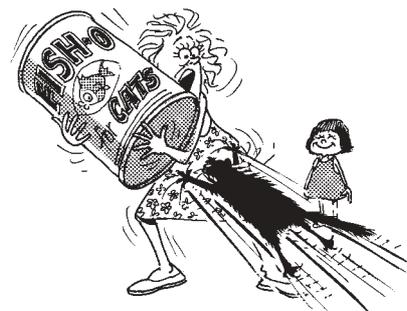
- 30% of steel cans are recycled in Western Australia (BHP, 2000).
- Australians have recycled 600 million steel cans.
- Each Australian throws away 7 kg of small steel products and steel cans a year.
- Steel can be recycled again and again without reducing the quality of the end product.
- Making new steel from recycled cans uses 75% less energy than making steel from raw materials – cutting down Greenhouse gas emissions and saving raw materials such as iron ore and coal.
- Steel is the most commonly recycled material throughout the world.
- Today's steel cans weigh 40% less than they did 30 years ago.
- Every tonne of steel recycled saves 1.5 tonnes of iron ore, 0.5 tonnes of coal and 40% of the water it takes to make to make a tonne of new steel.
- 425 million tonnes of steel was recycled globally in 2000.
- All steel cans made in Australia contain 25-40% recycled steel.
- Steel cans can be recycled into railways tracks and car parts as well as new cans.

### About Steel

Since the invention of steel cans in England in 1810, they have become a common way to preserve and store food and other materials. Production of cans increased in the late nineteenth century when machines for making cans were developed. Every home and many businesses use examples of steel packaging that can be recycled.

Steel cans are made from iron ore, coke and limestone which are heated in a blast furnace until molten. The molten metal is cast into slabs and rolled into coils. The coils are cleaned and then cold rolled into gauges that are suitable for applying a thin layer of tin via electrolysis. The end product, called "tin plate" is what steel cans are made from. The tin protects steel from corrosion (or rust).

Western Australians used 5000 tonnes of steel cans in 1999. Less than 20% were recycled. 4000 tonnes of steel cans were dumped in our rubbish tips (that's over 60 million steel cans going to waste).





## Being Waste Wise with Steel Cans

Steel cans require minerals that are mined from the earth. To reduce the need for mining as well as saving energy and landfill space, it is important to be waste wise with steel cans. There are three waste wise steps to follow:

### Reduce

Common products found in cans are fruit and vegetables, baked beans and spaghetti, pet food or tuna. One way to reduce the amount of steel used is to buy the most appropriate size can. Instead of buying small tins, for example a tin per meal/snack, buy larger tins that will last two or three meals. Any that aren't used the first day can be stored in a reusable container.

Paint cans are also made of steel. Whenever you buy paint to do a household job, buy only as much paint as you need. Use up as much of the paint as possible on the original job. Once the excess paint has been tipped onto newspaper to dry, the tin can be recycled.



### Reuse

Steel cans can be reused for a number of different purposes:

- Storage of small items such as nuts and bolts.
- Decorating the tin and using it for storage, for example to hold pens.
- Use as a scoop for animal feed, in the garden etc.

### Recycle

Steel is fully recyclable and is the most recycled product in the world. This is true for steel used in your home and in industry. In fact steel scrap – like steel cans, old paint cans and discarded whitegoods – are a necessary component in the steel making process.

Steel cans that are accepted for recycling include food and pet food cans, coffee, oil, paint and aerosol cans, bottle tops and jam jar lids. Most councils will accept steel cans for recycling in kerbside collections; remove any plastic caps first. If recycling paint cans, make sure the cans are emptied and their lids are off. Cans with paint left in them are a nuisance to collectors and processors. It is also important not to squash aerosols cans. Check with your local council about recycling in your area.

#### How to prepare steel cans for recycling

1. Remove the lid completely.
2. Rinse the can.
3. Place the lids inside the can (place steel bottle tops and jam jar lids inside as well).
4. Press the can flat near the top of the can to save space.
5. Place the cans out for collection.



Reduce, Reuse, Recycle



### The Recycling Process

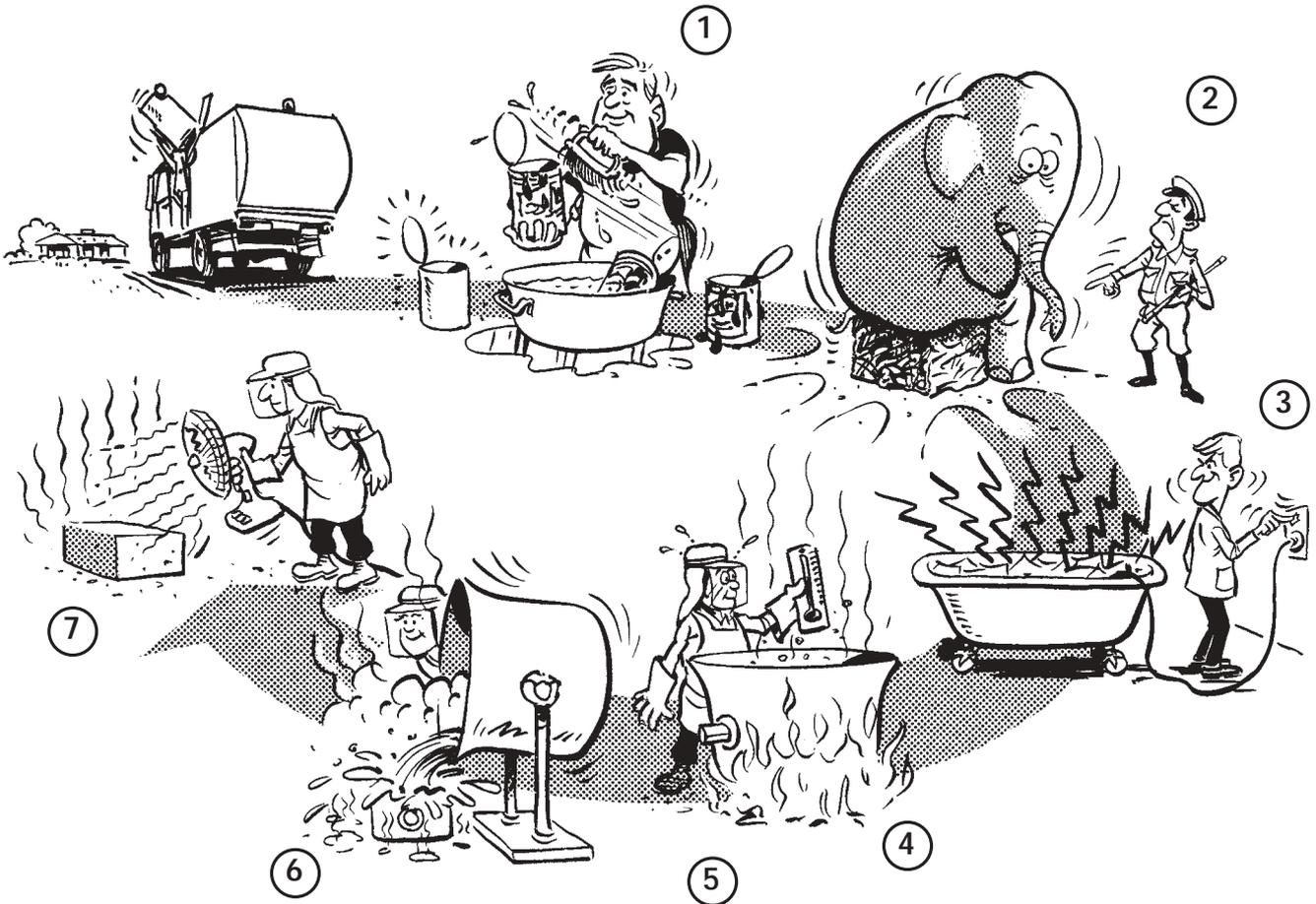
1. The steel is sorted and cleaned of food particles and labels.
2. It is compacted into bales for detinning.
3. They are detinned by immersing the sheets of steel in an alkaline bath and transmitting an electric current through them.
4. The steel is heated to 1700oC with virgin materials.
5. The molten cast iron is tipped into a Basic Oxygen Steel unit to remove carbon.
6. The steel is poured out and substances are added to give specific properties to it.
7. The steel is cooled as slabs then shaped as necessary.

### Resources:

Planet Ark/BHP. *Steel Recycling Kit*.

### Useful Websites:

- [www.steelcans.com.au](http://www.steelcans.com.au)
- [www.recycle-steel.org](http://www.recycle-steel.org)



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## The Waste Wise WA Program

There are a number of programs working towards educating the community to minimise waste.

These projects are funded by the Waste Management and Recycling Fund from money collected as a Waste Levy whenever garbage is delivered to landfill.



### Waste Wise WA display trailer

The trailer is a mobile interactive display about waste and recycling available for schools, community groups, expos and shows. A Waste Education Officer will staff the display to answer questions and provide Fact Sheets.

### Waste Wise WA Website: [www.wastewise.wa.gov.au](http://www.wastewise.wa.gov.au)

This website contains comprehensive information about issues relating to waste minimisation in Western Australia. It includes information on the 3Rs; organic waste; landfill; the school program; regional waste and workplace waste reduction. The complete series of Fact Sheets are also available to download.

### Waste Wise WA Youth Grants

The Youth Grants provide opportunities for youth community groups to undertake waste minimisation projects in their local area. Grants of up to \$5,000 are available, with applications assessed monthly.

### Waste Wise Schools Program

This program empowers schools to minimise their waste outputs and incorporate waste issues into the curriculum. The program provides teacher workshops, the Waste Wise Schools Kit, a network of Support Schools, Accreditation and Awards programs and ongoing support.

### Earthcarers

The Earthcarers project is directed at a Regional Council level. It trains, guides and supports community volunteers to foster domestic waste minimisation behaviours. The program involves all levels of the community working together.

### Contact

For further information about any of these projects, contact the Waste Wise WA officers at the Department of Environmental Protection.

Phone: 08 9222 7000 or 08 9278 0300.

Email: [wastewise@environ.wa.gov.au](mailto:wastewise@environ.wa.gov.au)



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