



# Glass

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**However minute amounts of some materials mixed in with the glass can cause contamination. So it is important to know what types of glass can and can't be recycled.**

## Did you know?

- Glass was discovered more than 5,000 years ago.
- Glass takes one million years to break down naturally.
- Recycling a glass jar saves enough energy to light a bulb for four hours.
- At current rates of waste disposal, it is expected that NSW will reach its present landfill capacity by 2007.<sup>4</sup>
- Glass accounts for 12% of the rubbish collected on Clean Up Australia Day.
- In Switzerland, 91% of manufactured glass is recovered for recycling. This is currently the world's best glass recycling practice.<sup>1</sup>
- Recent testing by the CSIRO has shown that cullet (a recycled, crushed glass product) can now be used successfully as a sand substitute in concrete.<sup>6</sup>
- In 1998, the recycling rate for glass for Australia was 44%.<sup>5</sup>

## Glass recycling

Glass can be recycled forever. The same glass can be recycled a million times over to produce bottles and jars of the same high quality every time.

However, to keep producing the best end product the recycled materials must be a high quality. Minute amounts of some materials mixed in with the glass for recycling can cause contamination. Contamination of as little as five grams per tonne (equivalent to a 10 cent coin) can result in valuable glass going to landfill.

### What can be recycled?

#### Yes

- Clear, green or brown bottles - including wine, beer, juice, soft drink and sauce bottles
- Glass jars - such as those from jams and spreads

#### No

- Ceramic plates, cups and crockery - such as pyrex and corning ware
- China
- Light globes
- Mirrors or window glass
- Medical or laboratory glass
- Broken drinking glasses

Check with your council for details on glass recycling in your area.

Remember, all glass for recycling should be rinsed and have lids removed. Leaving the label on is OK.

## What is glass made of?

In its original form, glass comes from three main virgin materials: sand, silica and limestone. Most glass manufactured in Australia does not use 100% raw materials. Instead, a percentage of recycled glass is utilised in the manufacturing process.

## How is glass made?

All of the virgin or recycled materials are melted in a furnace at a heat of about 1500 degrees Celsius. The ingredients are melted into a liquid, or molten form that is then dropped into a mould. Air blowing into the mould creates the shape of a bottle or jar. Once cooled, the bottles and jars are ready to be filled.

## How does recycling glass save energy?

The glass recycling process produces a crushed glass product called 'cullet'. Cullet is often mixed with virgin glass materials to produce new end products.<sup>1</sup>

Making new glass from recycled cullet saves energy because recycled glass melts at a lower temperature than virgin raw materials. Because the materials do not need to be heated as much, less energy is required in the manufacturing process.

*Clean Up - inspiring and working with all Australians to clean up, fix up and conserve our environment.*

# Benefits of Recycling

*By making products from recycled materials instead of virgin materials, we conserve land, reduce energy use and lessen the need to drill for oil and dig for minerals.*

## What are the benefits of recycling?

Recycling is the process by which waste materials are diverted from the waste stream. The products are sorted and used to produce new materials.

There are environmental, economic and social advantages to recycling. These advantages include:

- Conserving valuable natural resources and raw materials used in industry. By making products from recycled materials instead of virgin materials, we conserve land and reduce the need to drill for oil and dig for minerals.
- Generating civic pride and environmental awareness.
- Glass in particular, can be recycled an infinite number of times without loss any loss of quality.
- Preventing environmental pollution. In most cases, making products from recycled materials creates less air pollution and water pollution than making products from virgin materials.
- Saving energy reduces acid rain, global warming and air pollution. Making products from recycled ingredients often uses much less energy than producing the same product from raw materials.
- Saving landfill space. When the materials that you recycle are used to make new products, they don't go into landfills, so landfill space is conserved.<sup>3</sup>

## Minimising greenhouse gases

When oil, gas and coal are used in the production process they emit dangerous greenhouse gases. Every recycled item saves energy that would normally be used in mining, harvesting, manufacturing and transporting. For example, making glass from recycled material requires only 40% of the energy necessary to make glass from sand.<sup>1</sup>

Landfills also generate toxic emissions such as carbon dioxide and methane. These greenhouse gases contribute to worldwide climate change. Scientists predict that climate change will impact on all our lives, especially in the areas of agriculture and human health.

## Saving landfill space

Recyclable material makes up almost 80% of total household waste in Australia, so every item recycled is one less to be buried in our rapidly filling landfills.<sup>1</sup> What's more - glass takes one million years to break down naturally. This means that every piece of glass that has ever been sent to landfill is still sitting there – taking up valuable space.

## Conserving natural resources

Each glass bottle recycled keeps valuable non-renewable resources such as bauxite, iron-ore and sand in the ground.<sup>1</sup>

Because recycled glass takes less energy to manufacture than producing glass from virgin materials, finite natural resources such as oil and coal are also conserved.



## References

- <sup>1</sup> **VISY Recycling**  
[www.visyrecycling.com.au](http://www.visyrecycling.com.au)
- <sup>2</sup> **EcoRecycle, Victoria**  
[www.ecorecycle.vic.gov.au](http://www.ecorecycle.vic.gov.au)
- <sup>3</sup> **Environmental Systems of America**  
[www.envirosystemsinc.com](http://www.envirosystemsinc.com)
- <sup>4</sup> **NSW Department of Environment and Conservation**  
[www.epa.nsw.gov.au](http://www.epa.nsw.gov.au)
- <sup>5</sup> **ACI Glass Packaging**  
[www.acipackaging.com](http://www.acipackaging.com)
- <sup>6</sup> **CSIRO Manufacturing and Infrastructure Technology**  
[www.cmit.csiro.au/innovation/2002-04/glass.htm](http://www.cmit.csiro.au/innovation/2002-04/glass.htm)



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