

# THE STORY OF GLASS

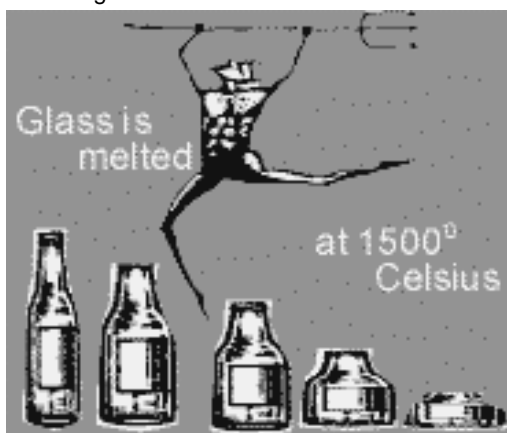
The discovery of glass dates back to the Phoenicians, more than 5000 years ago. The Egyptians are believed to have invented the method of hand blowing glass bottles in the First Century B.C. For 2000 years hand blowing glass bottles was the principal way of making glass containers, however during the last hundred years or so mechanised glass blowing techniques have revolutionised production, allowing glass bottles and jars to be made quickly and cheaply. Today glass containers are widely used to package a wide variety of foods and drinks.



## Making Glass

The three raw materials required to make glass are sand (to provide silica), soda ash (to reduce the melting point) and limestone (to give it hardness and a smooth texture). Crushed recycled glass or cullet is now the major raw material for glass manufacturing in Australia.

To make glass containers the mix of ingredients (known as a batch) is fed continuously into furnaces and melted at about 1500 degrees Celsius.



Globules of molten glass are dropped into moulds where air is blown into the middle to form the hollow bottle shape. The new containers are cooled slowly and sent to drink factories for filling.

## Recycling Glass

Bottles and jars collected from your recycling bin are sorted by hand. Clear and coloured glass is separated and taken to a beneficiation plant for more careful sorting before it is put into the furnace to be made into new bottles. This extra sorting is necessary because any contamination of the cullet can cause recycled bottles to be faulty and therefore dangerous. China, bone, stone, ovenproof glass and other materials won't melt down like glass does so

even the smallest piece can end up as a chip in a bottle and cause it to explode when it is filled or when you open it to have a drink.

ACI Glass Packaging makes bottles from up to 100% recycled cullet, however they say the percentage they use depends upon the quality and quantity of cullet available. In Australia today the average amount of cullet used is about 45% per batch.



There are energy savings from using cullet in glass manufacture but this depends on the amount of cullet used. It certainly saves resources - each tonne of cullet saves 1.1 tonnes of raw materials!

Another way to save resources in glass making is to make the bottles lightweight. ACI Glass Packaging has reduced the material used in their stubbies by 29% since 1986 simply by making them lighter. Once about 260g, a stubby now weighs just 185g and still holds the same amount of liquid.

## PACKAGING GLASS ONLY in your recycling bin please.

That means any glass bottle or jar that came with food or drink in it.

### What kind of glass is recyclable?

Packaging glass - that is all glass bottles and jars no matter what colour, shape, texture or size. clear, green, amber (brown), blue, yellow....

And no matter what was in them. soft drink, tomato sauce, OJ, pickled onions, jam, vegemite...

(Take off the lids and give them a quick rinse.)

### What kind of glass CANNOT be Recycled?

- Window glass
- Windscreen glass
- Heatproof glass (from ovenware and microwave trays, Pyrex dishes, beakers and test tubes)
- Spectacles and sunglasses
- Drinking glasses
- Light bulbs
- Any bottles that you can't see through (Malibu bottles etc.)

