

# LOOKING (AT) GLASS

The glass of milk that you gulp down everyday...do you know how it gets to the dining table? I mean the glass...not the milk. Glass has a transparent, almost invisible presence in our lives. We look through it, we drink from it and it mirrors us.

Clear, chemically inert, non-reactive and hardwearing. These qualities make glass one of the most used materials. Beverages, jam and chemicals all are packaged in glass bottles. What goes into making one...

**Melting:** A furnace melts sand, soda ash, limestone and cullet (crushed, recycled glass) at temperatures of 1260° C-1538° C.

**Conditioning:** Forehearth brings glass to a uniform temperature and it is cut into segments of molten glass called **gobs**.

Glass was used as early as 4000 BC in the Middle East as a glaze to decorate beads. The earliest known clear glass is a vase found in Nineveh in Assyria, dating around 800 BC.

Finished glass containers are used to package products. When thrown away they can be recycled. Glass can be recycled indefinitely.

**Forming:** Gobs are forced into a shape and temperatures drop below 1,149° C. The cooling plate cools containers rapidly to below 482° C.

**Inspection:** Fast Cooling machine brings temperatures down to 37.7° C. Defective containers are sent back into the furnace.

**Annealing:** Formed containers are placed in a machine where temperature is raised close to melting point and reduced below 482° C. The process strengthens containers.

**Molding:** At the bottle machine a hollow is created in the gob. The hollow gob is called **parison**. Air is blown into the parison to bring it to the final shape.

## Glass or plastic ?



Glass is used extensively for packaging but plastics are giving it tough competition. Glass is 100 per cent recyclable and the entire amount can be recycled without diminishing quality. But recycling needs extensive sorting and cleaning. Also, glass production consumes a lot of energy. The furnaces use LPG, natural gas and sometimes electricity and release harmful gases like nitrogen and sulphur oxide. The vaporisation and crystallisation process give off fine particulates of lead and arsenic. Recycling glass, however, reduces consumption of raw materials and energy to a great extent.

Recycling 2 bottles saves enough energy to boil water for 5 cups of tea.