Y8 Graphics: Plastics

Thermoplastics

These plastics can be re-heated and therefore shaped in various ways. They become mouldable after reheating as they do not undergo significant chemical change. Reheating and shaping can be repeated. The bond between the molecules is weak and become weaker when reheated, allowing reshaping. Thermoplastics tend to be composed of 'long chain monomers'. These types of plastics can be recycled.

These plastics possess a common property, they soften when heated and are often used in schools to vacuum form shapes. Usually, when heated and formed into a shape - if reheated they return to their original shape.

Common Thermoplastics

Acrylic. This is the most common plastic in a school workshop. It is purchased usually in the form of sheets and comes in a range of colours. It can be translucent (e.g. smoked), transparent or opaque. It is resistant to most acids and weather conditions.

Polystyrene. Can be moulded into almost any form due to its excellent moulding qualities. Used for the production of bottles, bowls, toys, tube etc... It is available in large sheets. There are two types: High density which is rigid and hard, and low density which is tough and flexible. Machine parts are generally made from high density polystyrene whilst bottles are made from the low density polystyrene.

Polyvinyl Chloride. Better known as PVC. It is a tough material which can be purchased as a hard material or alternatively a flexible form. It can be welded or bonded with an adhesive. It has a range of uses including water pipes, raincoats, long play records, coating on electrical wires and many more.

Thermosetting Plastics

Once 'set' these plastics cannot be reheated to soften, shape and mould. The molecules of these plastics are cross linked in three dimensions and this is why they cannot be reshaped or recycled. The bond between the molecules is very strong.

http://www.technologystudent.com/designpro/plastic1.htm