

REVISION CARDS - THERMOPLASTICS

V. Ryan © 2013

PDF FILE - [CLICK HERE FOR PRINTABLE WORKSHEET](#)

THERMOSETTING PLASTICS

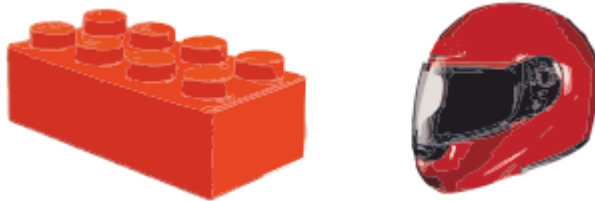


THERMOPLASTICS



WHAT ARE THERMOPLASTICS ?

Thermoplastics can be re-heated and re-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 polymer chains is weak and becomes weaker when reheated, allowing reshaping. These types of plastics can be recycled.



THERMOPLASTIC

Acrylic. (Known also as PMMA)
This is the most common thermoplastic used in a school workshop. Purchased in the form of sheets and comes in a wide range of colours. It can be translucent (like smoked), transparent or completely clear. It is resistant to most acids and alkalis under normal conditions. Easy to cut and shape with hand tools.

Baths, safety glasses



THERMOPLASTICS 2

LDPE - Low Density Polythene is tough and flexible. Softer than HDPE.

Can be moulded into almost any form. Flexible, comes in range of colours. Bottles and plastic bags are made from the low density polythene.



THERMOPLASTIC

HDPE - High Density Polyethylene is a thermoplastic which is rigid and hard. It is stronger than LDPE.

Machine parts, bowls and pipes are generally made from high density polyethylene.

Can be moulded into almost any form. Flexible, comes in range of colours.



THERMOPLASTICS 4

polypropylene (PP) is a thermoplastic often formed into products through injection and blow moulding. It is robust, strong, flexible and supplied in a range of colours. Food containers, chairs, packaging and storage units.



THERMOPLASTICS 5

Polyvinyl Chloride. Better known as PVC. A tough material, produced either a hard (inflexible) or soft (flexible) form. Can be extruded, welded or bonded with adhesive. Range of uses including water pipes, raincoats, floor tiles, records, coating on electrical cables and packaging.



THERMOPLASTICS 6

Nylon is used in engineering to make gears and bearings. It's oily nature means that friction is reduced between moving parts made from nylon.

Gears, bearings, wheels and clothing.



THERMOPLASTICS 7

High Impact Polystyrene. Light material and yet very strong. Available in a range of colours and can be vacuum formed. Thin sheets are quite flexible.

Used for electrical casings, trays, and packaging.



QUESTIONS

Complete the paragraph on thermoplastics, by adding the missing words.

re-shaped - reheating - chemical - becomes weaker - recycled

Plastics can be re-heated and _____ in various ways. They become mouldable after _____ as they do not undergo chemical change. Reheating and shaping can be repeated. The bond between the molecules is weak and _____ when reheated. These types of plastics can be _____.

Polystyrene, also known as perspex is used widely in schools. Why is this?

What is the difference between LDPE Low Density Polythene and HDPE High Density Polythene?

What is the name of the main industrial process, through which Polypropylene (PP) is processed into products?

Name three products that are often manufactured from Polypropylene (PP).

What is the full name of the material also called PVC.

List three of the physical properties of PVC

What is Nylon often used in engineering?

What is the full name of HIPS and name one product manufactured from HIPS
