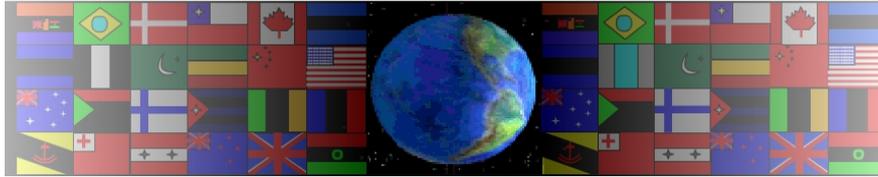


REVISION CARDS - POLYURETHANE AND FOAM RUBBER

V.Ryan © 2000 - 2015

On behalf of The World Association of Technology Teachers

W.A.T.T.



World Association of Technology Teachers

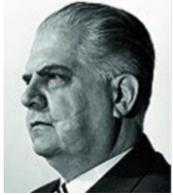
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REVISION CARDS - POLYURETHANE AND FOAM RUBBER

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DISCOVERY OF POLYURETHANE



In 1937, Otto Bayer mixed two chemicals, polyol (an alcohol) and isocyanate (sometimes called isonitrile or carbamate).

The two chemicals formed a solid plastic. The resulting plastic was polyurethane (PUR), a new plastic.

PROPERTIES OF POLYURETHANE:

Can be either thermoplastics or thermosetting. Can be cast and injection moulded. Long lasting. Performs well in high temperatures, but can be damaged / attacked by most solvents. Has low heat transfer / conductivity, consequently a good insulator. Has high resistance to abrasion. It can be manufactured in a range of colours.

FOAM RUBBER

When mixing two chemicals, polyol (an alcohol) and isocyanate (sometimes called isonitrile or carbamate) with the addition of a small amount of water, the solution 'fizzes', forming foam rubber.

PROPERTIES OF FOAM RUBBER:

Lightweight and flexible. Ideal of cushions or as a dense rigid material ideal for the trays. Resists impacts and is often used as protective packaging inserts. An excellent acoustic insulator, as it absorbs sound. Resists high temperatures (200°C) and consequently can be used to reduce sound from car engines. Performs well in high temperatures. Can be damaged / attacked by most solvents. It has low heat transfer / conductivity, consequently a good insulator.

POLYURETHANE PRODUCTS



POLYURETHANE COATED GLOVES

WELLINGTONS

WHEELS

FOAM RUBBER PRODUCTS



PILLOWS AND CUSHIONS

PROTECTIVE PACKAGING INSERT

SOFT TOYS



1. Name the two materials discovered / invented in 1937 by Otto Bayer? *2 marks*

2. List three products manufactured from Polyurethane and three manufactured from Foam Rubber. *6 marks*

3. Describe three physical properties possessed by Foam Rubber. *3 marks*

