

SAFE AND CLEAN TO MANUFACTURE, AND A BIG DOLLAR EARNER FOR AUSTRALIA.

Q *What is Polystyrene?*

A Polystyrene is a high molecular weight polymer which is composed of hydrogen and carbon atoms, and is used to mould plastic articles.

Polystyrene is found in a wide range of products in the home, including appliances, packaging and entertainment. Major applications are refrigerator components, washing machine panels, food packaging, cassettes, TVs, coat-hangers, bathroom-ware and single use kitchen-ware.

Q *How is Polystyrene made?*

A Polystyrene is manufactured by polymerising styrene monomer which is in turn produced from benzene and ethylene. Benzene is derived from:

- i) crude oil fractionation, or
- ii) waste product from making coke for steel manufacture. Ethylene is produced from ethane, a component of natural gas.

Production of polystyrene requires much less energy and generates less "greenhouse" gas than other common materials such as glass, paper and metals.



A MAJOR AUSTRALIAN PETROCHEMICAL EXPORT.

Q *Who are the Australian producers?*

A Styrene monomer and Polystyrene are both produced by Chemplex Australia Limited and Dow Chemical (Australia) Limited, at plants located in the western region of Melbourne. Chemplex is the largest local polystyrene manufacturer while Dow is the world's largest producer of polystyrene with plants in many countries.

Chemplex and Dow have combined capacity in excess of the local Australian market's needs and generate valuable export income.

In fact, for the past decade styrene monomer and polystyrene have been among Australia's most valuable petrochemical exports.

Expandable polystyrene beads (EPS) for polystyrene foam are produced by Chemplex and also by BASF Australia Ltd.

NO APPRECIABLE WASTE.

Q *What waste products are produced during the manufacture of Polystyrene?*

A Polystyrene manufacture is a relatively clean process.

Small volumes of liquid and gaseous

wastes are generated and these are treated within the plants. Waste polystyrene generated during production is reprocessed or sent to a recycler.

Q *How large is the Polystyrene market in Australia?*

A Approximately 50,000 tonnes of polystyrene are used in Australia annually.

Polystyrene is sold in three forms.

1. General purpose (GPPS) – A clear, brittle polymer. Uses include cassettes, housewares, refrigerator trays and medical dishes.

2. High Impact (HIPS) – A tough, opaque polymer modified with rubber. Uses include dairy product containers, washing machine panels, refrigerator components, and single use cups.

3. Foam – A lightweight polymer; uses include meat and vegetable trays, food produce boxes, hot drink cups, slab insulation.

THE MANY ADVANTAGES OF A MOST ENERGY- EFFICIENT PACKAGING MATERIAL.

Q *What are the benefits of Polystyrene?*

A Polystyrene has many advantages, which include:

■ **Lightweight:** reduces transport fuel

