Polystyrene

Did you know

Enough styrofoam cups are used in Australia each year to circle the world at least five times. [1]

Polystyrene is made from petroleum, a non-sustainable, heavily polluting and disappearing commodity. [(2)]

Polystyrene does not biodegrade. It crumbles into fragments that do not break down [(4)]

Food service polystyrene packaging is not recycled because it is not economically viable due to contamination. [(2)]

Polystyrene takes up more space in landfills than paper and eventually will re-enter the environment when landfills are breached by water or mechanical forces. [(4)]

Polystyrene is not currently collected though kerbside recycling in Australia.

The facts

Polystyrene products

Solid polystyrene is used to make disposable cutlery, yogurt and cottage cheese containers, cups, clear salad bar containers and video and audiocassette housings.

Schools, hospitals, nursing homes, supermarkets, restaurants and sports stadiums are among the many institutions and businesses that rely on polystyrene packaging.

Grocery stores use polystyrene in virtually all meat and poultry trays. In addition, polystyrene packaging can be found in egg cartons and a variety of produce packages, such as apple trays, mushroom tills, tomato containers, and strawberry and grape crates.

Polystyrene food service products are generally more economical to use than disposable paperboard products and reusable food service items.

The wholesale price of polystyrene disposable food service products is often approximately two to three times less than an equivalent disposable paper container, and four to five times less than a comparable reusable food service item when the costs of equipment, labour, water, electricity, and detergent costs are included. [(2)]

Recycling polystyrene

Non-food packaging is more cost-effective to recycle.
It can be made into refrigerator and appliance components, bathroom fittings, hard hats, kitchen storage containers, condiment and cosmetics packaging, cosmetics. Compact discs, cassette tapes, disposal cups and meat trays, toys, medical dishes, photographic spools, building insulation, surf boards, marker buoys, bean bag beads, insulation packaging and portable coolers can all be made from recycled polystyrene.

Polystyrene as rubbish

Consumer waste, the largest source of polystyrene rubbish is almost all disposed of in landfill. Only a limited range of products are currently being recycled, such as foam produce boxes and coat hangers. [(6)]

3.5% of all rubbish collected during Clean Up Australia Day 2003 was polystyrene.

- Pieces made up the bulk of items surveyed [33%] followed by fast food containers [23%] and polystyrene cups and plates [23%].
- Parks & waterways held the highest amount of polystyrene items per site at an average of 25, while shops and malls saw the lowest.
- Victoria had the highest total, followed by South Australia, then New South Wales and Queensland with a dramatic drop then to Tasmania, the Australian Capital Territory and Western Australia. [(3)]

Polystyrene

It's a global problem – a US case study

Though polystyrene manufacturers claim that their products are "ozone-friendly" or free of CFCs, this is only partially true.

Some polystyrene is now manufactured with HCFC-22, which, though less destructive than its chemical cousins, CFC-11 and CFC-12, is still a greenhouse gas and harmful to the ozone layer. In fact, according to a 1992 study by the Institute for Energy and Environmental Research, HCFCs are three to five times more destructive to the ozone layer than previously believed.

According to the US Foundation for Advancements in Science and Education, styrene, a component of polystyrene, leaches into food from polystyrene foodware.

Styrene has been found in 100 percent of human tissue samples and 100 percent of human nursing milk samples tested. There is evidence that styrene is a carcinogen and neurotoxin and it has also been linked to reproductive problems.

Styrene has also been linked to increased levels of chromosomal damage, abnormal pulmonary function and cancer in workers at polystyrene and styrene plants.

Manufacturing polystyrene is also a major producer of pollution. In 1986, the US EPA ranked the 20 chemicals whose production generated the most hazardous wasted.

Polystyrene was number five.

US polystyrene recycling programs are heavily subsidized by polystyrene manufacturers to improve the environmental image of their products.

Furthermore, polystyrene recycling is not "closed loop" - collected polystyrene cups are not remanufactured into cups, but into other products, such as packing filler and cafeteria trays.

This means that more resources will have to be used, and more pollution created, to produce more polystyrene cups.

A study by the Portland, Oregon, public school system concluded that switching the school system from polystyrene to reusable polycarbonate foodware would, over a five-year period, save 11 billion BTUs of energy.

It would prevent 248,000 pounds of solid waste and 60,000 pounds of airborne emissions.

It would increase water consumption by 10,600,000 gallons and produce 39,500 pounds of waterborne waste. The amount of water used, equivalent to the domestic consumption of 38 households, could be reduced with water-efficient washing machines.

Vermont developed an analysis of a hypothetical school serving 200 meals a day. The model demonstrated that, adding in all the costs of both options (i.e., buying a dishwasher and reusable plates versus continuously purchasing disposables), purchasing reusable dishes is the least expensive option. [5]

References

1. 50 Things We Can Do To Save the Planet – Barbara Lord

2. www.ecologycentre.org

3. Clean Up Australia Rubbish Report 2003

4. www.verdant.net

5. www.ejnet.org

6. Polystyrene Australia

n.b. References 2, 4 and 6 are all US based websites

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