


Issue Brief: Plastic

Overview:

Plastic is made primarily from oil and natural gas, two non-renewable fossil fuels. Producing plastic often requires toxic additives and can create considerable pollution and toxic waste. Using plastic may expose customers to potentially toxic chemicals. Not all plastics are recyclable, and only 5% of the plastic produced in the U.S. was recycled in 2005. Plastic disposed of in a landfill can take hundreds of years to break down, and may leach toxic chemicals into groundwater. Plastic disposed of through incineration may emit toxics to the air. Plastic debris also pollutes the world's oceans and threatens marine life. You have the ability to decrease the environmental footprint of plastic on your shelves by becoming familiar with the attributes of each type of plastic and encouraging suppliers to use plastics with high post-consumer recycled content, low production energy, and minimal toxic additives. If a plastic product can be recycled, encourage suppliers to label it clearly for consumers.

Know Your Plastics:

Type	Example products	ID Code: 	Recycling Rate*
PET(E)	2 liter bottle	1	25%
HDPE	Milk carton	2	11%
PVC	Shower curtain	3	0% (landfill)
LDPE	Grocery bags	4	6%
PP	Fabrics	5	1%
PS	Egg Carton	6	0% (landfill)
Other	Nylon	7	0% (landfill)
PLA	Corn-based	7	0% (compost/landfill)

* Source: EPA Municipal Solid Waste Report (2005)

Priority Concerns:

PVC Plastic: PVC plastic poses serious environmental concerns throughout its lifecycle.

- Toxic additives such as chlorine and lead are required to produce PVC
- Toxic pollution can be released during production and incineration of PVC
- Flexible applications of PVC use plasticizers including phthalates, which are suspected to pose risks to human development and reproductive systems.
- PVC is recycled at extremely low rates, and can hinder the successful recycling of other plastics if a PVC item is mistakenly melted down with other plastics (eg. PET) and contaminates the batch.

PLA and other biopolymers: PLA and other 'compostable' biopolymers are being advertised as 'green alternatives' to conventional plastics because they are made from 'renewable' plant material and can be composted at the end of their lifecycle. In fact, these *biopolymers may not be the best choice*, because they are usually disposed of in landfills (where they will not biodegrade), and are energy-intensive to produce (because they are made out of crops like corn that are grown using lots of non-renewable fuels).

What Can You Do?

Ask Questions:

- Ask which plastics your suppliers are using, and why those plastics are the best environmental choices.
- Ask what the percentage of post-consumer recycled content is in the plastic products you purchase.
- Ask suppliers 'Life Cycle Questions' (listed on back of this sheet).

What Now?

Prioritizing the biggest opportunities for environmental change and business benefits for each product line is challenging. Some important considerations regarding sustainability and product choices include:

- Does this choice significantly reduce the environmental impacts across the lifecycle of this product?
- Is there a business opportunity to generate increased cost savings and improve customer satisfaction?

Additional Resources:

- **Plastics Resource:** http://www.plasticsresource.com/s_plasticsresource/index.asp
- **EPA Plastic Information:** <http://www.epa.gov/garbage/plastic.htm>
- **American Chemistry Council:** http://www.americanchemistry.com/s_plastics/index.asp

Environmental Defense Fund is about solutions – And we're here to help! Please give us a call:
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Additional Life Cycle Sustainability Questions for Plastic Suppliers

Step 1: Product Design

- What type of plastic is being used?
- Is this plastic recyclable for consumers?
- Is this plastic designed to be durable?

Step 2: Raw Materials

- What additives and chemicals are required to make this plastic? Are safer alternatives available?
- Does this plastic contain phthalates or BPA (Bisphenol A)? These toxic additives are categorized as carcinogens (cancer causing) and developmental/reproductive toxins.
- How much energy and water is used in producing this plastic? Can these amounts be reduced?
- How is waste from raw materials managed, treated and disposed of?
- How are raw materials shipped, stored and handled to minimize environmental and health impacts?
- What are the risks associated with spills and other accidental releases? What is being done to prevent accidental spills and releases?

Step 3: Manufacturing

- How are chemicals used in production selected? What environmental considerations are made?
- What actions are being taken to prevent the release of elemental chlorine gas during production?
- How do the manufacturers monitor the discharge of both regulated and non-regulated pollutants?
- How are solid and hazardous wastes being managed?
- What technology is being used to minimize water and energy consumption at manufacturing facilities?
- What technology do the factories use that minimizes the discharge of pollutants?
- How much energy and water is required to manufacture this plastic relative to its substitutes?
- What externally audited environmental management systems are used? Are results made public?
- Are workers familiar with applicable environmental codes of conduct? (company or industry-wide)
- What efforts are being made to improve the energy efficiency of the manufacturing?

Step 4: Packaging and Distribution *(See Packaging Brief)*

- What action has been taken to reduce the volume of packaging of this product?
- Is the packaging made of post-consumer recycled materials?
- Can the package be reused? Can it be recycled? What is the recycling rate of the material?
- Is the packaging bio-degradable? What is the composting rate?
- What mode of transportation will be used? What is the distance of travel? (Air pollutes the most)
- Are there opportunities for local sourcing?

Step 5: Use, Reuse and Maintenance

- What are the risks to human health during exposure to the plastic being used?
- What are the risks to the environment from the normal use of the plastic being used?

Step 6: End of Life

- Is this plastic recyclable? Is it bio-degradable?
- How can the recycling rate of this product be increased?
- Is the product easy for consumers to disassemble and recycle?
- Does the product clearly display recycling information for consumers?