Safe Products
Made Safely

The goal of the Alliance for a Healthy Tomorrow is to have safer products in our stores, safe workplaces, clean air and water, and healthier communities. We, as a society, can take a critical step toward reaching that goal by using or developing safer alternatives to the toxic chemicals in use today.

▶ Common Sense: Substitute Safer Alternatives

Common sense tells us that whenever possible, we should use the safest alternative to meet a need. When we replace a toxic chemical with a safer alternative, the process of switching is called "substitution." When we find safer alternatives, we demonstrate that the current use of the toxic chemical is unnecessary. Rather than trying to predict and quantify the danger of a certain chemical, we can avoid and prevent health damage by using safer alternatives.

Here we illustrate that ***we can*** determine which products and processes are safer and preferable, and that many of these safer alternatives are already available.

Some replacements for toxic chemicals are easily available to the consumer. For example, we can buy wooden toys with non-toxic paints instead of vinyl toys with toxic additives, clothing without toxic stain resistant coatings, organically grown food, and readily available non-toxic household cleaners. However, with existing product regulations so lax, we, as consumers, do not have the information we need to shop responsibly and protect our families from toxic chemicals. The products we find in our stores should be as safe as possible and produced responsibly. We shouldn't have to choose between a high functioning, cost-effective product and our health and safety.

Assessing Alternatives

In some cases, a scientific, technical and economic assessment is needed to determine which alternatives to different uses of a toxic chemical do indeed pose less harm to our health and environment, and are also effective for their intended use.

One such "alternatives assessment" was recently completed in Massachusetts.[1] The Commonwealth of Massachusetts requested that the Toxics Use Reduction Institute (TURI at U-Mass Lowell) conduct a scientific study to assess safer alternatives for the following five toxic chemicals:

- **Lead**, a known brain toxicant and carcinogen
- **Formaldehyde**, a known carcinogen and respiratory irritant, also linked to reproductive disorders
- **Perchloroethylene (Perc)**, a probable carcinogen, can cause liver, kidney and nervous system damage and is also linked to impacts on the fetus
- **Hexavalent chromium**, a known human carcinogen also linked to a wide range of health effects
- **Di(2-ethylhexyl)phthalate (DEHP)**, a probable carcinogen, and a suspected endocrine disruptor with impacts on the developing male reproductive system.

TURI created an alternatives assessment methodology that was used to consistently evaluate the alternatives for each chemical. Each alternative was assessed relative to environmental and occupational health and safety impacts, technical feasibility, and financial feasibility.

In every application studied, at **least one alternative was identified** that was commercially available, likely to meet the technical requirements of some users, and likely to have reduced environmental and occupational health and safety impacts.[2] For example:

- **Perchloroethylene** used in dry cleaning could be replaced with several commercially available alternatives including a wet cleaning process appropriate for most types of clothing.
- **Hexavalent chromium** used in decorative electroplating of consumer and automotive products could be replaced with much less toxic trivalent chromium.
- **DEHP,** a phthalate, used in bags and tubing in medical devices for neonates could be replaced with alternative plasticizers and/or materials. Major manufacturers are in the process of introducing new lines of DEHP-free medical devices since many hospital chains are now specifying safer materials in their purchasing contracts.

TURI also assessed alternatives to the use of cancer-causing **formaldehyde** in the glues of particleboards used in construction. **They found other building materials that are safer effective alternatives, as well as an effective soy-based glue for particle board wood products**.

Columbia Forest Products, North America's largest producer of hardwood plywood and veneer, successfully put the substitution principle into practice. Despite its capital investment of $8 million to switch all its factories to less toxic glues made of soy flour, **Columbia has not needed to raise its prices to compensate for the change** because the soy glues are as inexpensive as formaldehyde glues.[3] This substitution benefits both Columbia's consumers and employees.

What TURI found was that assessing alternatives is not only less costly than assessing how problematic a substance can be, the process can also spur innovation in safer materials and products.

Businesses Develop Safer Alternatives

Businesses have developed or used safer alternatives to meet customer requirements, gain a competitive edge or meet other company goals.

Kaiser Permanente, (KP) the nation's largest non-profit health system – operating 431 medical office buildings and 37 medical centers in nine states – has launched a new purchasing policy that calls for the avoidance of the use of chemicals that cause cancer, birth defects, and reproductive system damage as well as chemicals that are persistent, or bioaccumulative. **Over the past ten years, they have replaced many products with safer alternatives**, including mercury-free thermometers, PVC-free medical and building products, latex-free examination gloves, greener cleaners and recyclable solvents.[4]

KP's decision to purchase safer carpeting for their medical facilities led to a partnership with a major carpet manufacturer to create a healthier carpet. The carpet firm, Collins & Aikman (C&A), based in Georgia, developed a new durable, low emission, PVC-free carpet with backing made primarily from post-consumer recycled plastic. The achievement earned C&A a sole source contract with Kaiser Permanente. In responding to KP's challenge, C&A thereby created a new carpet line for the firm and for other health care and institutional uses, trademarked "ethos."[5]

New Bio-based Fabric with Non-Toxic Finish

The creation of new bio-based materials provides another great example of business ability to innovate and create safer products. **Interface Fabrics Company**, headquartered in Atlanta, Georgia with factories in four states, created a new fabric for use in window treatments and office cubicle paneling. **The fibers of the new fabric, called Terratex PLA, originate from corn** processed via fermentation to produce a 100 percent bio-based polymer. Lifecycle studies show that the PLA polymer consumes less fossil fuels, uses less water, and emits fewer greenhouse gases compared to most conventional petrochemical-based polymers.[6] Terratex PLA also offers performance benefits comparable to and even exceeding petrochemical polymers. For example, it is naturally stain-resistant, exhibits superior fire-retardant properties and does not retain odors. To ensure that only benign dye and finish chemicals were used, Interface Fabric created a screening protocol that goes far beyond government requirements for protecting the environment and human health.

This new commercial fabric is not significantly more expensive than comparable recycled or virgin PET products. Interface did not develop Terratex PLA as a niche product, but one that could compete with comparable products on price.[7]

"If the chemicals that make plastics soft are endocrine disruptors, chemists now have the ability to design them without that side effect. It just takes convincing industry that the result is going to be cheaper in the long run," says Mary Ellen Weber, director of the EPA's pollutions and toxics research group. "When you can replace a known toxic chemical with sugar or cornstarch or sunlight, you know you've got an environmentally preferable product."[8] ■

Endnotes

1 Massachusetts Toxic Use Reduction Institute (TURI). (2006) Five Chemicals Alternative Assessment. *http://www.turi.org/content/content/view/full/2739/*

2 Alliance for a Healthy Tomorrow. (2006) New Study Serves as Call to Action on Toxic Chemical Dangers" Press Release. July 10, 2006.

3 Cone, Marla. (2006) "U.S. Rules Allow the Sale of Products Others Ban." *Los Angeles Times*. Oct. 8, 2006.

4 Liroff, R. (2005) Protecting Public Health, Increasing Profits, and Promoting Innovation. Corporate Environmental Strategy. January 2005. *www.rosefdn.org/liroffreport.pdf*

5 Greiner, T., Rossi, M., Thorpe, B., Kerr, B. Clean Production Action (2006) "Healthy Business Strategies Report" *http://www.cleanproduction.org/Green.Healthy.php*

6 Office of the Federal Environmental Executive (2006) Closing the Circle News. Fall 2006 *www.ofee.gov/ctc/ctcfal06.pdf*

7 Greiner, T., Rossi, M., Thorpe, B., Kerr, B. Clean Production Action (2006) "Healthy Business Strategies Report" *http://www.cleanproduction.org/Green.Healthy.php*

8 Weise, Elizabeth (2005). "Are our products our enemy?" *USA Today*. August 2, 2005

The Alliance for a
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www.healthytomorrow.org
617-338-8131

Safe Products Made Safely
The Scientific, Economic and Common Sense Arguments for Passing the Safer Alternatives Bill

This is number seven in a series of ten fact sheets.
To request copies of the other fact sheets or for more information, contact the Alliance for a Health Tomorrow, 617-338-8131, *info@healthytomorrow.org*.

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