

# THE DANGERS OF POLYVINYL CHLORIDE (PVC)



## ■ What is PVC & Why is it a Problem?

Polyvinyl chloride (PVC), or vinyl, is one of the most environmentally hazardous consumer materials ever produced. PVC is dangerous to human health throughout its entire life cycle of production, use, and disposal, mainly because so much chlorine is used in making it—roughly 30% of the world supply. When chlorine is used in industrial processes to make PVC plastic, or products made with PVC are burned as trash, a dangerous by-product called dioxin is formed. Dioxin is a known human carcinogen and the federal Environmental Protection Agency (EPA) lists the top sources of dioxin emissions as incinerators and backyard burn barrels. PVC is also dangerous while it is being used, because chemical ‘plasticizers’ added to make some plastics soft and flexible break down and are released during normal use. One example is that ‘new car smell’, which is actually the smell of toxic off gassing. The most common of these plasticizers, diethyl hexyl phthalate (DEHP), is a suspected carcinogen and is readily found in medical devices such as IV bags and tubing. These additives also can make PVC recycling impossible.

## ■ Where is PVC Found?

PVC is found in everyday products in our homes, hospitals, cars, and in toys and food and beverage packaging.

**Homes:** Approximately 75% of all PVC manufactured today is used in building materials, including water pipes that carry and store drinking water, window frames, and siding, flooring, wallpaper, window blinds and shower curtains. Studies have found people exposed to PVC in building interiors (such as vinyl flooring) had significantly elevated risks of asthma, wheezing and pneumonia. [HBN]

**Hospitals:** Health care products such as IV bags can leach DEHP into whatever liquids or medicines are in the bag. A scientific panel expressed “serious concerns” about the reproductive development of infants exposed to DEHP during hospital treatment. The Food and Drug Administration determined developing males are at a high risk of testicular damage from exposure to DEHP, and urged health care providers to take precautions to limit their exposure. Hospitals typically dispose of PVC products after just one use, sending them to a medical waste incinerator. These incinerators in turn release huge amounts of dioxin to the environment. [HCWH]

**Cars:** The interiors of most cars are constructed almost entirely of new PVC products, which continue to off-gas into this enclosed environment.

**Toys:** PVC toys also contain toxic plasticizers that leach, flake, or off-gas over time, increasing risks from asthma to cancer. Children that suck on PVC teething rings, pacifiers, or toys ingest chemicals that leach from the plastic and are known to cause damage to the brain, liver and kidneys.

**Food and Beverage Packaging:** Just as toxic plasticizers in IV bags can leach into the liquids they hold, they can also contaminate foods and beverages stored or served in plastic containers, which is an increasingly common practice in our society. In addition, when heated in a microwave or conventional oven, the plastic is even more likely to leach or off-gas these chemicals.

**BE SAFE: Take Precautionary Action  
To Eliminate PVC Products & Prevent Harm**

# BE SAFE's FOUR PRINCIPLES

## 1. HEED EARLY WARNING SIGNS

We know enough about the health effects of PVC and dioxin exposure to act now. The federal Center for Disease Control found children have the highest levels of DEHP in their bodies, which is a known developmental and reproductive toxin. [CDC] Dioxin causes a wide array of health problems in both animals and humans, and is a known human carcinogen. According to EPA, the levels of dioxin-like compounds found in the general population may cause a lifetime cancer risk as high as one in every 1,000 people, which is 1,000 times higher than EPA's generally "acceptable" risk level of one in a million people. Dioxin also can compromise the reproductive, developmental, immune, and endocrine systems in both animals and humans. In children, dioxin exposure has been associated with IQ deficits, delays in psychomotor and neurodevelopment, and altered behavior including hyperactivity. [NTP & IARC] (See *Dioxin* Brochure.)

## 2. PUT SAFETY FIRST

We must put safety first by eliminating PVC from consumer products and making safe consumer decisions. Organized consumer campaigns have successfully pressured companies to prioritize safety and stop using toxic materials. For instance, General Motors is leading the car industry in their commitment to phase out the use of PVC from car interiors by 2004, eliminating 30% of their PVC use. A national Clean Car Campaign encourages GM to continue its leadership in phasing out the other uses of PVC in its vehicles.

## 3. EXERCISE DEMOCRACY

In most cases safe, cost effective alternatives are available to replace PVC consumer products. If you belong to a community group, demand that your local government adopt a purchasing policy to stop buying PVC office products or building materials. Ask your religious institution, school, day care center or civic group to pass a similar resolution. Companies will not switch to non-PVC products without being forced to by consumer pressure or governmental regulations. Elected officials and decision makers need to enact and enforce strong policies that will protect the health of communities from the hazards of PVC and dioxin.

## 4. CHOOSE THE SAFEST SOLUTIONS

### ■ Buy PVC-Free Products.

Join smart consumers in avoiding PVC consumer products. For details on PVC toys, see the *Toy Report Card* at [www.greenpeaceusa.org](http://www.greenpeaceusa.org).

### ■ Choose Healthy Buildings.

Visit [www.healthybuildings.net](http://www.healthybuildings.net) to learn about non-PVC building alternatives, and take a virtual house tour to look for PVC and see *This Vinyl House* at [www.greenpeaceusa.org](http://www.greenpeaceusa.org).

### ■ Promote Non-PVC Purchasing Policies.

Propose a safe non-PVC purchasing policy to your local government or civic groups. For samples and tips, go to [www.safealternatives.org](http://www.safealternatives.org).

### ■ Take the "Clean Car Pledge".

Join thousands of people pledging an interest in purchasing cleaner and more environmentally sound vehicles at [www.cleancarcampaign.org](http://www.cleancarcampaign.org).

### ■ BE SAFE.

Take precautionary action to eliminate dioxin from our environment and prevent further harm. Sign on to the BE SAFE Platform on the next page. Be counted when we deliver this national Platform to the White House in 2005. Endorse the BE SAFE Platform today at [www.besafenet.com](http://www.besafenet.com)

### ■ Your Vote Counts.

The next election will set the country's course on environmental policies. For information on candidate's environmental voting records, contact [www.sierraclub.org](http://www.sierraclub.org) and [www.lcv.org](http://www.lcv.org). To register to vote, contact [www.earthday.net](http://www.earthday.net).

## Intimate Brands, Beauty Supply Co., Responds to 6,000 Consumers & Stops Using PVC

Greenpeace and the Center for Health, Environment & Justice (CHEJ) teamed up in 2001 to launch a consumer campaign against a major beauty supply company who distributed products packaged in PVC containers. The *Victoria's Dirty Little Secret* campaign successfully targeted Intimate Brands, the parent company of Victoria's Secret and Bath & Body Works, who agreed to phase out PVC containers from their product line by the end of 2003 after receiving 6,000 faxes, phone calls, and postcards in one month.

Organizers launched the campaign at an annual college Eco-Conference, distributed flyers and postcards, and posted an action alert allowing Website visitors to fax a letter or send a postcard directly to Intimate Brands. The company initially responded by sending defensive letters to the individuals that wrote to them. However, as more letters continued to come in, they took the demand more seriously. In February 2002, they met with representatives from CHEJ and Greenpeace and presented a plan to phase out the use of PVC bottles in both their Victoria's Secret and Bath & Body Work's line. PVC bottle production would stop by 2003 and by 2005 all PVC bottles would be out of circulation. The effectiveness of this campaign is a testimony to the positive changes that can be made when people come together and pressure companies to put safety first.

## References:

Healthy Building Network,[HBN] *PVC Fact Sheet*, 2003; Health Care Without Harm [HCWH] Website, 2003; Center for Disease Control, *National Report on Human Exposure to Environmental Chemicals*, 2003 [CDC]; National Toxicology Program *2002 Report on Carcinogens* [NTP]; and World Health Organization and US Department of Health & Human Services, IARC, *1997 IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*, Vol. 69, *Polychlorinated Dibenz<sub>o</sub>-para-Dioxins and Polychlorinated Dibenzofurans*, Lyon, France [IARC].

*Primary Contributor:* Monica Rohde-Buckhorn, Alliance for Safe Alternatives & the Center for Health, Environment & Justice.

# ***BE SAFE Platform***

*In the 21st century, we envision a world in which our food, water and air are clean, and our children grow up healthy and thrive. Everyone needs a protected, safe community and workplace, and natural environment to enjoy. We can make this world vision a reality. The tools we bring to this work are prevention, safety, responsibility and democracy.*

*Our goal is to prevent pollution and environmental destruction before it happens. We support this precautionary approach because it is preventive medicine for our environment and health. It makes sense to:*

- *Prevent pollution and make polluters, not taxpayers, pay and assume responsibility for the damage they cause;*
- *Protect our children from chemical and radioactive exposures to avoid illness and suffering;*
- *Promote use of safe, renewable, non-toxic technologies;*
- *Provide a natural environment we can all enjoy with clean air, swimmable, fishable water and stewardship for our national forests.*

*We choose a “better safe than sorry” approach motivated by caution and prevention.  
We endorse the common-sense approach outlined in the BE SAFE’s four principles listed below.*

## ***Platform Principles***

### **HEED EARLY WARNINGS**

Government and industry have a duty to prevent harm, when there is credible evidence that harm is occurring or is likely to occur—even when the exact nature and full magnitude of harm is not yet proven.

### **PUT SAFETY FIRST**

Industry and government have a responsibility to thoroughly study the potential for harm from a new chemical or technology before it is used—rather than assume it is harmless until proven otherwise. We need to ensure it is safe now, or we will be sorry later. Research on impacts to workers and the public needs to be confirmed by independent third parties.

### **EXERCISE DEMOCRACY**

Precautionary decisions place the highest priority on protecting health and the environment, and help develop cleaner technologies and industries with effective safeguards and enforcement. Government and industry decisions should be based on meaningful citizen input and mutual respect (the golden rule), with the highest regard for those whose health may be affected and for our irreplaceable natural resources—not for those with financial interests. Uncompromised science should inform public policy.

### **CHOOSE THE SAFEST SOLUTION**

Decision-making by government, industry and individuals must include an evaluation of alternatives, and the choice of the safest, technically feasible solutions. We support innovation and promotion of technologies and solutions that create a healthy environment and economy, and protect our natural resources.

---

**Take precautionary action to eliminate PVC products and prevent future harm. Sign onto the BE SAFE Platform.**

Be counted when we deliver this national platform to the White House in 2005.  
Endorse the platform today at [www.besafenet.com](http://www.besafenet.com)

BE SAFE is coordinated by the Center for Health, Environment & Justice. To sign the platform or for more information, contact us at CHEJ, P.O. Box 6806, Falls Church, VA 22040, 703-237-2249, or 518-732-4538, or visit [www.besafenet.com](http://www.besafenet.com)

