

# **PVC**

## ***Bad News Come in Threes: The Poison Plastic, Health Hazards & the Looming Waste Crisis***

### **Chapter-by-Chapter Summary of Major Findings**

#### **PVC Generation & the Looming Waste Crisis**

- PVC is a commonly used plastic found in baby shampoo bottles, packaging, saran wrap, shower curtains and thousands of other products—yet there is little public awareness of its serious health and environmental impacts.
- In the U.S., an estimated 300 billion pounds of longer-lasting PVC products, such as construction materials that last 30 to 40 years, will soon reach the end of their useful life and require replacement and disposal.
- As much as 7 billion pounds of PVC are discarded every year in the U.S.
- PVC disposal is the largest source of dioxin-forming chlorine and phthalates in solid waste, as well as a major source of lead, cadmium and organotins—which pose serious health threats.
- Short-lived products account for more than 70% of PVC disposed in America’s solid waste with 2 billion pounds discarded every year, including “blister packs” and other packaging, plastic bottles and plastic wrap.

#### **Trouble From the Start: The Production & Use of PVC**

- PVC production poses serious environmental health threats due to the manufacture of raw chemicals, including chlorine and cancer-causing vinyl chloride monomer.
- U.S. communities surrounding vinyl chloride chemical facilities, half of which are in Louisiana, suffer from groundwater and air pollution.
- PVC includes high amounts of toxic additives, which are released during use and disposal, resulting in elevated human exposures to chemicals.
- PVC use results in dioxin emissions from PVC products burned in 1 million annual U.S. fires of buildings and vehicles. The International Association of Fire Fighters supports the use of alternative building materials that do not pose as high a risk as PVC.

#### **The Deadly Connection: PVC, Chlorine and Dioxin**

- When burned, PVC plastic forms dioxins, a highly toxic group of chemicals that build up in the food chain, can cause cancer and harms the immune and reproductive systems.
- PVC is the leading contributor of chlorine to four combustion sources— municipal solid waste incinerators, backyard burn barrels, medical waste incinerators and secondary copper smelters—that account for an estimated 80% of dioxin air emissions (USEPA).

#### **Don’t Burn It: The Hazards of Burning PVC Waste**

- More than 100 municipal waste incinerators in the U.S. burn 500 to 600 million pounds of PVC each year, forming highly toxic dioxins and releasing toxic additives to the air and in ash disposed of on land.
- Open burning of solid waste, which contains PVC, is a major source of dioxin air emissions. Backyard burning of PVC household trash is unrestricted in Michigan and Pennsylvania, partially restricted in 30 states and banned in 18 states.
- The incineration of medical waste is being steadily replaced by cleaner non-burn technologies.

### **No Place Left: Problems with PVC in Landfills**

- Dumping of PVC in landfills poses long-term problems from leaching of toxic additives into groundwater, dioxin-forming landfill fires and toxic landfill gases.
- Land disposal is the final fate of between 2 billion and 4 billion pounds of PVC that is discarded every year in some 1,800 municipal waste landfills.
- Many of the 1,900 landfills used for construction and demolition (C&D) debris are unlined and cannot capture contaminants leaking out of PVC building waste.
- An average of 8,400 landfill fires are reported every year in the U.S., contributing further to PVC waste combustion and dioxin pollution.

### **Recycling Menace: PVC Undermines Recycling Efforts**

- Contrary to popular belief, recycling of PVC is negligible, with estimates ranging from 0.1% to 3% of post-consumer PVC waste being recycled.
- PVC is very difficult to recycle because many additives used in PVC products make it impossible to retain the unique properties of the original formulation from a batch of mixed PVC products collected for recycling.
- PVC products contaminate the recycling batch when mixed with PET plastic bottles.

### **Don't Buy It: Safer Alternatives are Available, Effective and Affordable**

- PVC is the most environmentally harmful plastic; many other plastic resins can substitute more safely for PVC when natural materials are not available.
- Safer alternatives to PVC are widely available and effective for almost all major uses in building materials, medical products, packaging, office supplies, toys and consumer goods.
- Phasing out PVC in favor of safer alternatives is economically achievable.
- A PVC phase-out will likely require the same total employment as PVC production by making the same types of products from safer plastic resins.

### **Take Action: Preventing Harm from PVC Use and Disposal**

- Policy makers at the local, state and federal level should enact and implement laws that steadily reduce the impacts of PVC disposal and lead to a complete phase-out of PVC use and waste incineration within ten years. In the interim, any PVC waste generated should be diverted away from incineration to hazardous waste landfills.
- Consumers should take personal action to buy PVC-free alternatives and to remove PVC from their trash for management as household hazardous waste.
- Communities should continue to organize against PVC-related dioxin sources such as waste incinerators while working to promote safer alternatives.

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