

TSCA Reform Needed Now

Congress Must Protect People from Toxic Chemicals Known to Cause Harm: **Vinyl Chloride**



Vinyl chloride is one of the highest production volume chemicals in the world. Global demand in 2006 was estimated to be more than 17 billion pounds and U.S. production capacity is more than 18 million pounds. Yet this widely used toxic chemical is known to cause liver cancer, brain cancer and some blood cancers, and has been associated with breast cancer. Exposure to high levels in the air can even be fatal. Visit www.takeouttoxics.org.

When the Toxic Substances Control Act (TSCA) was enacted in 1976, it was intended to ensure that chemicals are safe throughout their lifecycle, from manufacture to use and disposal. But weaknesses in the law have left the Environmental Protection Agency (EPA) unable to act on known health dangers. Other laws, such as those setting air, water, and workplace safety standards, do not adequately regulate exposure to most chemicals, nor do they address the hazards a chemical may pose over its entire lifecycle. New legislation is needed to rapidly reduce exposure to toxic chemicals, such as vinyl chloride*, used in the production of polyvinyl chloride (PVC) that appears in everything from wall and floor coverings to children's toys to cars. Vinyl chloride, a chemical known to cause cancer, poisons the air breathed by workers and people living in contaminated communities. NRDC urges Congress to update TSCA to protect people and the environment from toxic chemicals.

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Vinyl Chloride is a Deadly Toxic Chemical, Despite Industry's Repeated Attempts to Hide the Threats

Vinyl chloride is used to make polyvinyl chloride (PVC). From production through disposal, vinyl chloride threatens health and contaminates the environment. The harmful health effects of vinyl chloride have been known for decades, though industry has suppressed and misrepresented the health effects from PVC exposures for years. Industry experiments in laboratory animals, as early as the 1950's, found evidence of harm but officials did not initially disclose the findings. PVC manufacturers also delayed release of study results showing that rodents exposed at levels much lower than the allowable workplace exposure limits developed liver sarcoma. And then the vinyl industry commissioned an epidemiologist to downplay the associated non-liver cancer risks of vinyl chloride, while evidence of links to brain cancer continued to mount and workers continued to die from cancer. After an aggressive lobbying campaign from industry, a final EPA vinyl chloride assessment completed in 2000 after industry protest, excluded risk to organs other than the liver, which limited the development of truly protective health standards based on total cancer risk to all organs from vinyl chloride exposure.

Factory Workers and People Living in Low-Income Neighborhoods are Most at Risk

Workers at facilities that make vinyl chloride, or PVC, are primarily exposed by breathing vinyl chloride but can also be exposed through their skin and eyes. These exposures have resulted in what has been called "vinyl chloride disease," a syndrome consisting of Raynaud's phenomenon (blanching, numbness, and discomfort of the fingers upon exposure to cold), degeneration of the fingertip bones (acroosteolysis), joint and muscle pain, and stiffness of the hands with skin changes. Workplace exposure to vinyl chloride is also known to cause cancers and other types of liver disease. Equally disturbing is the fact that PVC manufacturing plants are disproportionately located in low-income neighborhoods and communities of color, making exposure to this toxic chemical not only an issue of health and the environment, but also an issue of environmental justice. Vinyl chloride has been identified as a contaminant at more than one-third of hazardous waste (Superfund) sites, resulting in groundwater and air contamination of nearby communities. A strengthened TSCA would set a safety standard that is protective of workers and the environment by reducing use and production, rather than relying on piecemeal regulations which regulate end of the pipe controls such as air emissions.



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Vinyl chloride emissions from polyvinyl chloride (PVC), ethylene dichloride (EDC), and vinyl chloride monomer (VCM) plants cause or contribute to air pollution that may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness.

-U.S. Environmental Protection Agency

SOURCES

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Vinyl Chloride

Products Where Vinyl Chloride Is Found

Vinyl chloride is an intermediate in the production of PVC plastic used in a wide range of products including pipes, wire and cable coatings, packaging materials, upholstery for automobiles and furniture, wall and floor coverings, flooring, backing for carpet, house wares, automotive parts, medical devices, and children's toys. Some major manufacturers, retailers and companies are moving away from using PVC due to concerns about the toxicity of PVC and many of its additives, including phthalates which are required to make PVC plastic more soft and flexible. Target, Wal-Mart, Microsoft, Johnson & Johnson, Nike, and Apple, have agreed to phase out the use of PVC in their products.

Exposure and Health Risks

People are exposed to vinyl chloride by breathing contaminated air and drinking contaminated water. If a water supply is contaminated, vinyl chloride can also contaminate indoor air when the water is used for showering, cooking or laundry. Vinyl chloride can even be emitted from new vinyl products. For example, elevated levels of vinyl chloride have been measured inside of new cars with vinyl interiors. However, the majority of the vinyl chloride found in the environment is the result of releases from manufacturing facilities or waste disposal. Vinyl chloride has been found in the air near vinyl chloride manufacturing and processing plants, hazardous waste sites, and landfills.

This toxic chemical is a known human carcinogen causing liver cancer, brain cancer and some cancers of the blood. Vinyl chloride has also been associated with mammary (breast) cancer. According to the U.S. Centers for Disease Control and Prevention (CDC), infants and young children might be more susceptible than adults to vinyl chloride-induced cancer. Exposure to high levels in the air can be fatal and longer term exposures to low levels have been linked to toxicity in nearly every major organ system. As well as being highly toxic in its own right, vinyl chloride production also releases other toxic substances into the environment, including dioxins, which are also harmful to the public's health.

How Vinyl Chloride is Designated and Regulated Now



The International Agency for Research on Cancer (IARC) has identified vinyl chloride as a known human carcinogen.



The U.S. Department of Health and Human Services (HHS), and the EPA, have identified vinyl chloride as a known human carcinogen.

The U.S. EPA has set a drinking water standard for vinyl chloride.

Congress specifically identified vinyl chloride as a hazardous air pollutant under the Clean Air Act and it is regulated as such by the EPA.

Exposure to vinyl chloride is also subject to workplace safety standards for airborne concentrations.

The Food and Drug Administration currently limits the quantity of vinyl chloride in food-contact plastics.



Vinyl chloride is listed on California's Prop 65 list of chemicals known to cause cancer.



Vinyl chloride is listed as a "chemical of high concern" for its carcinogenic effects under Maine's law on Toxic Chemicals in Children's Products.



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