
GM Bans PVC from Car Interiors

by Alexandra McPherson

General Motors' recent decision to ban polyvinyl chloride (PVC) plastic from car interiors for all new vehicle programs by year 2004 is an important step toward manufacturing cleaner cars. Although GM will still use PVC for electrical wires and other parts, this move will hopefully set the pace for a PVC-free car.

GM attributed their switch to poor performance standards of PVC plastics – such as cracking, warping, and fading – but they are also responding to the mounting evidence concluding that there is no safe way to use PVC plastics. PVC, a highly volatile and toxic substance, is widely used in our cars, medical materials and children's toys. It has long been

targeted as a hazardous risk to human health by environmentalists and health experts. GM's decision marks another hard hit to the PVC industry, as some toy companies stopped using it in children's teething rings, and some medical companies have announced efforts to find alternatives to replace PVC-made blood bags.

When PVC is manufactured and discarded, a dangerous byproduct, dioxin, is produced. Dioxin accumulates in the fatty tissues of humans, and has been linked to cancer, impaired child development, infertility, and immune system damage. Once dioxin is released into the atmosphere, it can travel long distances and deposit on land and water far from the

original source. Dioxin persists in soils and sediments for many years (the half life of dioxin in soil is around 12 years), contaminating the food we eat and water we drink.

The use of PVC in our cars greatly increases human exposure to dioxin. Burning PVC, whether it be in an accidental fire or during the car recycling process, produces hundreds to thousands of times more dioxin than burning any other common material. This is largely due to the fact the PVC contains chlorine. Car fires might seem like an infrequent incident, however the EPA estimates that

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there are over 400,000 car fires per year. PVC burns so dangerously that it should be completely banned. For this very reason, some municipalities in Europe have issued restrictions or phase outs on the use of PVC in building materials.

Each year, over ten million cars are junked in the United States. Yet we have no means to safely dispose of the hazardous materials contained in cars, including PVC. Seventy-five percent of the car is recycled while the remaining 25%, referred to as auto shredder residue (ASR), generates three million tons of waste every year. The ASR, which contains hazardous plastics, rubbers, fabrics and glass, is either put in a landfill or incinerated. Both disposal practices are sources of dioxin. In 1995, according to the EPA, municipal waste incineration was the largest source of dioxin emissions into the air. Incinerator ash, which contains both dioxin and heavy metals, is dispersed widely into our environment. Many people who live by incinerators find their home-grown garden vegetables covered with a toxic dusting. Leaching tests at landfills have confirmed the presence of dioxin, making our groundwater highly vulnerable to dioxin contamination.

GM's decision addresses two components of the Clean Car Campaign's clean manufacturing standard: elimination of substances of concern, and design for recyclability and maximum use of recycled materials. PVC is listed as a substance of concern that should be eliminated immediately because there are cost effective alternatives readily available. GM has only taken a first step towards eliminating PVC, as it will continue to be used in other parts of the car. Elimination of PVC will make recycling more cost efficient and less problematic for the environment. The clean manufacturing standard calls on



automakers to demonstrate that the vehicle is 80% by weight reusable or recyclable. Thermoplastic olefins (TPOs), an alternative to PVC plastics, have the potential to be 100% recyclable. All in all, GM has taken a small, but important, step toward manufacturing a cleaner vehicle.

GM is not the only auto company to

retreat from the use of PVC. Other automakers, including Ford and DaimlerChrysler, have also eliminated PVC from instrument panel skins in select car models. Ford advertises that its new Focus has "50% less PVC than previous models."

Honda recently announced its intention to create a 100% recyclable auto by 2010, without the use of PVC. DaimlerChrysler has made inroads in eliminating PVC. GM's move, however, is unprecedented in its scale as it has large ramifications for boosting the market for PVC alternatives. The car company recently held a "Discovery Day" to which they invited suppliers to make presentations on PVC-alternatives.

Although GM's move to ban PVC from car interiors is highly commendable, it is also long overdue. Europe is moving forward on an extended producer responsibility (EPR) directive which will mandate that car companies take back their cars at the end-of-life. Faced with landfill shortages, Sweden and the Netherlands have already mandated EPR initiatives. If a company is financially responsible for end-of-life vehicle waste, it will be more likely to eliminate hazardous materials from the manufacturing process.

In 1978, the U.S. and Canada signed the Great Lakes Water Quality Agreement, which mandates the elimination of persistent toxic substances. Despite the fact that dioxin is one the substances targeted for elimination, the U.S. has not followed through with any legislation to ban PVC, whether it be in cars, toys or medical products. It's time that car companies manufacture clean cars that do not pose unnecessary risks to human health and the environment.

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Use of Domestically Produced PVC

Resins in Transportation (million tons)	
Auto Seats & Trim [a]	90
Seating for Trucks [b]	30
Auto Floor Mats	15
Auto Tops, Exterior Trim	15
Other Trim [c]	25
Other	25
Total	200

a. Includes truck linings.
 b. Includes seating and accessories for trucks, buses, campers, vans and mass transit vehicles.
 c. Includes bumper strips, bumper guards and window winder knobs.
 Source: Chemical Economics Handbook, 1993, 580.1881 O

PVC Use in Vehicles

Arm and Head Rests
 Mud Flaps
 Exterior Accessories & Trim
 Seat Covers
 Heating and Cooling Ducts
 Seat Belt Latches
 Instrument Panel Skins
 Steering Wheel Covers
 Interior Trim
 Undercoatings & Sealers
 Mats
 Wiring