

Background on the Greenpeace Swedish "Dioxin Study" Announcement
The Facts Behind the Confusion
July 7, 1994

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On June 9, 1994, Greenpeace USA issued a press release claiming that a Swedish government group, including representatives of the Swedish EPA and the "Swedish Association of Industries", had issued a recommendation for the phase-out of vinyl plastics by the year 2001. The press release went on to cite data allegedly obtained from the Swedish EPA that revealed the presence of "ultra-toxic dioxins, furans, and PCBs in samples of PVC (polyvinyl chloride) plastic."

In fact, Greenpeace had actually mixed two separate data reports in order to develop this press release. The first document was a report prepared in early June by the Swedish Eco Cycle Delegation (the "closed-loop" delegation), which recommended the voluntary phase-out of the use of vinyl in "soft" (plasticized) applications by the year 2000 because of alleged concerns over plasticizer migration. The second document consisted of data that had been reported by the Institute for Environmental Chemistry of Umea University, Sweden in September 1993.

That report, consisting of test samples taken at two PVC manufacturing sites in Sweden -- one operated by Hydro Plast, one by Neste, showed small amounts of dioxin measured at the production sites. The data had been in a public database for some time, and was not new information, as the Greenpeace press release implied.

The data, which is still undergoing analysis by the two companies, showed that one sample contained up to 6.23 parts per trillion (.00000000000623) of dioxin, while the other contained 0.55 parts per trillion (.00000000000055) of dioxin. To compare, other Swedish tests showed that the amount of dioxin generally found in agricultural soil in that country was 5 to 7 parts per trillion and the amount found in Swedish grass ranged from 1 to 43 parts per trillion.

The Vinyl Institute is unaware of any similar data that may have been generated in the United States and is confident that the products made by the U.S. vinyl industry do not present a health and safety hazard. Discussions currently are underway, however, as to what sort of testing might be done by the U.S. industry to confirm that.

The recommendation by the Swedish Eco Cycle Delegation is, at this date, preliminary. It must undergo parliamentary debate in the fall.

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AFTER DIOXIN IS FOUND IN PVC PLASTIC

SWEDISH GOVERNMENT LED GROUP RECOMMENDS PVC PHASE OUT

Greenpeace Calls for Phase-out of PVC Plastic in U.S.

WASHINGTON, D.C. (GP) --- A Swedish Environmental Protection Agency (EPA) led multi-stakeholder group, including plastics industry representatives, yesterday recommended the phase-out of polyvinyl chloride (PVC) plastic by the year 2001. Lennart Daleus, the Swedish EPA official who chaired the panel said, "This means in practice a total phase out of PVC...PVC is a material that does not belong in a ecological society..."

The Swedish panel also recommended labeling of PVC plastic products as an interim measure "to avoid environmental damage from PVC products in waste streams." The panel consists of industry representatives including the "Swedish Association of Industries." The recommendations of this panel reflect a consensus of industry and governmental officials including representatives of the retail and waste treatment industries.

Earlier this month Greenpeace obtained the results of Swedish EPA tests that document the presence of the ultra-toxic dioxins, furans, and PCBs in samples of PVC (polyvinyl chloride) plastic. The levels of dioxin in PVC were similar to those found in paper products in the U.S. in the 1980s. (See data below)

Greenpeace called on the U.S. Environmental Protection Agency and the Food and Drug Administration to begin a rapid phase out of PVC, which is widely used in toys, food packaging, blood bags, indoor plumbing, furniture, flooring, and many other products.

The new data and Swedish recommendations buttress the contention that PVC manufacturing, recycling, disposal and accidental fires result in dioxin formation. In fact, PVC plastics may represent the largest known source of dioxin. In an EPA report leaked in May, the EPA concluded that "background" levels of dioxin in the food supply and in the bodies of the human population may already be causing infertility, hormonal changes, impaired childhood

development, and immune suppression among the general public. EPA's dioxin report has so far failed to identify large sources, such as building fires, of dioxin that are produced as a result of the PVC life cycle. In fact, it is not known if the U.S. EPA or U.S. industry has ever tested PVC for dioxin residues or what the results of those tests may have been.

"The manufacture, use and disposal of products ranging from Barbie dolls, rubber duckies, cooking oil bottles and plumbing almost certainly add to the dioxin contamination of our homes, our food, and our bodies," said Joe Thornton, Research Coordinator for Greenpeace's Chlorine-Free Campaign. "Dioxin pollution is a public health emergency -- the manufacture, use and disposal of PVC may be the largest source of dioxin and should be phased out rapidly." Safer alternatives, including glass, wood, metal, and chlorine-free plastics, are available now for all major PVC uses.

The data leaked to Greenpeace are Swedish EPA chemical analyses, dated May 1994, of samples of pure PVC from two Swedish producers, Norsk Hydro and Neste Chemicals. Dioxin was found in the plastic at levels in the same range as those found in paper products in the 1980s, a finding that sparked a trend away from chlorine bleaching in the world paper industry. Total concentrations of dioxins and furans in the PVC samples ranged from 66 to 82 parts per trillion (ppt); PCB concentrations were 517 to 520 ppt. Expressed relative to the toxicity of 2,3,7,8-TCDD (the most toxic form of dioxin), total concentrations ranged from 0.86 to 8.69 ppt (TEQ).

Presumably, the dioxin can leach out of the PVC, since it would simply be suspended in the plastic, not bound into the chemical structure of the polymer itself. Other chemical additives in PVC are known to leach into foods and blood on contact. The largest source of dioxin exposure for the general public, however, is not direct contact with consumer products but consumption of foods (particularly fish and animal products) that have accumulated dioxin from the general environment.

The dioxin concentrations found in PVC are significant:

- * A one-pound PVC product would contain 390 to 3,945 picograms of dioxin -- equal to EPA's maximum "acceptable" daily dose for 900 to 9,400 persons.

- * The 5.7 million tons of PVC produced in the U.S. each year would carry about 4 to 45 grams of dioxin (TEQ) into the environment -- placing PVC products among such important dioxin dischargers as hazardous waste incinerators (2 to 8 grams per year), garbage burners (60-200 g/yr), and sewage sludge incinerators (1-26 g/yr), according to U.S. EPA.

- * When the rest of PVC's lifecycle is included, the plastic is associated with dioxin formation in the THOUSANDS of grams per

year, according to Greenpeace.

Dioxin occurs in PVC as a by-product of the synthesis of PVC feedstocks from chlorine and natural gas. Although dioxins have been detected in wastes and effluent from PVC production facilities in Sweden, Norway, Germany, and the Netherlands, the new data are the first to confirm that dioxin remains in the plastic product itself. PVC is also the major dioxin precursor in incinerators for garbage and medical waste, metals recycling facilities, and accidental home and building fires. Throughout its lifecycle PVC appears to be the largest known dioxin source, accounting for up to one-third of all dioxin produced, according to Greenpeace estimates.

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