The Vinyl Institute
A Division of The Society of The Plastics Industry, Inc.

Robert H. Burnett
Executive Director

May 14, 1992

TO: VI Executive Board

RE: Lifecycle Assessment

Enclosed you will find the report "Vinyl Products Lifecycle Assessment" prepared for the Vinyl Institute by Chem Systems.

Also enclosed is a press release that has gone out on this report.

If you would like additional copies of this report, they can be obtained by contacting Pat Benkner in our office. The cost for any additional reports is $25.00 each.

RHB/pmb
cc: R. Ryder
J. Mullen

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The Vinyl Institute

NEWS

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FOR IMMEDIATE RELEASE

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NEW LIFECYCLE STUDY SHOWS ENVIRONMENTAL BENEFITS OF VINYL

WAYNE, New Jersey, May 15, 1992 — A new lifecycle assessment of vinyl packaging material shows that vinyl products require less energy and raw materials in production than most comparable materials.

The study, a year-long effort by Chem Systems Inc. of Tarrytown, New York, also concluded that vinyl production creates substantially less carbon dioxide — and potentially, less environmental impact — than most other packaging materials. Carbon dioxide is a major contributor to the greenhouse effect.

Comparisons in the study were made between vinyl (polyvinyl chloride or PVC) packaging and packaging made from glass, paperboard, paper and other plastics commonly used in similar packaging applications.

"This lifecycle assessment strongly confirms that vinyl is an environmentally good product," said Robert Burnett, executive director of the Vinyl Institute. "Because vinyl consumes less energy than other packaging materials and is equivalent in its potential impact on the environment, society is well served by vinyl packaging."

(more)

The Vinyl Institute, A Division of The Society of the Plastics Industry

The study by Chem Systems Inc. also noted that:

- Vinyl is the most stable and least environmentally dispersed end use for chlorine — which "... leaves this element in a form essentially more inert than the salt from which it was made."
- The manufacture of vinyl chloride monomer (VCM) — from which vinyl is made — is "a classic case of waste minimization," since virtually all material used to make VCM is recycled back into the process.
- A new membrane-based cell technology is being introduced into chlor-alkali manufacturing, which will improve energy efficiency and product quality while reducing potential environmental impact.
- Vinyl polymerization is a technology with "a very low discharge of VCM, since extremely strict standards were applied in the mid-1970s." The industry put the strict standards in place after studies showed that higher volume VCM discharges were linked to health problems in workers.
- Devices which rapidly and automatically identify and separate vinyl from other plastics in the mixed post-consumer waste stream permit vinyl to be recycled and reused.

"These conclusions, all based on scientific fact, give public policy decision makers solid information to use as they consider the appropriate role for vinyl in our economy," Burnett said. "Clearly, the weight of evidence says vinyl deserves the support of everyone working to improve the environment."

The Chem Systems study also marks an evolution in product lifecycle assessment methodology, according to Ronald F. Cascone, senior consultant for the work. He said new methodology for the study was developed based on a "critical analysis of the past and current state-of-the-art product lifecycle assessments. We recognized and attempted to overcome the many, and sometimes conflicting, criticisms of the methodology."

Lifecycle assessments attempt to catalog and analyze the total energy use and environmental emissions associated with a product from cradle to grave.

Cascone said some current assessments "have obscure databases and assumptions, are out of date, are naive concerning industry, irrelevant in excess detail and not focused on the most important factors of energy use and emissions."

In assessing vinyl packaging for the Vinyl Institute, Chem Systems relied on actual databases for energy and fuel use — rather than academic models — and on U.S. government emissions data from the Toxics Release Inventory (TRI).

Chem Systems created a computer model for its assessment which accounts for the material and energy used and environmental releases per unit for each kind of packaging analyzed.

"This model especially concentrates on materials conversions, the key energy and emission-intensive steps, such as oil refining, ethylene cracking, chlor-alkali production, glass melting, paper pulping, and monomer and polymer processes," Cascone said.

He explained that the report represents a state-of-the-art lifecycle assessment which can be updated as new data is obtained.

Vinyl used in packaging, the study notes, is only about 9 percent of the total domestic PVC virgin resin demand and compounded vinyl represents only about 7.5 percent of the total commodity plastics used in packaging in the U.S.

Further information on the study can be obtained by contacting the Vinyl Institute, Wayne Interchange Plaza II, 155 Route 46 West, Wayne, N.J. 07470.

The Vinyl Institute, a division of The Society of the Plastics Industry, Inc., is a national trade association representing the leading U.S. manufacturers of vinyl, vinyl feedstocks, additives and film and sheet products. The Vinyl Institute operates the Vinyl Environmental Resource Center (VERCE) which is a clearinghouse for information on vinyl and the environment. VERCE can be reached at 1-800-969-VINYL or 969-8469.

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