MODEL TOXICS IN PACKAGING LEGISLATION:

AN EVALUATION OF ITS PROVISIONS, ADMINISTRATION, AND IMPACT

A REPORT OF THE TOXICS IN PACKAGING CLEARINGHOUSE

Revised 1998

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INTRODUCTION

Packaging is essential to public health, economic well-being, living standard, and lifestyle in modern societies. Packaging has enabled us to enjoy the benefits of the world's most efficient product distribution system, which delivers a rich variety of food, personal care products, hardware, and other consumer goods. Packaging keeps products safe, intact, and protected from tampering and damage until they reach the marketplace.

Packaging also presents a significant public policy challenge. The value and utility of most packaging is relatively short-lived. Once a consumer purchases and uses a product, its package often ends up in the trash can. To minimize the environmental impact of the discarded package, effective solid waste management systems must be in place.

The role of packaging in the municipal solid waste (MSW) stream has been the subject of considerable debate among policymakers at all levels of government. Because packaging constitutes about one-third of MSW, policymakers have focused on various proposals to reduce or otherwise divert packaging from municipal disposal systems through recycling, reuse, buy-recycled, and composting programs. Concerns have been raised regarding the presence of toxic substances in packaging that may harm the environment and public health when the package enters the waste stream. These policy debates have occurred as part of a larger effort to improve the management of the nation's natural resources and its solid wastes.

From 1988 to 1996, the Coalition of Northeastern Governors (CONEG) played a lead role in the national solid waste debate. CONEG's approach to addressing the solid waste problem, through policies and programs developed by its Source Reduction Council (SRC), was the Model Toxics in Packaging Legislation (Appendix A), completed in 1989. This legislation has become the model for other states and regions that are struggling with similar problems and searching for meaningful solutions. As of this writing, it is the basis for packaging laws in 18 states and several countries in the European Union.

In 1991, the SRC was restructured into the Source Reduction Task Force (SRTF), comprising a coalition of official voting state members and nonvoting advisors from industry, academia, public nonprofit organizations, and the private citizenry. The SRTF then created a subgroup in 1992, the Toxics in Packaging Clearinghouse (TPCH) to ease the administrative burden of the states and regulated industries.

The SRTF ceased to exist as CONEG reorganized its resources in 1996 to focus on other important public issues. However, it was acknowledged that the TPCH should be retained since it served a vital continuing function. During 1997, negotiations were conducted with the Council of State Governments (CSG), and in April 1998, the TPCH came under the administration of CSG.

As required by the Model Legislation, and many of the states' legislation, this report presents the findings of a review of its provisions, administration, and impact, and presents recommendations for improving the law. The report was compiled by the TPCH with information obtained through its own resources and from various outside sources.

Model Toxics in Packaging Legislation
Chronology of Key Events

1988
August 1988.
CONEG creates Source Reduction Council (SRC).

1989
September, 1989.
SRC begins development of Toxics in Packaging Model Legislation.

1990
January 3, 1990.
Model Legislation presented to Governors.
April 17, 1990.
Maine enacts Legislative Document 2368.
April 19, 1990.
New Hampshire enacts House Bill 5835.
April 27, 1990.
Wisconsin enacts Senate Bill 300.
May 8, 1990.
Iowa enacts Senate Bill 2153.
June 6, 1990.
Connecticut enacts House Bill 5852.
June 26, 1990.
New York enacts Ch 286 Laws of 1990.
Vermont enacts House Bill 886.
July 6, 1990.
Rhode Island enacts General Law 23-18.13.

1991
May 20, 1991.
Minnesota enacts Statute 115A.965.

1992
January 20, 1992.
New Jersey enacts Senate Bill 226.
May 4, 1992.
Georgia enacts House Bill 124.

May 26,1992.
Maryland enacts Senate Bill 554.

1993

May 12, 1993.
Florida enacts Section 403.7191, F.S. (1993).
July 1, 1993.
Missouri enacts G.A. Section 1-4, 260.820-260-826.

1994

April 20, 1994.
Virginia enacts House Bill 1202.
December 7, 1994.
Pennsylvania enacts House Bill 337.
December 1994.
"Model Toxics in Packaging Legislation: An Evaluation of its Provisions, Administration, and Impact" published.

1995

Connecticut enacts amendments to the legislation, Title 22a, Chapter 446d.
Rhode Island enacts amendments to the legislation.
April 20, 1995.
Vermont approves amendments to the legislation, Act 57.
August 30, 1995.
Maine enacts amendments to the legislation.

1996

January 1, 1996.
New Hampshire enacts amendments to the legislation, Senate Bill 129, Chapter 78.
February 29, 1996.
Iowa approves amendments to the legislation.
April 30, 1996.
Vermont approves amendments to the legislation, Act 143.

1998

April 1998.
TPCH becomes administratively associated with the Council of State Governments (CSG), rather than CONEG.

EXECUTIVE SUMMARY

In 1990, the Coalition of Northeastern Governors presented to the Northeastern states Model Legislation designed to phase out the use of mercury, lead, cadmium, and hexavalent chromium in packaging within four years following enactment of the legislation. The Model Legislation attracted immediate attention from state officials in the Northeast and in other regions because it responded to public concerns about the potential public health and environmental effects of these substances when they are introduced into the municipal solid waste stream in discarded packaging.

This report reviews the history of the CONEG Model Toxics in Packaging Legislation, evaluates its administrative procedures, reviews the states' enforcement policies and actions regarding this legislation, examines methodologies for testing and measuring industry compliance and the laws' effectiveness, addresses barriers to compliance, and suggests improvements to the Model Legislation's provisions.

CHAPTER HIGHLIGHTS

Chapter One Describes the genesis of the Model Toxics in Packaging Legislation, an early product of CONEG's Source Reduction Council (SRC), the predecessor to the Source Reduction Task Force (SRTF), its objectives, key provisions and requirements, exemptions for certain products, and certification procedures. The Model Legislation presents an innovative self-certification approach to regulating packaging and its components. It does *not* regulate products.

Chapter Two Describes the Toxics in Packaging Clearinghouse (TPCH), created by the SRTF to simplify the law's administrative procedures, promote cooperation between participating states, minimize procedural burdens on affected industries, and promote understanding and greater awareness of the Model Legislation's objectives. This chapter also explains the TPCH procedures for addressing industry requests for exemptions and clarifications of the law's provisions and intent as well as actions taken to improve the program's efficiency.

Chapter Three Discusses issues that have arisen concerning the Model Legislation's administration, enforcement, impact and effectiveness. Although a number of states (18 to date) have enacted the Model Legislation, few of the states have aggressively enforced its provisions. This chapter also examines available methodologies for testing packaging for the regulated metals and limitations facing states in determining the effectiveness of this legislation in decreasing the presence of the regulated metals' concentrations in the MSW stream.

Chapter Four Presents the Clearinghouse's recommended changes to the Model Toxics in Packaging Legislation and the rationale for each change.

Chapter Five States that no additional toxic substances will be recommended at this time by the TPCH for regulation under the Model Legislation pending the adoption of a toxicity protocol.

Chapter Six Presents conclusions based upon the review and suggests future actions for the Model Toxics in Packaging Legislation and the TPCH.

Key Conclusions

The Model Toxics in Packaging Legislation has been the basis for legislation enacted in 18 states to help reduce the presence of four heavy metals in the municipal solid waste stream. The Model Legislation requires affected industries to self-certify their compliance with the law. The Model also allows exemptions for certain packages meeting specific criteria.

The TPCH has helped to ease the states' administration of the laws and disseminates information about the Model Legislation to other states and interested parties. The TPCH has also helped to ease industries' burden of compliance with the member states' legislation.

Methodologies exist to test packaging for the regulated metals, but a more effective test is needed for hexavalent chromium. Determining the overall impact of the Model Legislation's impact on the municipal solid waste stream (MSW) has not been measured to date for lack of resources devoted to a very complex process. However, anecdotal information suggests that individual companies' contributions to MSW have changed dramatically over the tenure of this legislation.

A risk assessment protocol for toxics should be adopted by the Clearinghouse and its member states before any additional substances are considered for regulation.

The TPCH is recommending several changes to the Model Legislation in order to ease the administration of the Model Legislation, clarify its provisions, and to ensure its requirements do not interfere with programs and policies that promote the production and use of recycled-content products and certain reusable containers. The TPCH recommends implementing the following changes to the Model Legislation:

- Emphasize its application to both domestic *and* foreign packaging and packaging components.
- Extend the recycling exemption (5c) to January 1, 2010.
- Slightly modify the exemption for packaging components with no feasible alternatives (5d).
- Extend the exemption (5e) for the use of the regulated metals in certain special reusable packages and packaging components that are regulated under federal and state health, safety, transportation and disposal requirements to January 1, 2010.
- Extend the controlled distribution and reuse exemption (5f) to January 1, 2010.
- Extend the glass and ceramic vitrification exemption (5g) to January 1, 2005.
- Amend the language to modify the periodic review and associated report on the effectiveness of the legislation.

These recommendations are fully set forth in Chapter 4 of this report.

Several future actions for the Clearinghouse are also recommended:

- Encourage states without Toxics in Packaging legislation to adopt the Model and become members of the TPCH;

- Actively recruit non-TPCH member states that have enacted the Model Legislation;

- Develop a plan for testing and enforcement;

- Monitor developments and gather data relating to Toxics in Packaging in the U.S. and internationally;

- Identify a pool of experts to assist with technical issues submitted to the Clearinghouse;

- Continue to update the Comparative Analysis of state Toxics in Packaging Laws;
- Continue to track and coordinate all exemption and clarification requests on behalf of the member states;
- Produce outreach and information materials for both industry and the states;
- Work with the Council of State Governments to promote the Model Legislation nationally and internationally for worldwide uniformity.

CHAPTER ONE: REDUCING PACKAGING WASTE VOLUME AND TOXICITY

This section describes the rationale for creation of the Model Toxics in Packaging Legislation, and includes a brief summary of the Model's key provisions.

The Toxics in Packaging Model Legislation responds to global concerns about the potential adverse public health and environmental impacts resulting from the presence of heavy metals in the municipal solid waste stream.

The Source Reduction Council (SRC) of the Coalition of Northeastern Governors (CONEG) began the development of the Model Toxics in Packaging Legislation in September 1989, after the Governors approved the initiative along with the establishment of a more permanent forum focused on source reduction. In accepting the SRC's recommendations concerning a Toxics in Packaging legislative initiative, the Governors recognized the potential solid waste management difficulties presented by certain metals contained in discarded packaging. Although these elements generally present no health risks to consumers, potential difficulties may arise once the package enters the solid waste stream. Concerns about the potentially detrimental environmental and health effects from metals present in landfill leachate, incinerator ash, and stack emissions were underscored. In addition, because packaging is transitory, it was felt that the Model should not place an inordinate burden on the solid waste system.

On January 3, 1990, the SRC presented the Model Toxics in Packaging Legislation to the Northeastern Governors for adoption. In 1994, the Toxics in Packaging Clearinghouse (TPCH) published an initial review of the model, adopting certain revisions to the model legislation. Subsequently, in December 1996, the Clearinghouse further amended the model legislation to exempt vitrified glass or ceramic packaging until January 1, 2000. To date, 17 states have enacted laws based on the original model, including Connecticut, Florida, Georgia, Illinois, Iowa, Maine, Maryland, Minnesota, Missouri, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin; and Virginia adopted the 1996 version of the model legislation. In addition, Massachusetts and Michigan have introduced bills based on the Model.

The Model Legislation mandates a phased elimination of four metals and prohibits further intentional use of those metals in product packaging.

All packages—including their immediate subassemblies of coatings, inks, and labels (all known as “packaging components”), whether offered in a state for sale or promotional purposes—are covered by the Model Legislation.

The Model Toxics in Packaging Legislation has two objectives:

- Phase out the use and presence of the four regulated metals in packaging and packaging components sold and/or used in states where the law has passed; and

- Prohibit the *intentional* addition of any of the four regulated metals to packaging and packaging components.

To achieve those objectives, the Model Legislation mandates that package manufacturers and users (as defined) certify that the package and its components contain no more than the following *total* concentrations by weight of the four regulated metals by the deadlines established:

- 600 ppm (0.06%) two years after adoption;
- 250 ppm (0.025%) three years after adoption; and
- 100 ppm (0.01%) four years after adoption.

> Note: The numerical standards (especially the 600 ppm level) were suggested by industries that advised CONEG and the Source Reduction Council on development of the Model Legislation. According to the National Association of Printing Ink Manufacturers (NAPIM), the 600 ppm standard was established by the Consumer Product Safety Commission (CPSC) in 1977 as a safe limit for lead content in paints and coatings used on toys, in books, and in other items intended for use by children. The Task Force understands CPSC based this standard on a recommendation of the National Academy of Sciences. The Academy conducted a careful evaluation of available scientific studies and concluded that a reasonable maximum safe level for lead contaminants is 600 ppm. "PPM" means parts per million, on a weight basis.

Industry representatives on the SRC and representatives from other industry groups generally agreed that 600 ppm had already been achieved for lead in many packaging applications. Based on known information about current industry practices, the SRC agreed that adding the other three elements (cadmium, mercury, and hexavalent chromium) to the Model would not present an undue burden to affected industries. Because the limit of 600 ppm would apply to any particular component or piece of the package, the composite levels for all the regulated metals in the package would be less than 600 ppm.

The Model provides a two-year phase-in of the effective date of the 600 ppm standard. This phase-in approach allows affected industries sufficient time to make the necessary adjustments in their packaging manufacturing processes, printing equipment, and to their inventories to meet the law's requirements. After consulting with a range of industries, the SRC agreed that the two-year delay provided a reasonable transition period.

The SRC established the intermediate levels of 250 ppm and the final level of 100 ppm after consulting industry experts who indicated the technology would be available to enable the packaging industry to meet those levels within the time frames established in the Model Legislation.

The SRC also recognized that complete elimination of the regulated metals from packaging (i.e., 0 ppm) would be impossible to accomplish. The raw materials used to make packaging contain background levels of these metals, which occur naturally or result from contamination by other sources of these metals in the environment. Thus, the Model Legislation provides the 100 ppm limit for the sum of the four regulated metals as an indicator that the package contains only trace amounts of these metals.

The authors of the Model Legislation incorporated exemptions for industries that could not comply with the standards without compromising essential functions or violating safety and health requirements.

While developing the Model Toxics in Packaging Legislation, the SRC acknowledged that provisions must be made for packaging manufacturers/users that could not achieve the required standards for the package without compromising essential functions (i.e., safety) or without incurring extreme burdens. In addition, the Model Legislation established a procedure for exempting:

- Those packages or packaging components with a code indicating that the date of manufacture preceded the effective date of the law;
- Those packaging and packaging components to which regulated metals have been added to ensure that the package complies with federal health and safety requirements;
- Those packages and packaging components to which regulated metals have been added during its production to ensure the protection, safe handling or function of the package's contents and for which there is no feasible technical alternative;
- Those packages and packaging components which may contain one or more of the regulated metals because of the use of recycled materials;
- Those packages and packaging components that are reused and are regulated under federal and/or state health, safety and transportation requirements;
- Those packages and packaging components that are reused and have a controlled distribution;
- Those packages and packaging components that are glass or ceramic and have a vitrified label.

Except for those applying to recycled content products, reused products, and glass or ceramic vitrification, exemptions are limited to two years and are renewable in additional two-year increments. Manufacturers must submit exemption requests for consideration by the states. The state agency must determine whether the exemption is necessary to insure the package performs essential functions, such as protecting its contents or protecting the user from its contents. The law does not consider advertising an essential function of a package. For example, under the law, a manufacturer's request for an exemption to brighten the color of a product label would generally not qualify for an exemption. Brightening or intensifying a color on a package component is considered a marketing concern, not a health or safety issue.

In 1994, to encourage the growth and development of the recycling industry, a six-year exemption for packages made from recycled materials was included in the model legislation. The Model does not require manufacturers to specifically apply for the recycled packaging exemption. For example, paper mills may accept recycled paper for recycling printed with inks containing significant amounts of one or more of the regulated elements. The recycling industry has been encouraged to develop detection techniques that would assist in eliminating the regulated metals from recycled materials. The TPCH is now recommending the extension of the recycling exemption to 2010.

The Model Legislation also exempts packaging requiring the use of one or more of these four regulated metals to protect that package's contents (i.e., use of lead shielding to protect photographic or X-ray film) or to protect the health and safety of shippers and handlers from the product (e.g., use of lead shielding to contain radioactive material intended for medical uses). The manufacturer or distributor must specifically apply for this exemption. Again, this exemption is not intended to be used for product promotion or marketing purposes.

Another exemption exists which includes the use of a regulated metal in certain special reusable packaging that must be handled according to federal and state health, safety and transportation regulations, properly collected and reused, and properly disposed of as regulated hazardous waste at the end of their useable life. This would include the use of lead in containers for radioactive materials (such as radioisotopes used in medicine) in order to shield the radioactivity from the handlers, its use as a constituent of safety plugs on certain reusable compressed gas cylinders to allow the gas to vent in case the cylinder is involved in a fire (thereby preventing an explosion), as well as other such specialized packaging uses for the regulated metals. The TPCH recommends extension of this exemption to January 1, 2010.

The Model Toxics in Packaging Legislation requires company certification of compliance.

Manufacturers or suppliers of any package or packaging component within two years of adoption and thereafter, must maintain a certificate stating that the package or packaging component complies with the statute or explains the basis for any exemption claimed. The certificate must be amended if the manufacturer of the package substantially changes the packaging. An authorized company official must sign the original certificate and new or amended certificates. The law requires that the original Certificate of Compliance for each package must remain with the company that places the product in the package. Copies of the certificate may be provided to product/package purchasers, distributors, and suppliers upon request. The certification process was adopted to ease the administrative burden of the legislation on the states. This requirement does *not* apply to the retailer or to the individual consumer.

A state administrative agency may request the Certificate of Compliance for a specific package from the certifying entity at any time. The Model Legislation authorizes members of the public to request copies of certificates from the certifying company. Under the Model, such written requests from the public must also be submitted to the state agency. The company must respond to the request within 60 days. Some states have modified this procedure in their statutes or regulations.

The Model Legislation does not specify a test for the regulated metals in packaging.

The model legislation does not mandate the use of a specific test protocol for detecting the regulated metals in packaging. States may prefer their own testing method, or they may refer to the American Society for Testing and Materials (ASTM) which can provide information on accepted testing methods. In addition, the states are encouraged to also refer to Test Methods for Evaluating Solid Waste, SW-846, third edition, November 1986, by the U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response.

The impact of the Toxics in Packaging laws on decreasing the regulated metal content of the municipal solid waste (MSW) stream is theoretically feasible, but extremely difficult to quantify.

Regulated metals in the MSW stream come from a number of sources. Consequently, in order to determine an accurate measure of the specific impact of Toxics in Packaging laws on the concentration of the regulated metals in the MSW stream, samples of the waste stream would have to be extracted and their regulated metals concentrations compared prior to, and at various points after, enactment of the law. Points of analysis should include a mass balance approach to the solid waste to be incinerated, the incinerator ash, the landfilled solid waste, the landfill leachate and sludge. Furthermore, data analysis would have to control for other non-packaging sources of the regulated metals based upon estimates of their presence in the waste stream, in incinerator ash, and in wastes being landfilled. This is an extremely complex, difficult and costly analysis, and because of the variable nature of waste streams, there is no assurance that the results would be accurate. Non-packaging sources of these metals tend to be far in excess of the amounts found in packaging.

However, enacting the essential features of the model law in 18 states in various regions throughout the U.S. has most likely resulted in a national impact on toxics metal concentration in packaging. Essentially all industries involved in interstate commerce comply with the law on a national basis in order to avoid the risk of non-compliance in those states that have passed packaging legislation.

CHAPTER TWO: TOXICS IN PACKAGING CLEARINGHOUSE

The Toxics in Packaging Clearinghouse (TPCH) was formed in 1992 to help states consider exemption and clarification requests from companies subject to the requirements of the Toxics in Packaging Legislation. The Clearinghouse also provides affected industries with a source for "one-stop shopping" when dealing with many of the 18 states that have enacted these laws. The TPCH continues to serve as a cost-effective vehicle and forum for its member states and others to administer the various states' toxics in packaging laws in a manner that promotes consistency and uniformity in administration and enforcement by participating states.

Although the Clearinghouse was originally established by and affiliated with the Source Reduction Task Force of the Coalition of Northeastern Governors (CONEG), CONEG's Advisory Committee voted in 1996 to discontinue its association with both of these groups because of a change in priorities. Recognizing the importance of continuing the TPCH, a committee was formed to identify key organizational and operating characteristics, which make the Clearinghouse valuable to its state and industry members. The committee's work included an evaluation of a number of existing organizations whose missions and operations would be consistent with those of the Clearinghouse.

It was through this process that the TPCH determined that the Council of State Governments (CSG) would provide the most efficient and effective secretariat services for the Clearinghouse. In 1997, the TPCH began discussions with CSG, and in early 1998, a Cooperative Agreement between the two organizations was finalized and signed.

This chapter presents an overview of the program, describes its procedures, and suggests some areas where improvements are indicated.

The Source Reduction Task Force created the TPCH to provide administrative support to participating states and information on the Model Legislation to other states and interested and/or regulated companies.

The objectives of the TPCH are to:

- Provide a forum for consistent policy development;
- Encourage consistent implementation by individual states of Toxics in Packaging laws through joint consideration of exemptions;
- Minimize the administrative burden on states and applicants;
- Periodically review the model legislation and make recommendations for its improvement;
- Create a centralized location for the receipt and processing of written requests for information and exemptions; and

- Disseminate information and educational materials to acquaint the public with the need to reduce the four regulated metals in packaging.

State members of the TPCH as of this report are Connecticut, Iowa, Maine, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. States that participate in the TPCH commit to observe the administrative procedures for applicant filings and to consult with other participating states in considering requests for exemptions. The Clearinghouse has no authority to make rulings on exemption requests; that authority lies solely with the individual states. Rather, the Clearinghouse serves as an advisory body to the states. Membership is open to any state that has enacted legislation based upon the CONEG Model. Membership does not require a state to accept the findings of the full Clearinghouse.

A technical group advises the TPCH in its reviews and consideration of exemption requests. The group is comprised of representatives from industry/corporate and public interest organizations (Appendix B). It exists exclusively to participate in discussions, to exchange information and ideas, and to lend technical support to the TPCH.

The TPCH coordinates state review and consideration of company requests for exemptions and clarification of the Model Legislation's provisions.

The TPCH receives and processes requests for exemptions, information, and clarification of provisions or definitions concerning implementation of the Toxics in Packaging laws enacted by one or more of the member states. Packaging manufacturers or distributors seeking an exemption for their package from Toxics in Packaging legislation enacted by a state that participates in the TPCH should send written requests to the Clearinghouse. Clarification of the law's provision is also available by contacting the Clearinghouse.

The TPCH and its group of technical advisors participate in monthly conference calls or meetings and meet regularly to discuss all written exemption and clarification requests. Requests submitted to the TPCH are placed on the agenda for discussion, and applicants are notified of the meeting or conference call at which their request is to be considered. In accordance with the TPCH bylaws, applicants are invited to participate in either the conference calls or the meetings to explain their requests and to answer any pertinent questions.

These discussions may require additional information from the applicant. In cases involving highly technical questions and issues, the TPCH may consult with technical experts outside the Clearinghouse before acting on a request. This additional information would be specific to the original request for exemption. When the state members of the Clearinghouse are unable to decide on an exemption request, the Clearinghouse will send an interim response to the applicant explaining the reason(s) for the indecision and requesting any additional information that the TPCH states may need to reach a decision.

Once the TPCH states reach a decision, each member state (where the applicant offers the affected packaging for sale or promotion) notifies the applicant of its action (which may or may not be in agreement with the TPCH decision) on the applicant's requests. Findings of the states on other actions, such as clarification or definition of the Toxics in Packaging law(s) will be forwarded to the applicant by the TPCH staff.

Discussion of exemption requests and clarifications by TPCH members has led to more consistent interpretation of the laws in all the member states. This relative consistency has helped the packaging industry comply with the statutes and has minimized the patchwork effect that might develop with 18 different packaging statutes, and the resultant added costs.

The TPCH maintains complete records on all matters addressed. To date, the TPCH has received and processed approximately 75 written requests from companies concerning clarifications and exemptions.

The TPCH provides outreach, legislative briefings, and other informational services to states, industry groups, and other interested parties.

The TPCH serves a number of valuable functions for its state participants and advisory group members. A primary service is information outreach on the Model Legislation and the Clearinghouse program. In support of these efforts, the TPCH has developed four publications:

- An informational brochure that summarizes the legislation and the TPCH;
- *Toxics in Packaging Legislation: A Comparative Analysis*, which presents key provisions of state Toxics in Packaging laws and information concerning their implementation; and
- Model Toxics in Packaging Legislation: An Evaluation of its Provisions, Administration, and Impacts (1994), the first report of the Clearinghouse on its activities and recommendations (this report is an update of the 1994 report);
- A website at www.statesnews.org/tpch/tpch.htm.

In addition, the TPCH responds to daily inquiries concerning the Model Legislation and the Clearinghouse program from the public, other states, and industry.

Other services provided by the TPCH include:

- Inviting states that have enacted legislation based on the Model to become supporting participants in Clearinghouse activities (membership fee required);
- Coordinating conference calls and meetings between member states and technical advisory group members to discuss and address all requests;
- Tracking and informing state and technical group members of enforcement actions and exemptions granted within the states through informational briefs;
- Responding to requests for information contained in the *Comparative Analysis* or additional background; and
- Providing written informational updates or progress reports on an as-needed basis to major trade organizations representing the packaging industry.

The TPCH has developed procedures to facilitate the flow of information and to ease its administrative tasks.

TPCH staff and state/advisory group participants have modified Clearinghouse procedures to improve its efficiency. For example, TPCH staff have prepared and published brochures describing the Model Toxics in Packaging Legislation and the Clearinghouse program. TPCH staff has also developed an informational website (www.statesnews.org/tpch/tpch.htm). A comparative analysis of state Toxics in Packaging laws is available through the TPCH. These publications and Internet site have enabled TPCH staff to improve the program's information and outreach services.

Current TPCH procedures require that staff screen information provided by applicants for completeness in order to expedite TPCH review of exemption and clarification requests. The screening process is consistent with the information form already approved by the TPCH and provided to applicants. Requests are screened for the following:

General Issues:

- Organization(s) seeking the exemption or clarification. If the organization is a trade association or a group of companies, a listing of all companies is required.
- Name and contact at each organization.
- State(s) from whom action is requested.
- Nature of request.

Exemption Specific Issues:

- Specific exemption that is being requested.
- Supporting documentation for the exemption.
- Type of packaging or packaging component.
- Regulated metals present and concentration levels (for each package or packaging component, if different).

Participation in conference calls or meetings, by invitation upon petitioner's request, is especially important to ensure that exemption and clarification requests are adequately discussed and reviewed.

The TPCH consults with experts to assist with technical questions.

The TPCH may solicit assistance from nationally recognized science and engineering experts to aid members in their deliberations over complex technical issues, particularly those pertaining to exemption requests. These persons have performed research and published peer-reviewed scientific or technical publications in their respective fields and may be called upon as needed.

The Toxics in Packaging Clearinghouse is achieving the program's mission.

Evaluation of the TPCH indicates the program is achieving its objectives. For participating states, the Clearinghouse eases their administration of the Toxics in Packaging laws, as evidenced by the flow of information to companies, the coordination and processing of exemption and clarification requests, and the number of inquiries that the program handles. By providing information to states interested in the Model Toxics in Packaging Legislation, the TPCH encourages consistency in the laws' provisions across the states and helps to keep variations in provisions to a minimum.

CHAPTER THREE: COMPLIANCE AND ENFORCEMENT

Through the processes of legislative and regulatory development and implementation, questions have arisen concerning the Model Legislation's intent, administration, effectiveness, and impact. The purpose of this chapter is to examine and evaluate these issues and present an appropriate course of action.

The Model Toxics in Packaging Legislation's unique approach to regulating packaging and packaging components has been widely accepted by the states, while variations in provisions have been minimal.

When state governments express an interest in the Model Toxics in Packaging Legislation, the state legislators are urged to minimize substantive differences from the Model in their proposals. Such variations complicate compliance with administrative procedures and can increase costs, both for regulators and those being regulated. Although most state laws follow the original Model closely, some variations have occurred.

Appendix G presents the Comparative Analysis of significant provisions of each state Toxics in Packaging law. The chart does not include every distinction and should not be considered the definitive interpretation of each law or bill. For complete information, each statute and pending bill should be reviewed.

While most states have implemented the legislation without additional regulations, some states have developed regulations to assist in implementing their laws. Appendix H provides the full text of proposed or promulgated regulations from those states that have regulations.

The Certificate of Compliance process has enabled states and regulated companies to minimize the administrative burdens associated with the Model Toxics in Packaging Legislation.

The Model Legislation requires, as soon as feasible (but not later than two years after enactment of the law), a certificate stating that a package or packaging component is in compliance with the requirements of the law. The certificate accompanying a product which will be used as a package or packaging component must be furnished by its manufacturer or supplier. Those manufacturers that receive an exemption must include in the certificate an explanation of the specific basis for the exemption. This Certificate of Compliance must be signed by an authorized official of the manufacturing or supplying company, and be retained by the manufacturer/supplier for as long as the package or packaging component is in use.

Companies must furnish a copy of their certificate of compliance to the state administrative agency and to members of the public upon request. Under the model, requests for certificates from the public must be as follows:

- In written form, with a copy provided to the state administrative agency;
- Specific to the package or packaging component for which information is being requested; and
- Answered by the manufacturer or supplier within sixty (60) days of the request.

If the manufacturer or supplier creates a new package or packaging component, they must provide an amended or new Certificate of Compliance for the new package or packaging component.

Authors of the Model Legislation largely relied on the Certificate of Compliance to drive industry compliance. In effect, the process by which manufacturers, suppliers, and distributors request/provide copies of certificates for packages for their respective files has created a ripple effect of compliance and awareness of the law among regulated industries. A statement from the steel industry concerning the impact of the Toxics in Packaging Legislation on its processes illustrates this point:

> Passage of the Toxics in Packaging laws has prompted the steel industry to pay closer attention to the issue of heavy metals. It is now the top priority of the industry to assure that such metals remain outside of the manufacturing process. The industry requires as a standard procedure that its suppliers focus their attention on the need to maintain pure raw materials for the manufacture of steel. Finally, the industry continues to improve its technology to remove any trace amounts of the regulated metals that might occur naturally but still fall far below the thresholds required by the law. (Steel Recycling Institute, September 1998)

Appendix D provides a sample Certificate of Compliance.

The Model Toxics in Packaging Legislation leaves enforcement procedures to the states.

Enforcement procedures and policies tend to vary among the states, particularly with respect to civil matters. The authors of the Model Toxics in Packaging Legislation recommended that the states individually determine how to enforce their specific legislation.

While many states' laws impose penalties for non-compliance, most states have not yet initiated enforcement actions. Some states have just recently enacted the legislation, others are just completing their implementing regulations, and others are educating the regulated entities through business, trade organizations, and other similar interest groups. The TPCH recognizes, however, that enforcement of the Toxics in Packaging laws will help to ensure compliance among all affected industries, thereby "leveling the playing field." States are considering strategies for improving or initiating enforcement actions. The Clearinghouse also provides information, and serves as a forum for information exchange, on enforcement issues.

Appendix F provides a summary of state compliance and enforcement actions based upon the Toxics in Packaging laws.

The Model Toxics in Packaging Legislation leaves the selection of sampling and testing protocols to the individual states.

Sampling and analytical testing protocols are not included in the Model Legislation and have not been developed by the TPCH because they are considered to be an individual state regulatory or guidance issue. Regulated industries should conduct a thorough elemental quantitative analysis of their packaging for the four regulated metals to ensure that their packaging complies with the Toxics in Packaging laws. Businesses may use the appropriate elemental analytical methodology which is most effective for their packaging. When states have requested information regarding available testing methodologies, the TPCH has referred them to Test Methods for Evaluating Solid Waste, SW-846, third Edition, November 1986 by the U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response and to the American Society for Testing of Materials (ASTM), recognized for its scientific and analytical credibility on testing procedures.

EPA's SW-846 methodology includes standard testing methods, e.g. methods 3015 and 3051, to determine the total metal content of substances. The methods presented in SW-846 identify specific steps to be taken in conducting an analysis, and include sample handling and preservation, sample digestion or preparation, and sample analysis for specific metal components. From these methods, an analytical protocol is developed that is appropriate for the sample to be analyzed.

The SW-846 methodology has not been found to be effective for the detection of hexavalent chromium in solid waste. Another limitation of this testing methodology is that it may not contain a satisfactory elemental analysis for all package materials. Some materials—glass, steel, and plastics, for example—cannot be accurately evaluated for their total concentration of regulated metals in the package or packaging component according to the EPA SW-846 methodology.

Companies report using the following methods to detect the regulated metals in their packaging:

- ASTM E 1251-88: Standard Test Method for Optical Emission Spectrometric Analysis of Aluminum and Aluminum Alloys by the Argon Atmosphere, Point-to-Plane, Unipolar Self-Initiated Capacitor Discharge; and

- Test methods prescribed in EPA SW-846 (7130 and 7131 for cadmium); 7190, 7195, 7196, and 7197 for hexavalent chromium; 7420 and 7421 for lead; and 7470 and 7471 for mercury.

Many companies and industries have developed their own testing procedures to meet their specific needs for in-house quality assurance or quality control. These procedures are developed to be reasonably accurate, expeditious, economical, and tailored to meet specific circumstances of a company's manufacturing operations. While less-sophisticated procedures may be acceptable and effective for manufacturing operations, these tests may not be satisfactory to the state environmental regulatory agency for determining the more specific concentration of the four regulated metals. A company seeking to use a less-sophisticated analytical method should verify its acceptability with the state regulatory agency. Appropriate methods are generally adapted from ASTM or EPA published methodologies. For example, the steel industry has adopted a methodology to determine the concentration of lead in tinplate coatings involving the following steps:

1. Removal of the pure tin alloy layer from the steel substrate via chemical digestion with hydrochloric acid. Platinum catalysts are used so as to enhance the digestion without excessive steel dissolution. A minimum sample size is necessary to ensure accuracy. Further, because only one surface is tested, the opposite surface must be carefully masked to prevent contact with the acid solution.

2. The solution obtained from the previous step is then subjected to the required dilution and analyzed using atomic absorption (AA) spectroscopy.

3. An appropriate calculation is made involving the AA result and the original sample size to yield a concentration result in terms of the weights percentage of lead in the tinplate coating.

4. Because the amount of lead in tinplate is very small, care must be taken to ensure that all reagents and glassware used throughout the analysis are clean and lead-free.

(Steel Recycling Institute, September 1998).

Additional information should be obtained from ASTM, EPA, and material trade associations about other currently accepted sampling and testing methodologies.

A universal test method for all packaging materials may not exist, and it may be necessary to tailor individual methodologies to the type of materials being tested. ASTM, EPA, and/or material trade associations may be useful sources of information for obtaining information regarding the relative merits of specific analytical methodologies, particularly with respect to hexavalent chromium analysis in solid waste.

In some materials, the very process of testing for hexavalent chromium may change the metal to another form. Until efforts to find cost-effective, accurate procedures for detecting hexavalent chromium are successful, the states may consider the environmentally conservative approach of testing for total chromium, by assuming that all chromium is present in the hexavalent form, unless refuted by scientific calculation. This would represent a worst-case situation. For example, until recently, when sampling groundwater wells at solid or hazardous waste landfills, the conservative environmental practice assumed that all chromium was in the hexavalent form.

For compliance purposes relative to Toxics in Packaging laws, if the hexavalent chromium level is determined by a total chromium analysis and the sum of the four regulated metals exceeds the standard, it would then be appropriate to reconsider the total chromium value. In such cases, the total hexavalent chromium value could be determined by non-analytical (i.e., scientific calculation) methods. A scientific evaluation of the raw materials, manufacturing process, and other relevant factors could be used to calculate an expected hexavalent chromium concentration level.

There is also a need for standard methods of sampling and analytic analysis for a package component that becomes part of an assembled package. For example, while it is relatively straightforward to sample and analyze the regulated metals in a liquid or semi-solid component such as printing ink, the matter becomes more complex after the ink is applied to a cap, container, or label and has been dried or cured.

EPA's SW-846 methodology also includes Toxicity Characteristics Leaching Procedures (TCLP), e.g. Method 1311. While not useable for determining the total concentration of a metal present in a material, TCLP measures the ability of a metal to leach or dissolve from its parent material into groundwater when the discarded material containing the metal is placed into soil, such as in a landfill. In the case of such discarded materials being sent to incinerators, the TCLP methodology may be applied to the resulting ash, to determine whether the incineration process has liberated the metals from the waste material (e.g. plastics) in which they were previously encapsulated, and rendered them soluble.

If additional methodologies become available for the testing of packaging for the regulated metals, the TPCH will make available to state officials and other interested parties information regarding these methodologies. Each state would then have the option of adopting these methodologies in statute, in regulation, or as guidance criteria.

The TPCH member states have engaged in compliance testing and related efforts since 1994.

<u>Coordinated TPCH Compliance Efforts</u>:

In July 1995, the TPCH member states launched a trial effort to ascertain the level of compliance with toxics in packaging statutes of companies marketing their products in member states. The group selected six categories of products to be checked for compliance with the statutes. The selected categories included bread/bakery products, laundry products, metal cans, pet foods, snack foods and store brands.

All of the member states participated in this effort by sending representatives to area stores to randomly select items in a specific category off of the shelves. The representative recorded information about the package/product and identified the manufacturer. A list was compiled of the 20 products/packages selected, and their manufacturers.

Letters were then sent out from the TPCH chairperson to the randomly selected companies to explain the requirements of toxics in packaging laws and to request Certificates of Compliance. The initial mailing was sent out in February 1996. This letter stipulated a deadline of April 15, 1996 for the furnishing of the certificates to the TPCH. The Clearinghouse received certificates of compliance for the various product packaging from 11 companies, representing 16 products/packages. Four companies required follow up phone calls by individual states. Of these four, only one responded by supplying a Certificate of Compliance. As an end result, the TPCH received Certificates of Compliance for 17 of the 20 product packages initially selected, representing an 85% compliance rate.

New York State's Compliance Testing:

Two sets of tests were performed, one during 1994/1995, and a second during 1996. In 1994 - 1995, a staff member was responsible for randomly collecting common packaged retail items. The 11 acquired items were sent to an independent laboratory for analysis. Three samples were taken from each item, with one item having samples taken from two packaging components. The analytical results showed that three packages tested above the law's specified concentration limit for total chromium, one above the concentration limit for lead and one above the concentration limit for cadmium. No packages tested were above the specified concentration limit for mercury, and no single package tested above the limit for more than one regulated metal. It should be noted that due to the costs and difficulty in testing for hexavalent chromium, the chromium testing done by New York was for total chromium only and may not have indicated violations of the hexavalent chromium requirements.

The 1996 test program involved 23 packaging components that were also sent to an independent laboratory for analysis. Three analytical samples were taken from each item. The test results showed that two of the packages tested above the limit for total chromium, and one tested above the concentration limit for lead. No packages tested above the limit for cadmium or mercury, and none tested above the limit for more than one regulated metal. Again, due to the costs and difficulty in analyzing for hexavalent chromium, the chromium testing done by New York was for total chromium only and may not have indicated violations of the hexavalent chromium requirements.

New York Testing – Measured Compliance Rates

	1994/1995	1996
Cadmium	91%	100%
Chromium*	73%	91%
Lead	91%	96%
Mercury	100%	100%

*Total chromium was measured in study—compliance rate for hexavalent chromium may be higher.

Minnesota's Compliance Testing:

To check compliance, the Minnesota Pollution Control Agency (MPCA) performed some limited testing of packaging in 1997. The agency used the testing protocol developed by the state of New York, so that results would be directly comparable. The results showed that all of the packages tested were well within compliance with the requirements of the statute.

Standard chain-of-custody protocol was used as the packages were purchased and tested. Packages were chosen randomly and with as wide a variety of packaging material types as possible. As the New York Department of Environmental Conservation discovered when they conducted packaging testing, it is usually impossible to separate the different packaging components from each other, such as the printing ink from the substrate. In most cases the entire package was tested. A total of 29 items, products and packages, were tested for lead, mercury and cadmium. Detection levels for the three metals were set at .02 PPM for mercury, .96 PPM for cadmium, and 8.8 PPM for lead. Only one package tested rose above the detection limits for lead at a level of 9.4 PPM. The package was a boxboard backing for a blister pack containing a party favor. Only the boxboard portion of the package was tested.

MPCA staff hopes to do more testing in the future, and modest amounts of money have been allocated for testing activities. Ideally, through the TPCH, Minnesota's resources can be combined with those of other states for a more unified approach to testing.

Appendix F contains a state-by-state summary of compliance efforts.

An Early Success:

Among the various packaging components affected by the toxics legislation was the lead-foil wrapper used to protect wine bottles. By 1992, these wrappers were replaced with either plastic or non-leaded foil for all wine sold in the U.S. Through the initial efforts of the TPCH, other organizations such as the Federal Food and Drug Administration became aware of the problem, which led to an early success in the elimination of this packaging waste from the solid waste stream. In 1996, approximately 1.61 billion bottles of wine were sold in the U.S. Therefore, this action resulted in the avoidance of a potential 1.61 billion lead wrappers from the solid waste stream. At 0.5 ounces/wrapper, this would indicate a total reduction of up to 500,000 pounds of lead which is being kept out of the environment (landfills or municipal incinerators) on an annual basis. These reductions will continue to increase as new wine bottles replace older bottles that still contain the lead wrappers because they were manufactured prior to the effective date of the legislation.

CHAPTER FOUR: IMPROVING THE MODEL TOXICS IN PACKAGING LEGISLATION

After thoroughly reviewing the provisions of the Model Toxics in Packaging Legislation, the Toxics in Packaging Clearinghouse (TPCH) identified several areas requiring clarification and modification. This chapter presents those findings with recommendations and the rationale for the suggested actions.

Recommendation 1:

The TPCH recommends that the Model Legislation emphasize that its requirements apply to both domestic *and* foreign packaging and packaging components.

The primary industry groups that the TPCH has worked with are domestic organizations that are producing their packaging in the United States. However, some importers or distributors of foreign packaging are unaware of, or non-compliant with, this packaging legislation. Under the Toxics in Packaging legislation, foreign packaging is regulated to the same extent as domestic packaging. Compliance and enforcement efforts have the effect of minimizing the unfair economic advantage gained by non-compliance.

The TPCH recommends working more closely with trade organizations that are affiliated with the importers or distributors of imported products contained in packaging which has been produced in a foreign country, in order to educate them on the requirements of Toxics in Packaging Legislation.

In addition, the following changes to the Model Toxics in Packaging Legislation are recommended:

Section 3. ***Definitions***

"Package": *means a**ny** container, **produced either domestically or in a foreign country**, providing a means of marketing, protecting or handling a product and shall include a unity package, an intermediate package or a shipping container as defined in ASTM D996. "Package" shall also mean and include such unsealed receptacles as carrying cases, crates, cups, pails, rigid foil and other trays, wrappers and wrapping films, bags and tubs.*

*"**Distributor**": means any person, firm or corporation who takes title to goods, **produced either domestically or in a foreign country**, purchased for resale.*

*"**Packaging Component**": means any individual assembled part of a **package which is produced either domestically or in a foreign country**, such as, but not limited to, any interior or exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks and labels. Tin-plated steel that meets the American Society for Testing and Materials (ASTM) specification A-623 shall be considered as a single package component. Electro-galvanized coated steel and hot dipped coated galvanized steel that meets the American Society for Testing and Materials (ASTM) specification A-525 and A-879 shall be treated in the same manner as tin-plated steel.*

Recommendation 2:

The TPCH recommends extension of the recycling exemption (5c) to January 1, 2010.

When the Model Toxics in Packaging Legislation was drafted in 1989, an exemption was provided for packages and packaging components made from recycled materials. This exemption was created in order to avoid impeding municipal recycling programs. The reasons for this exemption were the relative immaturity of state and local recycling programs and the uncertainty of their future economic success. In addition, unintentional processing of some of the regulated elements could occur in recycling systems (see Toxics in Packaging Legislation: A Comparative Analysis, page 2, Revised Edition, August 1993). Because the CONEG Governors were committed to recycling programs, it was the Task Force's intent that this legislation *not* hinder recycling programs. At the same time, however, the Source Reduction Council wanted to encourage the recycling industry to develop techniques to eliminate these elements from packaging during the first six years the Model was in effect. The recycling exemption was originally intended to expire six years after its enactment.

At this writing, recycling programs have not yet reached technical, logistical or economic maturity. The TPCH continues to support the view that recycling programs should not be subjected to regulations that would hinder their development or discourage new programs. Therefore, the TPCH recommends that the recycling exemption be extended to January 1, 2010.

The following changes to the Model Toxics in Packaging Legislation are recommended:

Section 5. Exemptions

*c. packages and packaging components that would not exceed the maximum contaminant levels set forth in s**S**ubsection (c) of Section 4 of this Act but for the addition of recycled materials; and provided that the exemption for this subparagraph shall expire January 1, ~~2000~~ **2010, and shall not apply to any cadmium, lead, mercury or hexavalent chromium that has been recovered and separated from other materials for use as a metal or metallic compound;** or*

With the exception of certain aluminum packaging, most recycling systems are not "closed-loop" (i.e., packaging recycled into packaging). Most recycling is "open-loop" (i.e., materials collected from a variety of sources, including discarded products, as well as discarded packaging). For example, the steel industry uses a variety of scrap steel from sources such as automobiles, appliances, construction material, and cans as well as "in-house" scrap. These materials are mixed together to manufacture new steel which, in turn, is made into new automobiles, appliances and construction materials, as well as cans.

This open-loop recycling process is economically advantageous; it allows industry to use a variety of source materials—not just recycled packaging for producing new packaging or recycled products for producing new products. If the system were closed-loop, concerns about toxicity in packaging would not exist because the feedstock materials (collected packaging) would already meet legislative requirements. However, the system is not closed-loop, nor is it reasonable to expect that it will be in the future. Therefore, it is neither technically feasible nor economically practical at this time to require a guarantee that ***all*** non-packaging recycled material entering the packaging manufacturing process be completely free of the regulated metals.

An example taken from the steel recycling industry illustrates this point. Small amounts of the regulated metals may be present in the feedstocks from old automobiles or appliances (not cans). Even though the metals are not specifically added during the steel manufacturing process (or are under the threshold limits), the final package (cans) could be considered out of compliance because one or more of the four regulated metals may have been introduced into the process earlier through the recycled materials feedstock. Although it is not economically feasible to test each item of recovered non-packaging material prior to its recycling, it is possible and practical to test a single homogeneous batch of steel that results after the individual, heterogeneous recycled feedstocks have been compiled, mixed together, and melted. (Similar examples may or may not apply to recycled materials other than steel.)

The Model Legislation does ***not*** distinguish between recycled materials that are packaging or packaging components and other recycled materials defined as products. Restrictions on the levels of the four regulated metals in products are relatively rare, yet these products are very much in demand and are used as feedstocks for recycling.

The TPCH recognizes that the testing of individual or batch post-consumer recycled materials for the regulated metals prior to reprocessing is neither economical nor practical. Both closed-loop and open-loop recycling programs are treated on an equal basis with respect to this exemption.

Considering all of the above, final packaging manufactured from recycled material should still not be allowed to exceed the total regulated metal concentration limit of 100 ppm. This level can be achieved by refining the materials or adding virgin or non-contaminated materials. As long as the total concentration of the four regulated metals in the finished packaging or packaging component meets or is below the threshold of 100 ppm, the goal of encouraging recycling, using recycled materials from a variety of sources, should be met in perpetuity.

Further, the TPCH believes it is necessary to clarify in the law that the recycling exemption does not cover the intentional introduction of the four regulated metals even if the metals are derived from recycled feedstock. For example, it is not acceptable to use a pigment that contains lead simply because the lead was recovered from lead-acid batteries. To qualify for the recycling exemption, the regulated metal in question must have been present as a minor ingredient in the discarded waste material before that waste material was designated for recycling.

Recommendation 3:

The TPCH recommends modification of the language for the "exemption for packaging components with no feasible alternative(s)" (5d).

Through several submitted exemption requests, it became clear to the TPCH that the language used for the "no feasible alternative" exemption needed to be strengthened and clarified in order to ensure that these exemptions are considered in light of the original intent of the drafters of the legislation. The intent of the exemption is to provide for the protection, safe handling and function of the package contents, rather than to allow the use of the regulated metals for package design or marketing purposes. When the model was originally drafted in 1989, it was recognized that some situations would occur where there would be no feasible alternative or substitute for the regulated metals in the package or packaging component. It was further recognized at that time that this exemption would apply only in situations where the regulated metal was "essential to the protection, safe handling or function of the package's contents." An example of such a situation is the use of lead-lined packages and containers which are required for the safe handling of radioactive materials. It was never the intent of this exemption to be applied to instances where the metal is present purely for marketing reasons, such as color changes in inks, pigments and dyes.

The following changes to the Model Toxics in Packaging Legislation are recommended:

Section 5. Exemptions

*d. those packages or packaging components to which lead, cadmium, mercury or hexavalent chromium have been added in the manufacturing, forming, printing or distribution process for which there is no feasible alternative, provided that the manufacturer of a package or packaging component must petition the [S**s**tate administrative agency] for any exemption from the provisions of this subsection for a particular package or packaging component based upon the criterion **and submit such documentation as necessary to support the request for the exemption**; and provided further that the [S**s**tate administrative agency] may grant an exemption for up to two years if warranted by the circumstances; and provided further that such an exemption may, upon reapplication for exemption and meeting the criterion of this subsection, be renewed at two-year intervals. For purposes of this subsection, a use for which there is no feasible alternative is one in which the **petitioner conclusively demonstrates that** the regulated substance is essential to the protection, safe handling, or function of the package[1]s contents **and that technical constraints preclude the substitution of other materials. "No feasible alternative" does not include use of any of the regulated metals for the purposes of marketing**; or*

Recommendation 4:

The TPCH recommends extension of the exemption (5e) for reused packages and packaging components that are regulated by federal and/or state health, safety and transportation requirements to January 1, 2010.

When the model legislation was created in 1989, it was recognized that a regulated metal may be needed in certain special reusable packaging because of its unique intrinsic properties. This includes the use of lead in containers for radioactive materials (such as radioisotopes used in medicine) in order to shield the radioactivity from the handlers, its use as a constituent of safety plugs on certain reusable compressed gas cylinders to allow the gas to vent in case the cylinder is involved in a fire (thereby preventing an explosion), as well as other such specialized packaging uses for the regulated metals. Since millions of these containers are used, and they are already tightly regulated by many federal agencies, an exemption was included in the model legislation in order to eliminate an additional regulatory burden on the manufacturers and users of such packaging.

This exemption differs from the similar exemptions in 5(b) and 5(f) in that this exemption is automatic, not requiring that the manufacturer or distributor petition the state agency for an exemption. Having an automatic exemption for this type of packaging should help continue the collection and reuse of such packaging, which provides an additional environmental benefit over single package use. Of course, in order to qualify for this exemption the individual packages must be handled according to federal and state health, safety and transportation regulations, properly collected and reused, and properly disposed of as regulated hazardous waste at the end of their useable life.

The following change to the model Toxics in Packaging Legislation is recommended:

Section 5. Exemptions

e. packages and packaging components that are reused but exceed contaminant levels set forth in Subsection c of Section 4 of this Act, provided that the product being conveyed by such package and/or the package\packaging component is (are) regulated under Federal and/or State health or safety requirements; and provided that transportation of such packaged product is regulated under Federal and/or State transportation requirements, and provided that disposal of such package is preformed according to Federal and/or State radioactive or hazardous waste disposal requirements, and
provided that an exemption under this subparagraph shall expire on January 1, ~~2000~~ ***2010****; or*

Recommendation 5:

The TPCH recommends extension of the controlled distribution exemption (5f) to January 1, 2010.

The TPCH supports the continuation of the exemption for the controlled distribution and reuse of packaging or packaging components. This exemption most frequently applies to items such as reusable pallets, packing crates or milk bottles, where the metals may be added to plastic pallets to assist with slowing ultraviolet light deterioration of the package, or to glass milk bottles to provide a more "permanent" label that can withstand repeated handling and washing of the containers. In order to continue to encourage reusable containers, the following changes to the Model Toxics in Packaging Legislation are recommended:

> ***Section 5. Exemptions***
>
> *f. packages and packaging components having a controlled distribution and reuse that exceed the contaminant levels set forth in ~~s~~**S**ubsection c of Section 4 of this Act, provided that the manufacturer or distributor of such packages or packaging components must petition the (**s**tate administrative agency) for exemption and receive approval from the (~~S~~**s**tate administrative agency, working with the ~~CONEC~~ Toxics in Packaging Clearinghouse) according to standards in ~~s~~**S**ubsection f (1) below set by such agency and based upon satisfactory demonstrations that the environmental benefit of the controlled distribution and reuse is significantly greater as compared to the same package manufactured in compliance with the contaminant levels set forth in ~~s~~**S**ubsection c of Section 4; and provided that an exemption under this subparagraph shall expire on January 1, ~~2000~~ **2010**.*
>
> *1. Standards*
>
> *A plan, to be proposed by the manufacturer seeking the exemption of his designee, shall include each of the following elements:*
>
> *i. a means of identifying in a permanent and visible manner those reusable entities containing regulated metals for which an exemption is sought;*
>
> *ii. a method of regulatory and financial accountability so that a specified percentage of such reusable entities manufactured and distributed to other persons are not discarded by those persons after use, but are returned to the manufacturer or his/her designee;*
>
> *iii. a system of inventory and record maintenance to account for reusable entities placed in, and removed from, service;*
>
> *iv. a means of transforming returned entities, that are no longer reusable, into recycled materials for manufacturing or into manufacturing wastes which are subject to existing Federal and/or State laws or regulations governing such manufacturing wastes to ensure that these wastes do not enter the commercial or municipal waste stream; and*
>
> *v. a system of annually reporting to the (appropriate State administrative agency) changes to the system and changes in designees.*

Recommendation 6:

The TPCH recommends that the glass and ceramics exemption (5g), adopted by the Toxics in Packaging Clearinghouse on September 27, 1996, be extended six years to January 1, 2005.

Heavy metals are contained in ceramic enamel used to print labels onto glass and ceramic packaging. Following application, the enamels may be fired onto the glass or ceramic substrate. During this process, the enamels and heavy metals are "vitrified" or chemically bonded onto the substrate, becoming an integral part of the glass or ceramic material. If properly applied, the metals are very highly resistant to leaching in landfills or to volatilization in incinerators. The TCLP test cited in the language of the amendment is used to determine whether the materials are satisfactorily vitrified to prevent leaching. When vitrified, heavy metal-containing glass or ceramic packaging gets into an incinerator, the glass or ceramic label would remain stable and heavy metals would not be released into the air.

Much of the rationale for the exemption hinges on the fact that three of the regulated metals (lead, cadmium, and hexavalent chromium), after vitrification through appropriate thermal processes, display a continuing affinity for the parent glass or ceramic material during and after either incineration or landfilling. Few if any other materials can make this claim, particularly during incineration where in most other cases the regulated metals would be expected to volatilize and emit to the atmosphere or be converted to soluble forms, such that leachate tests of the resulting bottom ash or fly ash would not pass the environmental standards set by the U.S. Environmental Protection Agency.

It should be noted that the leachate testing rationale used to justify this exemption for the glass and ceramics industry is peculiar to that industry. The rationale was determined after an extensive review of technical evidence, provided by the industry over a period of more than four years and substantiated by independent scientific and engineering experts whose counsel was sought by the TPCH. Proponents of any other material classification who might seek a similar exemption should expect to go through a similar rigorous process of proof.

The TPCH is proposing a ten-year extension of the exemption, consistent with other proposed amendments to the model legislation. Earlier, it had appeared that a recent alternative technology being advanced by one manufacturer might replace the use of ceramic enamels on glass and/or ceramic packaging. However, there is no evidence that the alternative meets the functional/durability requirements of those who use ceramic enamel labels or that it has achieved acceptance within the manufacturing community. There are no other known materials that can replicate the functional qualities of ceramic enamels used on some glass and ceramic packaging.

The following changes to the Model Toxics in Packaging Legislation are recommended:

Section 5. Exemptions

g. A package or packaging component that is glass or ceramic which has a vitrified ~~decoration~~ ***label and*** *when tested in accordance with the Toxicity Characteristics Leaching Procedure~~s of~~* ***methodology described in*** *US EPA ~~Test Method~~* ***Document*** *SW-846 does not exceed 1.0 ppm for cadmium****, 5.0 ppm for hexavalent chromium*** *and 5.0 ppm for lead; and provided that an exemption under this subparagraph shall expire on January 1, ~~2000~~* ***2005. Mercury shall not be exempted by this provision.***

The term label is used in place of "decoration." This is intended to focus on the practical purposes for using an "applied ceramic label" on glass or ceramic packaging. "Decoration" is a term used in the glass and ceramic industry to refer to surface treatments that serve both utilitarian and ornamental purposes. To those outside the industry, however, it suggests an unnecessary aesthetic function and is, therefore, misleading. Applied ceramic labels are used as an alternative to paper or other forms of labeling of a product. The label bears essential information about the content, its use, and, in some cases, warnings or other information required by law.

Applied ceramic labels are used where the product manufacturer desires a permanent label capable of:

- repeated dishwashing, as in milk bottles or returnable soda bottles;
- extensive, long-term handling, such as cosmetic containers that last a relatively long time and are handled repeatedly;
- withstanding various temperatures including exposure to ice and/or ice cold water, as are beverage bottles in some social settings;
- withstanding other environmental stress such as lengthy exposure to sunlight;
- long-term durability as required for certain valuable collector bottles.

Recommendation 7:

The TPCH recommends regular state review of the model legislation and its exemptions.

For future consideration of continuing exemptions, the following changes to the Model Toxics in Packaging Legislation are recommended:

Section 8. State Review

*[The state administrative agency] shall, in consultation with the ~~Source Reduction Task Force of Coneg~~ **Toxics in Packaging Clearinghouse (TPCH)**, review the effectiveness of this Act **within five years of its adoption and every 5 years thereafter** ~~no later than forty-two (42) months after its adoption~~ and shall provide a report based upon that review to the Governor and ~~L~~**l**egislature. The report may contain recommendations to add other toxic substances contained in packaging to the list set forth in this Act in order to further reduce the toxicity of packaging waste, and a description of the nature of the substitutes used in lieu of lead, mercury, cadmium, and hexavalent chromium.*

*[The ~~S~~**s**tate administrative agency] shall, in consultation with the ~~Source Reduction Task Force of CONEG~~ **TPCH**, review the extension of **any exemption** as it is provided for in ~~Subsection (c) of~~ Section 5 of this Act. This review shall commence no later than January 1, ~~1997~~ **two years prior to the expiration of the exemption.** A report based upon that review shall be provided to the Governor and ~~L~~**l**egislature by January 1 ~~1999~~ **of the year prior to the expiration of the exemption.**.*

CHAPTER FIVE: REGULATING ADDITIONAL SOURCES OF TOXICS

Application of Legislation to Other Compounds

Section 8 (State Review) of the Model Legislation calls for the appropriate state administrative agency to conduct a periodic effectiveness review of the enacted law. That review provides the state with the opportunity to recommend other toxic substances to the existing law. Although the TPCH is not recommending adding additional toxics to the Model Legislation at this time, the TPCH will need to identify a scientific, peer reviewed toxics protocol, should the states and/or the TPCH decide to pursue this matter in the future.

Toxics in Products

Several states concerned about airborne mercury from municipal solid waste (MSW) incinerators are considering the benefits of "Toxics in *Products"* laws to target the same metals as the Toxics in Packaging laws. To date, Minnesota is the only state that has passed such legislation. A widely adopted Toxics in Products law would complement the Toxics in Packaging law and would have the potential to contribute significantly to the long term strategy of reducing toxics emissions. Some states (including Maine and Vermont) have adopted product legislation which is designed to boost the infrastructure of recycling, but efforts to reduce at the source are equally, if not more, effective in addressing the problem.

The success of the Toxics in Packaging laws in the states demonstrates the benefits of states working together to solve common environmental problems. States should work together to avoid a variety of laws that are inconsistent among the states and, consequently, difficult for industry to follow. Further, industry should be invited to participate in the process to help establish realistic dates by which manufacturers can develop non-toxic alternatives. The TPCH strongly recommends that any initiatives in drafting additional toxics in products laws be done using this same approach—as was used in the development of the Toxics in Packaging law. Allowing industry to provide their perspective on decisions which affect their businesses can only further strengthen the possibility of achieving permanent solutions.

The current charter of the Toxics in Packaging Clearinghouse does not permit it to consider extension of its jurisdiction to products. Products are more complex than packaging and require whole new inputs and technical considerations, as well as representation from many additional affected groups.

CHAPTER SIX: CONCLUSIONS, FUTURE ACTIONS

Based upon the review of the Model Legislation, its administration, and impact, the following <u>conclusions</u> are presented:

- The model legislation continues to be considered both nationally and internationally as prototype legislation for reducing metals in packaging.

- The TPCH continues to ease the administrative burdens and provides a forum for policy discussions for the participating states and for industries seeking exemptions or clarifications from those states.

- Because the benefits of the TPCH do not extend to nonparticipating states, affected industries must deal separately with those states when applying for exemptions and clarifications.

- With the shift in association to the Council of State Governments from CONEG, the TPCH now has a national forum in which to communicate with other states that have passed or are considering packaging legislation based upon the Model Toxics in Packaging law.

- Uniform Toxics in Packaging Legislation across governmental units is beneficial to both industry and states.

- Methodologies exist and are being used by affected industries to test their packaging for the heavy metals. The test methods have not proven effective for hexavalent chromium, and therefore, a more accurate detection methodology is needed.

- Determining the impact of the Toxics in Packaging laws on the toxicity levels of MSW streams is theoretically feasible, but would be extremely difficult and costly.

- The TPCH is not recommending the regulation of any additional toxic substances in packaging at this time. A toxics protocol should be identified and adopted by the state members of the TPCH before any additional substances are considered for regulation.

- Testing of packaging and enforcement of Toxics in Packaging legislation is critical to the continued success of the law.

The following <u>actions</u> are recommended by the TPCH in order to continue implementing and promoting the Model Toxics in Packaging Legislation:

<u>Actions by the States</u>:

- Implement the recommended changes to the Model Legislation as identified in Chapter 4 of this report.

- Compliance assistance and enforcement efforts should be directed toward ensuring that imported packaging is meeting the same standards as domestic packaging. As a component of these efforts, the TPCH will continue to perform outreach activities and attend national forums to reach both smaller and international companies.

Actions by the TPCH:

- Actively recruit non-member states that have enacted laws based on the Model Toxics in Packaging Legislation to become members in the TPCH;

- Encourage states that are considering Toxics in Packaging Legislation to adopt the model legislation and to become members in the TPCH;

- Develop a plan that can be used by the states for the testing and enforcement of the requirements of the Toxics in Packaging legislation. Sampling protocols and testing methodologies to determine the level of industry compliance with the packaging laws, should be scientifically designed and peer-reviewed for improved statistical accuracy. Additionally, more comprehensive testing may be achieved by pooling resources among the regulated states for a broader sampling range. As resources become available, additional states should engage in the agreed-upon testing strategy.

- Initiate a system for monitoring the developments and gathering data relating to Toxics in Packaging in the U.S. and internationally.

- Identify a pool of experts to assist with technical issues submitted to the Clearinghouse that require specialized scientific expertise or knowledge;

- Continue to update the *Comparative Analysis* of state Toxics in Packaging laws in order to identify variations in provisions;

- Continue to receive all exemption requests and written questions on behalf of the member states, and in turn track and coordinate the dissemination of these requests and questions to the participating states in a timely manner;

- Produce outreach and information materials for both industry and the states regarding the Toxics in Packaging Model Legislation and the TPCH. Assuming that most major companies are aware of the toxics in packaging legislation and are in compliance, future educational efforts will focus on small businesses that may not be aware of their responsibilities.

- Work with the Council of State Governments to promote the Model Legislation to other state governments.

MODEL TOXICS IN PACKAGING LEGISLATION

Summary

The legislation calls for the reduction of lead, mercury, cadmium and hexavalent chromium in packaging or packaging materials used or sold within the state.

Manufacturers and distributors have two years from the effective date of the law to clear inventory and make necessary adjustments to their operations in order to comply with the law.

Manufacturers and distributors of packaging or packaging materials would be required to reduce the sum of the concentration levels of incidentally introduced lead, cadmium, mercury and hexavalent chromium to 600 parts per million two (2) years after the legislation is signed into law; 250 parts per million 3 years after it is signed into law; and 100 parts per million 4 years after it is signed into law. The legislation prohibits the intentional introduction of the four heavy metals during manufacturing or distribution.

The legislation provides an exemption for packaging made from recycled materials; packages and packaging components manufactured prior to the effective date of the legislation; packaging that is essential to the protection, safe handling or function of the package's contents - for example, medical products related to radiation therapy, x-rays, etc.; packages and packaging components for which there is no feasible alternative; reusable packaging for products that are subject to other federal or state health, safety, transportation, or disposal requirements (i.e., hazardous waste); packaging having a controlled distribution and reuse (i.e., beverage containers subject to mandatory deposit requirements); and packaging or packaging component that is glass or ceramic where the decoration has been vitrified and when tested, meets specific requirements.

Manufacturers and suppliers of packaging and packaging components are required to furnish a certificate of compliance to the purchasers of packaging. (This applies to companies who actually put their products in the package and does not apply to the retailer or the individual consumer). The public and the state have access to these certificates.

The legislation also provides for a review process by the state to determine the effectiveness of the Act. More specifically, that review will address the need to continue the recycling exemption and will determine if other toxic substances contained in packaging should be subject to reduction.

updated: December 1998

Model Toxics in Packaging Legislation
of
The Toxics in Packaging Clearinghouse

Section 1. (Title)

Section 2. The legislature finds and declares that:

a. The management of solid waste can pose a wide range of hazards to public health and safety and to the environment;

b. Packaging comprises a significant percentage of the overall solid waste stream;

c. The presence of heavy metals in packaging is a part of the total concern in light of their likely presence in emissions or ash when packaging is incinerated, or in leachate when packaging is landfilled;

d. Lead, mercury, cadmium and hexavalent chromium, on the basis of available scientific and medical evidence, are of particular concern;

e. It is desirable, as a first step in reducing the toxicity of packaging waste, to eliminate the addition of these heavy metals to packaging; and

f. The intent of this Act is to achieve this reduction in toxicity without impeding or discouraging the expanded use of recycled materials in the production of packaging and its components.

Section 3. Definitions

"Package" means: any container, produced either domestically or in a foreign country, providing a means of marketing, protecting or handling a product and shall include a unity package, an intermediate package or a shipping container as defined in American Society of Testing and Materials (ASTM) specification D 996. "Package" shall also mean and include such unsealed receptacles as carrying cases, crates, cups, pails, rigid foil and other trays, wrappers and wrapping films, bags and tubs.

"Distributor" means: any person, firm or corporation who takes title to goods, produced either domestically or in a foreign country, purchased for resale or promotional purposes.

"Packaging Component" means: any individual assembled part of a package which is produced either domestically or in a foreign country, such as, but not limited to, any interior or exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks and labels. Tin-plated steel that meets the American Society for Testing and Materials (ASTM) specification A 623 shall be considered as a single package component. Electro-

galvanized coated steel and hot dipped coated galvanized steel that meets the American Society for Testing and Materials (ASTM) specifications A 525 and A 879 shall be treated in the same manner as tin-plated steel.

"Manufacturing" means: Physical or chemical modification of (a) material(s) to produce packaging or packaging components.

"Distribution" means: The practice of taking title to (a) package(s) or packaging components(s) for promotional purposes or resale. Persons involved solely in delivering (a) package(s) or packaging component(s) on behalf of third parties are not considered distributors.

"Manufacturer" means: Any person, firm, association, partnership, or corporation producing (a) package(s) or packaging component(s) as defined in this Act.

"Supplier" means: Any person, firm, association, partnership, or corporation who sells, offers for sale, or offers for promotional purposes packages or packaging components which shall be used by any other person, firm, association, partnership, or corporation to package (a) product(s).

"Intentional Introduction" means: The act of deliberately utilizing a regulated metal in the formation of a package or packaging component where its continued presence is desired in the final package or packaging component to provide a specific characteristic, appearance, or quality.

The use of a regulated metal as a processing agent or intermediate to impart certain chemical or physical changes during manufacturing, whereupon the incidental retention of a residue of said metal in the final package or packaging component is neither desired nor deliberate, is not considered intentional introduction for the purposes of this Act where said final package or packaging component is in compliance with subsection c of Section 4 of this Act.

The use of recycled materials as feedstock for the manufacture of new packaging materials, where some portion of the recycled materials may contain amounts of the regulated metals, is not considered intentional introduction for the purposes of this Act where the new package or packaging component is in compliance with subsection c of Section 4 of this Act.

"Incidental Presence" means: The presence of a regulated metal as an unintended or undesired ingredient of a package or packaging component.

Section 4. Prohibition/Schedule for Removal of Incidental Amounts

a. As soon as feasible but not later than two years after the adoption of this Act, no package or packaging component shall be offered for sale or for promotional purposes by its manufacturer or distributor in the state of _____, which includes, in the package itself or in any packaging component, inks, dyes, pigments, adhesives, stabilizers or any other additives, any lead, cadmium, mercury or hexavalent chromium which has been intentionally introduced as an element during manufacturing or distribution as opposed to the incidental presence of any of these elements.

b. As soon as feasible, but not later than two years after the adoption of this Act, no product

shall be offered for sale or for promotional purposes by its manufacturer or distributor in the state of _____in a package which includes, in the package itself or in any of its packaging components, inks, dyes, pigments, adhesives, stabilizers or any other additives, any lead, cadmium, mercury or hexavalent chromium which has been intentionally introduced as an element during manufacturing or distribution as opposed to the incidental presence of any of these elements.

c. The sum of the concentration levels of lead, cadmium, mercury and hexavalent chromium present in any package or packaging component shall not exceed the following:

600 parts per million by weight (0.06%) effective two (2) years after adoption of this statute;

250 parts per million by weight (0.025%) effective three (3) years after adoption of this statute; and

100 parts per million by weight (0.01%) effective four (4) years after adoption of this statute.

Section 5. Exemptions

All packages and packaging components shall be subject to this Act except the following:

a. those packages or package components with a code indicating date of manufacture that were manufactured prior to the effective date of this statute; or

b. those packages or packaging components to which lead, cadmium, mercury or hexavalent chromium have been added in the manufacturing, forming, printing or distribution process in order to comply with health or safety requirements of Federal law, provided that the manufacturer of a package or packaging component must petition the [State administrative agency] for any exemption from the provisions of this subsection for a particular package or packaging component based upon either criterion; and provided further that the [State administrative agency] may grant an exemption for up to two years if warranted by the circumstances; and provided further that such an exemption may, upon reapplication for exemption and meeting the criteria of this subsection, be renewed at two-year intervals; or

c. packages and packaging components that would not exceed the maximum contaminant levels set forth in subsection c of Section 4 of this Act but for the addition of recycled materials; and provided that the exemption for this subparagraph shall expire January 1, 2010; and shall not apply to any cadmium, lead, mercury or hexavalent chromium that has been recovered and/or separated from other materials for use as a metal or metallic compound; or

d. those packages or packaging components to which lead, cadmium, mercury or hexavalent chromium have been added in the manufacturing, forming, printing or distribution process for which there is no feasible alternative, provided that the manufacturer of a package or packaging component must petition the [State administrative agency] for any exemption from the provisions of this subsection for a particular package or packaging component based upon the criterion and submit such documentation as necessary to support the request for the exemption; and provided further that the [State administrative agency] may grant an exemption for up to two years if warranted by the circumstances; and provided further that such an exemption may, upon reapplication for exemption and meeting the criterion of this subsection, be renewed at two-year intervals. For purposes of this subsection, a use for which there is no feasible alternative is one in which the petitioner conclusively demonstrates that the regulated substance is essential to the protection, safe handling, or function of the package's contents and that technical constraints preclude the substitution of other materials. "No feasible alternative" does not include use of any of the regulated metals for the purposes of marketing; or

e. packages and packaging components that are reused but exceed contaminant levels set forth in subsection c of Section 4 of this Act, provided that the product being conveyed by such package and/or the package\packaging component is (are) regulated under Federal and/or State health or safety requirements; and provided that transportation of such packaged product is regulated under Federal and/or State transportation requirements, and provided that disposal of such package is performed according to Federal and/or State radioactive or hazardous waste disposal requirements, and provided that an exemption under this subparagraph shall expire on January 1, 2010; or

f. packages and packaging components having a controlled distribution and reuse that exceed the contaminant levels set forth in subsection c of Section 4 of this Act, provided that the manufacturer or distributor of such packages or packaging components must petition the (State administrative agency) for exemption and receive approval from the (State administrative agency, working with the CONEG Toxics in Packaging Clearinghouse) according to standards in subsection f.1 below set by such agency and based upon satisfactory demonstrations that the environmental benefit of the controlled distribution and reuse is significantly greater as compared to the same package manufactured in compliance with the contaminant levels set forth in subsection c of Section 4; and provided that an exemption under this subparagraph shall expire on January 1, 2010; and

f.1. Standards - A plan, to be proposed by the manufacturer seeking the exemption of his designee, shall include each of the following elements:

i. a means of identifying in a permanent and visible manner those reusable entities containing regulated metals for which an exemption is sought;

ii. a method of regulatory and financial accountability so that a specified percentage of such reusable entities manufactured and distributed to other persons are not discarded by those persons after use, but are returned to the manufacturer or his/her designee;

iii. a system of inventory and record maintenance to account for reusable entities placed in, and removed from, service;

iv. a means of transforming returned entities, that are no longer reusable, into recycled materials for manufacturing or into manufacturing wastes which are subject to existing Federal and/or State laws or regulations governing such manufacturing wastes to ensure that these wastes do not enter the commercial or municipal waste stream; and

v. a system of annually reporting to the (appropriate State administrative agency) changes to the system and changes in designees.

g. A glass or ceramic package or packaging component which has a vitrified label when tested in accordance with the Toxicity Characteristic Leaching Procedures of US EPA Test Method and publication SW 846, 3rd edition, "Test Methods for Evaluating Solid Waste," does not exceed 1.0 ppm for cadmium, 5.0 ppm for hexavalent chromium and 5.0 ppm for lead; exemption under this subparagraph shall expire on January 1, 2005. Mercury shall not be exempted by this provision.

Section 6. **Certificate of Compliance**

As soon as feasible, but not later than two years after the adoption of this Act, a Certificate of Compliance stating that a package or packaging component is in compliance with the requirements of this Act shall be furnished by its manufacturer or supplier to its purchaser provided, however, that where compliance is achieved under the exemption(s) provided in subsection 5, the Certificate shall state the specific basis upon which the exemption is claimed. The Certificate of Compliance shall be signed by an authorized official of the manufacturing or supplying company. The purchaser shall retain the Certificate of Compliance for as long as the package or packaging component is in use. A copy of the Certificate of Compliance shall be kept on file by the manufacturer or supplier of the package or packaging component. Certificates of Compliance, or copies thereof, shall be furnished to the [state administrative agency] upon its request and to members of the public in accordance with section 9.

If the manufacturer or supplier of the package or packaging component reformulates or creates a new package or packaging component, the manufacturer or supplier shall provide an amended or new Certificate of Compliance for the reformulated or new package or packaging component.

Section 7. Enforcement

[Each state to add its own enforcement provisions]

Section 8. **State Review**

[The state administrative agency] shall, in consultation with the Toxics in Packaging Clearinghouse (TPCH), review the effectiveness of this Act within five years of its adoption and every 5 years thereafter. The agency shall provide a report based upon that review to the Governor and Legislature. The report may contain recommendations to add other toxic substances contained in packaging to the list set forth in this Act in order to further reduce the toxicity of packaging waste, and a description of the nature of the substitutes used in lieu of lead, mercury, cadmium, and hexavalent chromium.

[The State administrative agency] shall, in consultation with the TPCH, review the extension of any exemption as it is provided for in Section 5 of this Act. This review shall commence no later than January 1, two years prior to the expiration of the exemption. A report based upon that review shall be provided to the Governor and Legislature by January 1 of the year prior to the expiration of the exemption.

Section 9. Public Access

Any request from a member of the public for any Certificate of Compliance from the manufacturer or supplier of a package or packaging component shall be:

a. Made in writing with a copy provided to the [state administrative agency];

b. Made specific as to package or packaging component information requested; and

c. Responded to by the manufacturer or supplier within 60 days.

Section 10. Effective Date

This Act shall become effective immediately upon adoption.

Section 11. Severability and Construction

The provisions of this Act shall be severable, and if any court declares any phase, clause, sentence, or provision of this Act to be invalid, or its applicability to any government, agency, person, or circumstance is declared invalid, the remainder of the Act and its relevant applicability shall not be affected. The provisions of this Act shall be liberally construed to give effect to the purposes thereof.

As revised, December 1998.

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(Updated December 1998)

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History of the Toxics in Packaging Clearinghouse

CONEG created the Source Reduction Council (SRC) to develop region-wide policies and programs aimed at reducing the volume and toxicity of packaging wastes.

Since the mid-1980s, the Northeastern U.S. has been a focal point for policy debates concerning the development of strategies to improve the management of solid wastes. The density of the Northeast region's population and limitations on land and other resources necessary to support traditional disposal methods led the Northeastern Governors to consider options for managing the solid waste problem. In August 1988, CONEG established the SRC, a unique partnership of state officials, industry representatives, and nonprofit and environmental organizations, to develop policies and meaningful initiatives designed to reduce packaging wastes. In 1991, the SRC was restructured into the Source Reduction Task Force (SRTF). The Toxics in Packaging Clearinghouse (TPCH) was created in 1992, and the SRTF was discontinued in 1996. In 1998, the TPCH contracted with the Council of State Governments for administrative services.

The SRTF and its advisory group of industry and nonprofit members aimed to achieve the following objectives:

- Encourage cooperative action among industry, nonprofit organizations, and state decision-makers to further reduce toxics in packaging and products;
- Place state decision-makers in direct contact with those whose actions affect packaging;
- Encourage leadership and coordination of the Northeastern states' solid waste policies and activities; and
- Encourage credible, voluntary, and market-based source reduction activities that reduce the amount of materials going to the waste stream while giving industry the flexibility to meet customer needs.

The SRTF became an essential means by which state decision-makers obtained information about technical, economic, and market issues concerning packaging source reduction. Task Force programs and projects also provided CONEG states with the framework for encouraging consistent, compatible source reduction policies and practices within the region. Programs and projects sponsored by the Task Force included the following:

- The "Preferred Packaging Guidelines" recommended, in descending order of priority, that companies (1) eliminate packaging whenever possible, or (2) minimize packaging, or (3) design packaging to be refillable or reusable, or (4) design packaging to contain recycled material or be recyclable.

- The Model Toxics in Packaging Legislation requires the reduction of four metals in packaging to incidental levels. The Toxics in Packaging Clearinghouse (TPCH) assists the states and industry with administration of the laws.

- The proposed Model Packaging Standards Legislation provided interested states with a statutory means to bring about weight and volume reductions in packaging, as opposed to toxics in packaging. The legislation was introduced in two states but was never adopted.

- The CONEG Challenge encouraged companies to voluntarily reduce their packaging—using the "Preferred Packaging Guidelines"—and to inform public policymakers of their actions and the results of those actions.

- The CONEG Challenge Awards program acknowledged the source reduction efforts of companies that have taken the Challenge through a national competition and award program.

The Toxics in Packaging Model Legislation originally responded to the Northeastern Governors' concerns about the potential adverse public health and environmental impacts resulting from the presence of heavy metals in the municipal solid waste stream.

Although the Governors recognized and applauded industry's voluntary efforts to remove toxic constituents from packaging, they still agreed to support development of a policy mandating the removal from packaging of four metals (lead, mercury, cadmium, and hexavalent chromium) considered to pose potentially significant risks to the public's health and the environment when present in the municipal solid waste stream. An extensive body of information, studies, and reports from government (Federal, state, and international) and from independent sources (universities, medical schools, industry, and environmental groups) assisted the SRC and the Governors in determining a course of action.

With implementation of the Toxics in Packaging laws, industries have raised issues concerning its requirements and administrative provisions.

The Model Toxics in Packaging Legislation has enjoyed almost unprecedented success in terms of its wide acceptance by individual states. As of December 1998, eighteen states have enacted the proposal into law, and its provisions have been adopted by members of the European Union. Soon after its first enactment, state agencies realized that, despite its self-certification provisions, the law presented certain administrative challenges. The TPCH responded to issues and concerns raised by industry regarding the laws' requirements. These include the following:

- **Administrative burdens**, as a result of the laws' requirements that manufacturers, their suppliers, and customers complete and maintain records of certificates of compliance on all packages they make or use;

- **Economic burdens** on small businesses that are not staffed or equipped to meet the laws' administrative requirements;

- **Adverse market impact** on small businesses that could not develop or use alternative materials or processes without incurring a substantial economic burden;

- **Misinformation or lack of information** about the laws and their requirements, including differences between the states;

- **Differing views regarding the potential health and environmental risks** associated with the presence of the regulated metals in certain packaging materials; and

- **Confusion regarding the exemption application process.**

In 1992, the Toxics in Packaging Clearinghouse (TPCH) was established as a forum to address these concerns, assist states with processing exemption and clarification requests, and respond to industry inquiries about the laws' requirements. This forum would also provide the means by which industry and the states could resolve their differences concerning the administration of the laws.

Anecdotal evidence of industry actions to reduce the regulated metals from packaging indicates the positive effect of the Toxics in Packaging laws.

Although the Task Force has not been able to quantify the effects of the Toxics in Packaging laws on the regulated metals content of the MSW stream, industry has provided information through the annual CONEG Challenge program report to the Governors illustrating manufacturers' efforts to reduce or eliminate the presence of these four metals in packaging and packaging components. While most companies reported efforts to eliminate pollutants or environmentally harmful substances from their packaging and packaging components, companies that specifically mentioned efforts to ensure compliance with the Model Toxics in Packaging Legislation are noted below:

- *Baxter Healthcare Corporation* report's as one of its goals that "no heavy metals are intentionally added to inks, dyes, adhesives, or other packaging components."

- *Bristol-Myers Squibb* reports using only "packaging materials and printing inks that are free of heavy metals."

- *Clorox* "has placed itself in full compliance with CONEG's Model Toxics Legislation by eliminating all heavy metals from its inks and pigments for packaging."

- *Digital Corporation*'s statement of source reduction goals includes reducing "heavy metal content in packaging to a minimum, less than 100 parts per million."
- *Eastman Kodak Company*'s Corporate Packaging Environmental Committee is charged to "address the toxics in packaging issue to ensure compliance with the CONEG model legislation," among other responsibilities.

- *The Gillette Company* eliminated heavy metals in inks, dyes, and colorants from all packaging materials in North America by 1992 and in Europe by 1993.

- *International Business Machines* "certifies heavy metals reductions" in its packaging as one of its worldwide packaging initiatives.

- *Johnson & Johnson* removed "heavy metal printing inks . . . from all packaging prior to 1991."

- *Lever Brothers Company* reports "by working with its printed material vendors, Lever was one of the first companies to voluntarily reduce heavy metal content for inks used in its packages to meet CONEG requirements."

- *Millipore Corporation* reports "the packaging suppliers' certification of heavy metal reductions in packaging, per the CONEG model, was initiated in 1992, with a 70 percent compliance response from suppliers in that year. The remaining suppliers will provide the same information when the verification is complete."

- *Mobil Chemical Company* "will continue to assure compliance with the CONEG Toxics in Packaging Model Legislation for heavy metals in inks, additives, and other packaging components."

- *Scott Paper Company* "will not allow the intentional inclusion of heavy metals in its packaging, and will meet or be lower than the most stringent requirements for total heavy metal content in each of its packages, as defined in legislation developed by CONEG's Source Reduction Council."

More detailed reports from these and other companies that have taken the CONEG Challenge are included in The CONEG Challenge, Voluntary Packaging Reductions by Industry (November 1993).

SAMPLE

REDUCTION OF TOXICS IN PACKAGING LAW
CERTIFICATE OF COMPLIANCE

We certify that all packaging and packaging components sold to (Company Name) or its subsidiaries in the State of (State Name) comply with the requirements of this law; namely that the sum or incidental concentration levels of **lead, mercury, cadmium & hexavalent chromium** present in any package or packaging component shall not exceed the following:

- **600 Parts Per Million by weight**
  (Effective two years after the legislation was signed into law)

- **250 Parts Per Million by weight**
  (Effective three years after the legislation was signed into law)

- **100 Parts Per Million by weight**
  (Effective four years after the legislation was signed into law)

We further certify that in cases where the regulated metals are present at levels below the schedule stated above, the regulated metals were not intentionally added during the manufacturing process.

COMPANY NAME: _____

ADDRESS: _____

_____

CERTIFIED BY: _____ _____
(Name) (Signature)

_____
(Title)

Date: _____

We will maintain adequate documentation of this certification for inspection upon request.

SAMPLE

REDUCTION OF TOXICS IN PACKAGING LAW CERTIFICATE OF COMPLIANCE: EXEMPTION STATUS

We certify that all packaging and packaging components sold to (Company Name) or its subsidiaries in the state of (State Name) are in compliance with this law. However, certain packages or packaging components produced by (Company Name) are exempt from this law for one or more of the following reasons:

- **Package and/or packaging components were made or delivered before the effective date of the statute prohibition;**

(List package or packaging components.) _____

_____

- **Package and/or packaging component contains heavy metals in order to comply with federal health and safety requirements, and there is no feasible alternative;**

(List package or packaging components.) _____

_____

- **Package and/or packaging component is made from post-consumer material.**

(List package or packaging components.) _____

_____

COMPANY NAME: _____

ADDRESS: _____

_____

CONTACT PERSON: _____

CERTIFIED BY:

_____ _____

(Name) (Signature)

_____ _____

(Title) (Date)

We will maintain adequate documentation of this certification for inspection upon request.

CONEG MODEL TOXICS-IN-PACKAGING LEGISLATION
Question and Answer Document

1. **Q. <u>Certification</u>:** Is the supplier of a package or package component required under the law to certify to the purchaser that the four (4) heavy metals were not intentionally added during the manufacturing process, or must the supplier also certify that the package or component was tested and falls at or below the parts-per-million threshold set in the law?

   A. *The certification would require the following:*

   - *The actual certificate stating that the four heavy metals were neither intentionally introduced nor are incidentally present in excess of the allowable maximum concentrations.*

   The state agencies responsible for enforcing this law will assume, when receiving a Certificate of Compliance consistent with the Toxics-in-Packaging Legislation, that the company has done what is reasonably necessary to stand behind its certification. In cases where the company has existing documentation to verify that each package complies, no further testing will be necessary and that documentation may be substituted for actual test results. A certification prepared without testing should be based on verifiable evidence that there has been "no intentional addition".

   However, for those companies that cannot document the amount of heavy metals in their package or packaging components, or know them to be present as incidental trace contaminants, a certain level of testing will be necessary. The test method chosen and its lower detection limit are at the discretion of the company and may vary from company to company and from package type to package type, provided that the test is capable of conclusively proving that the total of the four regulated metals is below 100 ppm. It is not expected that each and every package will be individually tested, although that is certainly the company's option. Instead, random sampling on a reasonable statistical basis is considered to be a sufficient level of testing to comply with the legislative requirements.

2. **Q. <u>Exemption - recycled content:</u>** Would a package or package component be exempt from the law if it were made wholly or in part from post-industrial waste (e.g., metal scrap purchased from automobile manufacturing plants that was subsequently made into cans or other packaging components)?

   A. *Yes. The exemption applies to both post-consumer and post-industrial waste. This example illustrates post-industrial waste. It should be noted that packages or packaging components manufactured from non-packaging post-consumer materials (e.g., used appliances and automobiles made into cans) would also be eligible for this exemption.*

3. **Q. <u>Exemption - recycled content:</u>** Would lead chromate pigment be exempt if it were made from post-consumer recycled materials, such as scrap automobile batteries?

A. *No. The exemption applies only to recycled composite materials such as plastic or paper, which might coincidentally contain a regulated metal but are being reprocessed for their primary material content, and not to the four regulated metals or their compounds that have been separated or isolated from recycled materials. This includes pigments.*

4. **Q. <u>Exemption - wrapping paper, ribbons, bows, stickers, toys, etc.:</u>** Does the law apply to gift wrapping paper (and related items) -- items purchased solely for the use of individual consumers to wrap presents in the home, or to be attached to those presents?

A. *No. Wrapping paper, ribbons or tape, items attached to a product and related items are products, not packages, if sold to the consumer for home use and as such are not subject to the law. Packages that are sold to the consumer as "gift-wrapped" items would be subject to the law. Promotional items such as candy or toys which are attached externally to "gift-wrapped" packages are not considered part of the package and are not subject to the law (except, of course, for any additional packaging which might surround those items themselves).*

5. **Q. <u>Soluble vs. insoluble:</u>** Does the law apply equally to water-soluble or insoluble forms of the four heavy metals? Does it make a difference with regard to soluble or insoluble forms if the package is incinerated?

A. *The law applies to both soluble and insoluble forms of the four heavy metals and no distinction is made between them. For example, the effects of lead uptake in the human body due to ingesting of paint chips, ink, etc. are essentially the same for the various forms of lead regardless of their initial water solubility.*

With regard to incineration, it is well documented that maximizing the removal of heavy metals in waste prior to incineration reduces air emissions and leachate problems from ash (bottom ash and fly ash), including when such ash is subsequently disposed of on land. High-temperature combustion normally converts the heavy metal compounds (whether initially water-soluble or insoluble) in the waste being burned into other compounds, primarily oxides, hydroxides, chlorides or other salts, or into metallic particulates, which can enter either the stack gas or the ash streams. The sole exception demonstrated to date is vitrified labels on glass or ceramic packaging, provided that such packaging has passed the test methods specified in the law. This unique behavior of vitrified glass and ceramic labels during incineration, which thus far has not been satisfactorily demonstrated for other materials, is recognized by an exemption for these labels. The exemption does not apply to non-vitrified labels or to mercury and its compounds.

6. **Q. Hexavalent chromium:** Is hexavalent chromium more toxic than other forms of chromium?

A. *The toxicological information available on chromium compounds clearly indicates that the hexavalent form is more toxic than other forms.*

7. **Q. Intentional addition during the manufacturing process:** In a situation where one or more of the heavy metals were used in the manufacturing process but were not intended to be part of the final package (i.e., used as a cleaning or oxidizing agent), would the package be in compliance with the law if it contained trace amounts of the heavy metal, below 100 parts per million?

A. *Yes. The package would be in compliance since the regulated heavy metal was used only to aid in a step of the manufacturing process, and any residual metal would be incidentally present if it is neither desired in, nor its continued presence imparts any desirable characteristic or appearance to, the final package. Trace amounts of residual metal resulting from the use of a processing aid or similar material during production of a product from which a package or packaging component is manufactured, and which processing aid is reasonably expected to be consumed, transformed into a non-regulated chemical during the process, washed or dissolved away, or otherwise nearly all removed during processing, would not make the final package or packaging component non-compliant if the total residual metal level were below 100 ppm, as this is not considered intentional addition of the regulated heavy metal.*

8. **Q. Trace amounts:** May a manufacturer sell a package or packaging component that has 100 parts per million or less of the regulated metal that resulted from deliberate addition during the manufacturing process, with the knowledge and intent that its presence would change the appearance or characteristics of the final package or packaging component?

A. *No. The intent of the law is to prohibit any intentional addition of the four heavy metals in packaging, even if the concentration levels are below the threshold for incidental amounts.*

9. **Q. Recycled vs. intentional addition:** If a regulated metal were deliberately added to a package otherwise made of totally recycled material, for example a cadmium pigment added to change the color of a pail made of recycled plastic, would the package be exempt based on recycled content?

A. *No. The intentional addition of a regulated metal to change the appearance or characteristics of a final package is not permitted, regardless of the source of starting material used to manufacture the package, unless the package qualifies under the "reuse" exemption whereby each individual package is reused many times and its distribution and retrieval are closely controlled and documented throughout its lifetime. To qualify for the recycling exemption, the regulated metal in question must have been present as a minor ingredient in the discarded waste material before that waste material was designated for recycling.*

10. **Q. Exemption for recycled content:** For the recycled content exemption, does the exemption apply to the whole complete package, or only to that portion of the package that is made from recycled material?

A. *The Model Legislation language differentiated between the package and packaging components; therefore, the exemption could apply to either or both. For a package where all components contain recycled content that would cause exceedance of the compliance level, the entire package is exempt. However, in the case where one packaging component contains recycled content and the other components do not, only the component containing recycled content would be exempt and not the entire package.*

11. **Q. Standardized testing:** Although the Model Legislation does not address testing, there have been a number of inquiries on this issue. Some companies are concerned that testing methods, if required by the States, will vary from State to State, or if specific testing is not required but left to the discretion of the producer, the acceptance of the validity of test results may vary from State to State. Do the States recommend one standard test?

A. *No. When the Model Legislation was developed in 1989 by the Source Reduction Council, several different testing methods were discussed. There was general agreement that all commonly available testing methods currently in use are accurate enough to the 100 ppm level. The committee agreed that 100 ppm was essentially a trace level, and therefore any differences in test method sensitivity below that threshold level would be inconsequential. Although testing methods would be left to the discretion of each State, or more likely would be left to each individual company, for guidance it was suggested that the States and companies refer to the American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA, 19103-1187, tel. (610)832-9500,* www.astm.org*, 1990 Edition, and/or U.S. EPA Office of Solid Waste and Emergency Response publication "Test Methods for Evaluating Solid Waste", SW-846, 3rd edition, November, 1986. Document SW-846 may be ordered as Document #PB88-239223 from National Technical Information Services (NTIS), Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, tel. 1-800-553-6847.*

12. **Q. Enforcement discretion:** How is enforcement coordinated by the states?

A. *Enforcement is on a state-by-state basis. However, the States have established the Clearinghouse for the purpose of leading a coordinated effort on implementation and enforcement of the toxics-in-packaging legislation.*

13. **Q. Exemption for lead-containing solder:** Is there an exemption for packaging that is manufactured using solder that contains lead?

A. *No. The Model Legislation specifically prohibits the intentional introduction of the four regulated heavy metals into packaging such as from leaded solder. Originally there was a four-year period allowed for cans and other containers to achieve compliance.*

During that period both the can industry and the solder industry were able to come up with technical breakthroughs (i.e., deep-drawn seamless cans and lead-free tin solder, respectively) which negated any future need to exempt lead-containing solder.

Through the combined efforts of the steel, solder, and can manufacturing industries, the U.S. Food and Drug Administration, and the Toxics-in-Packaging Clearinghouse, since 1992 new technology has been developed and implemented in the United States to eliminate the use of lead solder in all beverage, food and general purpose cans (including paint, aerosol, and other general use metal containers).

14. **Q. <u>Applicability of the law to steel cans</u>:** Does the law apply to all such cans, regardless of size or use?

A. *Yes. The definition of a package under the law includes all steel cans and therefore the law applies regardless of size or use.*

15. **Q. <u>Applicability of the law to imported packaging</u>:** What about packaging, including cans or other containers,imported from outside the United States?

A. *All packaging, including, cans or other containers, imported from outside the country into states that have passed the legislation must be in full compliance with the limits on the regulated metals.*

It should be further noted that on June 21, 1993 the Food and Drug Administration announced that it was promulgating regulations to ban the use of lead solder in food cans sold anywhere within the United States. This regulation applies equally to imported cans that might still contain lead solder as well as domestically produced cans. It is the responsibility of the importer to test or otherwise ensure that any such cans proposed to be brought anywhere into the United States have not been fabricated with lead-containing solder.

16. **Q. <u>Sale of non-compliant packages after the effective date:</u>** Is packaging manufactured before the effective date exempt even if it is sold after the effective date?

A. *Yes. If the package has a date of manufacture or the producing company can provide documentation that the package in question was manufactured prior to the effective date, or was in the process of being manufactured prior to the effective date, it is exempt. Situations that are beyond the control of the manufacturer -- e.g., old stock being held by retailers -- should be dealt with on a case-by-case basis by the States.*

In all cases, packaging that was manufactured after the effective date must be in compliance or else it cannot be sold or distributed in that State. Packaging that does not bear a date of manufacture on its label, and would be considered out of compliance due to its regulated metals content, may be sold only if the manufacturer can supply other supporting documentation to the State that it was manufactured prior to the effective date.

17. **Q. <u>Envelopes:</u>** Are envelopes used by a business considered to be a "package" under the law?

A. *Yes. The definition of a package in the law under ASTM D 996 (see attachment) includes the term "envelope" (85a, page 222, ASTM D 996). This would include Federal or Airborne Express and U.P.S. packages. In this case the <u>user</u> who fills the envelope (which until this point is a product) with material for transport, thereby making it a package, is the responsible party for ensuring that it does not contain heavy metals. It is recommended that users of such packaging ask their respective express carrier agencies for Certificates of Compliance.*

18. **Q. <u>Reusable or refillable containers:</u>** Are collectible packages, such as ceramic containers or crystal decanters, subject to the law?

A. *If collectable packages are sold containing products, which makes them packages. An exemption is available for those glass or ceramic containers that bear a permanent <u>vitrified</u> label and can pass the leachability test specified in the law. It has been demonstrated that ceramic and/or glass packaging having non-vitrified surface glazes, paint or enamels containing lead or cadmium may be able to release these regulated metals upon being discarded, even where they appear to be stable under normal conditions of use, at or around room temperature. However, the metals may volatilize during high-temperature incineration or solubilize after landfilling (including the landfilling of incinerator ash). It has been shown that vitrification of the label before use generally prevents this release from occurring.*

However, if the container is sold without being filled with a product, such as an empty coffee cup or empty decanter for home use, it is a product itself and not subject to the law.

19. **Q. <u>Packages:</u>** Are railroad tank or box cars, refillable propane tanks, chlorine cylinders, bulk tank trucks/trailers, and shipping containers considered packages under the legislation?

A. *Railroad tank or box cars and bulk tank trucks/trailers are <u>not</u> packages, while refillable propane tanks, chlorine cylinders and shipping containers are considered packages under the legislation. These distinctions are based on the definition of "package" in the law under ASTM D 996.*

20. **Q. <u>Exemptions - automatic vs. petition:</u>** Which exemptions require petitioning to the States and which are automatic, simply requiring mention in the Certificate of Compliance?

A. *The exemption for package and packaging components involving use of recycled material or date of manufacture prior to the effective date of the legislation do not require petitions, but must be cited in the Certificate of Compliance and must be verifiable. All other exemptions require a petition and must include supporting documentation.*

21. **Q. <u>Certificate of Compliance:</u>** Can a manufacturer or supplier use one Certificate of Compliance for all of its packages or packaging components, or is a separate Certificate of Compliance necessary for each type?

A. *Packages and packaging components that use the same materials and differ only in size, shape and/or use can be included in the same Certificate of Compliance. (See sample Certificate of Compliance).*

22. **Q. <u>Sum of the concentration levels</u>:** What is meant by "sum of the concentration levels" for single-component vs. multi-component packages?

A. *Single-component Package -- The concentration level, expressed in parts per million (ppm), should be determined for each of the four metals and these numbers added together (summed). This summation must be within the limit of 600, 250 or 100 ppm, depending on the promulgation date of the law in a particular State.*

Multi-component Package -- The four regulated metals are not summed or averaged across all packaging components that together comprise a package. Rather, the concentration level, expressed in ppm, should be individually determined for each metal and summed for each packaging component within the package. Each packaging component must comply individually with the legal limit of of 600, 250 or 100 ppm, depending on the promulgation date of the law in a particular State.

23. **Q. <u>Certain glass and ceramic products:</u>** Are the following types of glass and ceramic products subject to the law: a) mugs, steins, tumblers and similar premiums used to hold beverages sold at food counters or beverage establishments, or to hold candy, coffee or other items and sold as souvenirs, ad specialties, promotions, etc.; b) flower vases and other containers that make up floral arrangements; c) apothecary jars or other items holding wax and used as a candle holder or to store other household items on a permanent basis?

A. *No. In these cases, the items are manufactured as products and only incidentally hold other items during final distribution to the end user. The glass or ceramic products in question are not designed solely to contain and protect the goods inside for transport and handling during distribution, generally do not have closures, have intrinsic value as an artistic or useful object in themselves which is often reflected in the selling price if sold, are intended to be retained beyond the life of the item inside and not promptly discarded after the contents have been consumed or used, are generally used more than once, may serve a useful technical function in themselves during use of the contents as in the case of candle holders, and almost always require some sort of external packaging to protect the glass or ceramicware during distribution. The term "cup" in Section 3 of the Model Legislation refers to any cup designed for single use and which is normally discarded promptly after the product inside has been consumed or removed.*

24. **Q. <u>"Recycled materials" definition:</u>** What is meant by the term "recycled materials" as used in Section 5, paragraph c?

A. *Recycled materials are those materials generated by a business or a consumer which have been separated from solid waste for the purpose of recycling as a secondary material feedstock. For purposes of this legislation, recycled materials include paper, plastic, wood, glass or ceramics, metals such as steel, aluminum, stainless steel or copper, and other materials. However, recycled materials under the toxics-in-packaging law do not include the four regulated metals (lead, cadmium, hexavalent chromium and mercury) which have been separated into their elemental or other chemical state for recycling as a secondary material feedstock. For example, lead processed from used automotive batteries and intentionally added as a component to manufacture an ink pigment which is then used to print labels on packaging would not be a "recycled" material for the purposes of Section 5 paragraph c. (See Question 3)*

25. **Q. <u>"Single" vs. "separate" packaging component:</u>** Are ceramic enamels or decals that have been vitrified, such that they become part of the glass or ceramic matrix, to be considered a separate packaging component?

A. *No. When materials used to produce the label are applied to the glass or ceramic and subsequently properly vitrified through a high-temperature thermal process, they become part of the glass or ceramic substrate. They are therefore to be considered an integral part of the single packaging component, provided that the vitrification process used produces finished glass or ceramic packages or packaging components that successfully pass the leaching test described in U.S. EPA Document SW-846. This designation does not apply to enamels, decals, labels or other materials that have not gone through an appropriate high-temperature vitrification process after being applied to the glass or ceramic package.*

However, if the container is sold without being filled with a product, such as an empty coffee cup or empty decanter for home use, it is a product itself and not subject to the law.

State-by-State Summary of Compliance and Enforcement Efforts

CONNECTICUT

The Connecticut Department of Environmental Protection (DEP) has not taken any enforcement action to date under the Toxics in Packaging Legislation, Connecticut General Statutes Section (CGS) 22a-255g to 22a-255m. Civil penalties of up to $10,000 may be assessed for any person violating any provision of the legislation (CGS Section 22a-2551 (a)). Persons making false statements in certificates of compliance may be fined up to $50,000 for each false statement, or imprisoned not more than one year, or both (CGS Section 22a-255 l(b)).

Regulations are not required to be promulgated by the legislation. Connecticut relies on companies taking the initiative to be in compliance. The Connecticut DEP, in conjunction with other states and the Toxics in Packaging Clearinghouse, seeks to educate companies about the requirements of the legislation.

IOWA

No enforcement actions have been taken to date.

MAINE

The Maine DEP has not taken any enforcement action under Maine's *Reduction of Toxics in Packaging* law. Any manufacturer or supplier not in compliance with the law commits a civil violation for which a fine of not more than $100.00 may be adjudged. Each package or packaging component in violation constitutes the basis of a separate offense.

Maine DEP is planning a public and business education initiative and a package compliance testing program for 1999/2000 as part of the state's mercury reduction strategy.

MINNESOTA

The Minnesota Pollution Control Agency has not taken any enforcement actions to date. In general, Agency staff have found that larger manufacturers and suppliers who do business beyond Minnesota's borders were already in compliance since at least nine other states had toxics legislation in effect prior to the effective date in Minnesota. Staff anticipate working through the Minnesota Chamber of Commerce to inform manufacturers about the requirements of the law, particularly for those companies to whom the applicability of the legislation would not be immediately apparent. Minnesota statute 115A.965 subd. 5 provides for enforcement. A civil fine of up to $5,000 per day of violation, plus court costs, attorney's fee, and the cost of properly disposing of any nonconforming packaging is specified in the section. In addition, an administrative penalty order may be used to enforce the prohibition.

NEW HAMPSHIRE

The New Hampshire Department of Environmental Services has not yet used provisions allowed under RSA 149-M:38 to enforce the Toxics Reduction law. The law establishes fines up to $25,000 per day of continuing violations; regulations promulgated under authority of the law specify procedures for complying with the law.

NEW JERSEY

No enforcement actions have been taken to date.

NEW YORK

The New York State Department of Environmental Conservation has not initiated enforcement proceedings to date. Primary efforts continue to be focused on educating those who are making a conscientious effort to make the needed changes to be in compliance and on working toward the development of appropriate guidance and State regulations as a firm foundation before formal enforcement actions are initiated. The New York State statutory enforcement provisions for this legislation are contained in the Environmental Conservation Law (ECL) 37-0209, which includes a civil penalty of up to $10,000 for a first violation and up to $25,000 for a second and any further violation.

PENNSYLVANIA

Pennsylvania's Safe Packaging Legislation allows for a civil penalty of up to $10,000 per violation. It also provides for summary offenses of $100-$1,000 plus costs, misdemeanors of $1,000-$10,000 and second offenses of misdemeanors of $2,500-$25,000. Persons convicted of criminal penalties are also subject to imprisonment when appropriate. Although enforcement actions have not been taken to date, Pennsylvania has been focusing on educational efforts toward the regulated community and further inspection and enforcement efforts are being planned. Funding has been allocated for the testing and analysis of packaging and packaging components during FY99.

RHODE ISLAND

The Rhode Island Department of Environmental Management (DEM) has not taken any enforcement action to date. Rhode Island General Law 23-18.13-7 provides that the state has the power to bring an action for restraining orders and injunctive relief at the request of the DEM. Regulations, which have not been promulgated to date, must require manufacturers or distributors to pay a fee rationally related to costs of program enforcement. The DEM will defer enforcement action until educational efforts have been conducted.

VERMONT

No enforcement actions have been taken to date.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 1a
TPCH Member States

Legislation	Materials Affected & Date of Adoption	Compliance Date	"Package"
Model Toxics in Packaging Legislation	Effective upon date of adoption, no package or packaging component shall be offered for sale or for promotional purposes by its manufacturer or distributor which includes in the package itself or packaging component, inks, dyes, pigments, adhesives, stabilizers, or any additives, any lead, mercury, cadmium or hexavalent chromium which has been intentionally introduced during manufacturing or distribution. 12/14/89	N/A	Containers that market, protect, or handle a product. Unit, intermediate & shipping containers as defined in ASTM D 996, tinplated steel as defined in ASTM A 623. Unsealed receptacles, e.g. carrying cases, crates, cups, pails, rigid foil & other trays, wrappers & wrapping films, bags & tubs.
Connecticut, C.G.S. Section 22a-255g to 22a-255m	Same as model. 6/6/90	10/1/92	Same as model, but does not include any glass, ceramic or metal receptacle intended to be reusable or refillable.
Iowa, Chapter 213 - Section 455D.19	Same as model. 5/8/90	7/1/92	Same as model.
ME Title 32, Section 1734(2)(A)	Same as model. 4/17/90	4/1/92	Same as model, but does not mention intermediate containers.
Minnesota, Chapter 337, Section 115.965	Same as model. 5/20/91	8/1/93	Same as model.
New Hampshire, RSA 149-M:32-40	Same as model. 4/19/90	4/19/92	Same as model, but does not reference tin-plated steel.
New Jersey, S.A. 13:1E-99.44 et seq.	Same as model. 1/20/92	1/1/93	Same as model, but does not reference tin-plated steel.
New York, Article 37-0201	Same as model, but does not mention intentionally introduced. 6/26/90	1/1/92	Same as model, but does not reference ASTM D 996 or tinplated steel as defined in ASTM A 623.
Pennsylvania, H.B. 337 Section 101	Same as model. 12/07/94	2/7/97	Same as model, but specifically mentions tin-plated steel and galvanized steel and wire, and excludes “ceramic cup.” (See PA bill for specifics.)
Rhode Island, G.L. 23-18.13	Same as model. 7/6/90	7/6/92	Same as model.
Vermont, Title 10 V.S.A. Chapter 159, Section 6620	Same as model. 6/26/90	7/1/92	Same as model.

Model Toxics in Packaging Legislation – A Comparative Analysis

Explanation of Comparative Analysis:
The first row contains provisions of the Model Legislation, with each of the 10 enacted laws listed in subsequent rows. Provisions of a law which are identical to the Model are noted as "same." Significant changes from the Model are also noted.

The tables are presented as an informational summary of major provisions, with comparative analysis of significant provisions. They do not include every distinction and should not be considered as definitive interpretation of each bill. For complete information, each statute and pending bill should be reviewed.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2a
Non-TPCH States

Legislation	Materials Affected & Date of Adoption	Compliance Date	"Package"
Model Toxics in Packaging Legislation	Effective upon date of adoption, no package or packaging component shall be offered for sale or for promotional purposes by its manufacturer or distributor which includes in the package itself or packaging component, inks, dyes, pigments, adhesives, stabilizers, or any additives, any lead, mercury, cadmium or hexavalent chromium which has been intentionally introduces during manufacturing or distribution. 12/14/89	Model.	Containers that market, protect, or handle a product. Unit, intermediate & shipping containers as defined in ASTM D996, tinplated steel as defined in ASTM A-623.* Unsealed receptacles, e.g. carrying cases, crates, cups, pails, rigid foil & other trays, wrappers & wrapping films, bags & tubs.
Florida, Section 403.7191, F.S. (1993)	Same, but does not mention intentionally introduced. (5/12/93)	7/1/94	Same.
Georgia, H.B. 124-Act 1397	Same. 5/4/92	7/1/94	Same.
Illinois S.B. 1295 - Section 21.5	Same. 7/1/92	7/1/94	Same.
Maryland, Chapter 491, Senate Bill 554	Same. 5/26/92	7/1/93	Same.
Missouri, G.A. Section 1-4, 260.820-260.826	Same. 7/1/93	7/1/94	Same.
Virginia, Title 10.1-1425.19	Same. 4/20/94	7/1/95	Same.
Washington, S.B. 5591 Chapter 319	Same. 5/21/91	7/1/93	Same.
Wisconsin, Act 335, Section 100.285	Same. 4/27/90	5/1/92	Same.

Note: The information contained in this table was originally gathered by the TPCH in 1994. Since these eight states are not members of the TPCH, it has not been reviewed for any subsequent changes to their legislation.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2b
Non-TPCH States

Legislation	"Packaging Component"	"Distributor"	"Manufacturer"	"Intentional Introduction"
Model Toxics in Packaging Legislation	Individual assembled parts of a package, including, but not limited to, interior/exterior blocking, bracing, cushioning, weatherproofing, exterior strapping, coatings, closures, inks & labels. Tinplated steel that meets the ASTM specification A-623 shall be considered as a single package component. (**See model legislation for specifics.**) Electro-galvanized coated steel and hot dipped coated galvanized steel that meets ASTM specification A-525 and ASTM A-879 shall be treated in the same manner as tinplated steel.	Person, firm or corporation who takes title to goods purchased for resale.	Any person, firm, association, partnership, or corporation producing (a) package(s) or (b) packaging component(s) as defined in Model Legislation.	Deliberately utilizing a regulated metal in the formation of a package or packaging component where its continued presence is desired in the final package/packaging component to provide a specific characteristic, appearance, or quality.
FL	Same, but does not include industrial packaging component intended to protect, secure, close, unitize and provide pilferage protection for any product destined for commercial use.	Same.	Any person, firm or corporation who manufactures packages, packaging or packaging components.	Undefined.
GA	Same.	Same.	Any person offering for sale or selling products or packaging to a distributor.	Undefined.
IL	Same.	Same.	Undefined.	Undefined.
MD	Same, but does not include exterior strapping and packaging/packaging components containing cadmium and intended for reuse of more than 5 times.	Any person that sells a packaged product to a retailer or receives a shipment or consignment of, or in any other manner acquires, packaged products for distribution to a retailer for sale to a consumer or for promotional purposes.	Any person that manufactures a package or packaging component including any person that sells a package or packaging component to a distributor.	Undefined.
MO	Same.	Undefined.	Undefined.	Undefined.
VA	Same.	Any person who takes title to products or packaging purchased for resale.	Any person that produces products, packages, packaging, or components of products or packaging.	Same.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2b (continued)
Non-TPCH States

Legislation	"Packaging Component"	"Distributor"	"Manufacturer"	"Intentional Introduction"
WA	Same, but does not mention tinplated steel precedent.	Undefined.	Any person applying packaging to a product for distribution or sale.	Undefined.
WI	Same, but does not specifically include exterior strapping. There is no mention of the tinplated steel precedent.	Undefined.	Undefined.	Undefined.

Note: The information contained in this table was originally gathered by the TPCH in 1994. Since these eight states are not members of the TPCH, it has not been reviewed for any subsequent changes to their legislation.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2c
Non-TPCH States

Error! Not a valid link. Note: The information contained in this table was originally gathered by the TPCH in 1994. Since these eight states are not members
of the TPCH, it has not been reviewed for any subsequent changes to their legislation.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2d
Non-TPCH States

	Exemption 5c	Exemption 5f	Exemption 5 g	Other Exemptions	Certificate of Compliance
Model Toxics in Packaging Legislation	Packages and packaging components that would not exceed the maximum contaminant levels but for the addition of recycled materials. Expires on January 1, 2000.	Packages and packaging components having a controlled distribution and reuse that exceed the contaminant levels. Expires on January 1, 2000. (See model for more details.)	Packages and packaging components that are glass or ceramic and have a vitrified label. Expires on January 1, 2010. (See model for details.)	*Packages/packaging components to which heavy metals have been added during the manufacturing, forming, printing, distribution process for which there is no feasible alternative. *Packages/packaging components that exceed contaminant levels, but are reused.	Manufacturers and suppliers of packaging and packaging components are required to furnish a Certificate of Compliance to the purchaser of packaging. Upon request, the state and public must be provided a copy of the Certificate.
FL	Same.	None.	None.	None.	Same, but mentions distributor as opposed to supplier.
GA	Same, but expires on January 1, 1996.	None.		Alcoholic products bottled prior to 1/1/94.	Same.
IL	Same, but expires on January 1, 1996.	None.		None.	Same.
MD	Same, except expires 4 years from effective date of the legislation.	None.		Alcoholic beverage bottled prior to 10/1/92.	Same.
MO	Same, but expires on January 1, 1996.	None.	Glass and ceramic package that is intended to be refilled or reusable.	Lead foil purchased and used on or before 12/31/93, to wrap liquor bottle openings or any package that contains intoxicating liquor if the package was filled and sealed prior to 12/31/93.	None.
VA	Same, except refers to "recovered" and does not have an expiration date.	None.	None.	None.	Same, but mentions distributor as opposed to supplier, and mandates the Certificate be supplied to "purchasers, the Department, and the public." Also, does not require "authorized official" to sign

					Certificate.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2d (continued)
Non-TPCH States

	Exemption 5c	Exemption 5f	Exemption 5 g	Other Exemptions	Certificate of Compliance
WA	Same, except expires 6 years after the effective date.			Packages and packaging components purchased by, delivered to, or possessed by a retailer prior to 2 years before the effective date in order to clear existing inventory.	Same.
WI	Same, but does not mention an expiration date.	None.		Lead foil wrap on liquor bottles or any package that contains intoxicating liquor if filled and sealed prior to 12/31/92.	None.

Note: The information contained in this table was originally gathered by the TPCH in 1994. Since these eight states are not members of the TPCH, it has not been reviewed for any subsequent changes to their legislation.

Model Toxics in Packaging Legislation – A Comparative Analysis
Table 2e
Non-TPCH States

Note: The information contained in this table was originally gathered by the TPCH in 1994. Since these eight states are not members of the TPCH, it has not been reviewed for any subsequent changes to their legislation.