



2010 Chemical Policy Subcommittee Issue Paper

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The Issue

Many harmful chemicals are used in manufacturing and in products without adequate laws to protect human health and the environment. Deficiencies in federal chemical regulations, primarily the Toxic Substances Control Act (TSCA), have been well-documented in governmental and academic analyses (GAO, 1994, GAO, 2005, GPO, 1995, USEPA, 2005, Wilson et al, 2006). There are gaps in the laws allowing chemicals that are known chemical hazards to be used in products and processes; in the disclosure of what chemicals are used in products and materials; and in the information gathered to assess chemical hazards or identify safer alternatives. A broader preventative approach is needed that makes public health and environmental protection the priority.

The NWPSC Position

The NWPSC believes that whoever designs, produces, sells, or uses a product should take responsibility for minimizing the product's environmental and health impacts throughout all stages of the products' life cycle. The greatest responsibility lies with whoever has the most ability to affect the lifecycle environmental impacts of the product. Therefore, the designer and producer are responsible for creating products that are safer for the environment and human health.

Where no alternatives to toxic components and ingredients exist, the producer is responsible for assisting in the management of the product at the end of life. Product stewardship and chemical policy reform go hand-in-hand. Policies that promote the use and development of safer alternatives to toxic chemicals and that restrict the use of toxic chemicals result in safer products and remove barriers to reuse and recycling of materials.

Proposed Solution/Recommendations

The Chemical Policy Subcommittee will support chemical policy reform policies that are consistent with the following:

1. Restrict the use of hazardous and toxic chemicals and materials, particularly for those targeting sensitive populations such as children, women and men of childbearing age, the elderly and those with medical concerns.
2. Require that all chemical and material manufacturers evaluate and report the environmental and human health hazards of these chemicals and materials to a regulatory body for registration and approval or denial prior to production and sale.
3. Require that producers disclose all chemicals used in their manufacturing processes and products.
4. Require producers to evaluate the chemicals used in their products and search for safer chemical alternatives.

5. Require that producers provide clear and uniform environmental, health hazard and safety information to sellers, for all materials and products, which can then be provided to their customers in an audience-appropriate format.
6. Promote, or are consistent with, the precautionary principle to protect health and the environment.
7. Require a producer to be responsible, either physically or financially, for the end-of-life management of their products if they contain a toxic chemical and are designed for disposal.
8. Allow the state laws to be more restrictive than federal requirements and recommend that federal laws do not preempt state laws related to the use of toxic chemicals.

The Subcommittee will provide resources to the NWPSC to support the following activities:

- Support modernization and reform of federal chemicals policies. Support of the above Subcommittee recommendations by the NWPSC will affirm the support of the NWPSC to chemical policy reform.
- Support policies at the local and state level that eliminate or reduce the use of toxic chemicals in manufacturing processes and consumer products and that promote the use of safer alternatives.
- Help local governments to become more involved in the national debate on TSCA reform by providing information and resources, as well as connections to opportunities to submit comments.
- Track initiatives and activities on chemicals policy reform including:
 - The Interstate Chemicals Clearinghouse.
 - The State Alliance for Federal Reform of Chemicals Policy (SAFER)
 - The Toxic-Free Legacy Coalition of Washington <http://www.toxicfreelegacy.org/>.
 - The Oregon Center for Environmental Health <http://www.oregon-health.org/>
 - The Oregon Environmental Council <http://www.oeconline.org/>.
 - The NAHMMA Policy Committee activities

Subcommittee Next Steps/Timeline

Over the next year, the Chemical Policy Subcommittee will monitor the following:

1. Efforts by the Federal Government to update chemical policy within the United States through changes to TSCA and the submittal of new legislation.
2. Development of the Green Chemistry Legislation in California. Development of this new legislation may have an important impact upon the national chemical policy debate.
3. Implementation of the Children's Safe Product Act legislation in Washington State. This legislation is increasing the importance of reporting toxic chemicals in children's products and may lead to the safer products being developed and sold in the Northwest.

Where necessary or appropriate, the Subcommittee may provide additional recommendations for actions by the larger NWPSC.

Chemical Policy and Toxic Chemical Activities

The following are activities that are either new or have been expanded upon since the previous issue paper published in June, 2008.

Chemical Policy Activities in California

- **Green Chemistry Initiative** - In 2002, the California State Legislature requested a study on chemical policy in the state of California. This resulted in a report titled "Green Chemistry in California: A Framework for Leadership in Chemicals Policy and Innovation" produced by Michael P. Wilson and the California Policy Research Center at the University of California (Wilson et al, 2006). This in turn led to the California Green Chemistry Initiative spearheaded by the California Department of Toxic Substances Control. The goal of the initiative is to fundamentally change the way California manages its chemicals and waste.

The report identifies the three policy goals for a modern, comprehensive chemicals policy:

- 1) **Close the Data Gap:** Ensure that chemical producers generate, distribute and communicate information on chemical toxicity, ecotoxicity, uses and other key data.
- 2) **Close the Safety Gap:** Strengthen government tools for identifying, prioritizing and mitigating chemical hazards.
- 3) **Close the Technology Gap:** Support research, development, technical assistance, entrepreneurial activity, and education in green chemistry science and technology.

An additional gap in the understanding of current chemical policies in California, as well as Washington and Oregon, is the cost of these policies to our local government agencies. Existing chemical policies result in many costs that are borne by local government agencies including: treating waste water that contains toxic chemicals; costs to manage products and materials upon disposal that contain toxic and hazardous components at transfer stations, landfills and incinerators; costs to recycle or manage products that contain toxic components; costs to local health departments to treat people with chronic exposure to products and materials that contain toxic chemicals, etc.

In 2008, the California State Legislature passed two landmark laws, Assembly Bill 1879 and Senate Bill 509. Assembly Bill 1879 gives the California Environmental Agency (Cal EPA) greater authority to regulate toxic chemicals in consumer products. Senate Bill 509 authorizes Cal EPA to establish a Toxics Information Clearinghouse which will provide state residents with information on hazardous chemicals encountered in everyday life. Because of potential costs to the state government and the on-going financial concerns, the bills also include the requirement that these new regulations must be effected with minimal cost to the State. Cal EPA is currently working to implement these new requirements.

Chemical Policy Activities in Washington

- **Washington Polybrominated Diphenyl Ethers (PBDEs) Law** - In 2007 landmark, first-in-the-nation legislation was passed to phase out the use of polybrominated diphenyl ethers (PBDEs) including deca-brominated diphenyl ether or deca-BDE (WSL, 2007). PBDEs are flame retardants used in a wide range of consumer products. PBDEs persist in the environment and accumulate in living organisms, and toxicological testing indicates these chemicals may cause liver toxicity, thyroid toxicity, and neuro-developmental toxicity.

The bill immediately banned the use of deca-BDE in mattresses and phased out the use of penta- and octa-bromodiphenyl ether in consumer products. The bill included an alternative assessment process for identifying safer, reasonable, and effective alternatives to deca-BDE in electronics and upholstered furniture by the state departments of Ecology and Health. The

recommendations from Ecology and Health had to be reviewed and approved by a fire safety committee before the ban could be implemented.

In January, 2009, Ecology and Health published the results of their alternative assessment of deca-BDE which identified at least one safer alternative in both areas of concern. Effective January 1st, 2011, deca-BDE will no longer be allowed in any electronics or upholstered furniture manufactured or sold in Washington State.

- **Washington Children's Safe Product Act** – In additional landmark legislation, the Washington Legislature passed the Children's Safe Product Act (CSPA) in April 2008. The law was in part in response to the identification of millions of toys contaminated with lead which forced large recalls across the US in 2007.

The CSPA consists of two basic parts:

1. Levels were established limiting the levels of lead, cadmium and six phthalates in children's products. These limits were some of the lowest levels found in any legislation and were to take effect as of July 1, 2009. These regulations were subsequently preempted by federal legislation (see the discussion on the Federal Consumer Product Safety Improvement Act.)
2. Ecology was to establish a list of chemicals of high concern to children (CHCCs) using criteria included in the CSPA legislation. Manufacturers and retailers would be required to report to Ecology if any product manufactured or sold within Washington State contained any of these CHCCs.

Ecology is currently in the process of finalizing its initial list of CHCCs and developing a rule to establish when and how manufacturers and retailers are to report the presence of CHCCs in products in Washington State. Ecology is expected to have the final rule establishing the list of CHCCs and reporting requirements completed by the end of 2010.

- **Safer Chemical Alternatives** – Ecology has been developing and endorsing a safer chemical alternative methodology in conjunction with other states, businesses, environmental groups and other interested parties. Based upon the work done to identify a safer chemical alternative to deca-BDE (see earlier discussion on PBDEs), Ecology identified a need for a safer chemical alternative methodology which could be used to evaluate alternatives to toxic chemicals used in consumer products.

Ecology has been working closely with EPA's Design for the Environment (DfE) program and with Clean Production Action (CPA) to improve upon available alternative assessment methodologies. CPA is the creator of the Green Screen alternative assessment methodology which is based primarily upon the process used by DfE to generate safer consumer products. Ecology, CPA, DfE, businesses such as HP, Apple and IBM, Cal EPA and other interested parties have been working to create updated alternative assessment methodologies. Ecology is planning on working with its internal Pollution Prevention staff to bring the updated alternative assessment methodologies to Washington businesses and to work closely with businesses to find safer alternatives to toxic chemicals used in consumer products.

In addition, Ecology is working with other interested states as part of the Interstate Chemical's Clearinghouse (IC2) to share resources, expertise and information across those states interested in conducting safer chemical alternative assessments. The IC2 is in the process of publishing alternative assessment methodologies in an internet WIKI site. States interested in conducting alternative assessments would then have resources available to them which would help in the process and it is hoped the states would be able to share results and recommendations. It is hoped this process would prevent several states from conducting similar alternative assessments on the same chemical as was done with PBDEs.

- **Green Chemistry** – Ecology has begun a process of helping to communicate the advantages of Green Chemistry to educators within Washington. Green Chemistry is a processes based upon a book written in 1999 by Paul Anastas and John Warner. In the book, the authors identified twelve steps which can be used by businesses and scientists to develop safer products. These twelve principles are attached at the end of the document, and online at <http://www.epa.gov/greenchemistry/pubs/principles.html>.

As part of this initiative, Ecology worked with John Warner and his educational institution Beyond Benign, to have John appear as the primary speaker at a NAHMMA conference held in July 2008 in Seattle. In addition, Ecology set up several smaller meetings between John and interested businesses to discuss the benefits of Green Chemistry.

In order for Green Chemistry to succeed, however, it is necessary to begin implementing the principles of Green Chemistry into the education system. To start this process, Ecology and Beyond Benign are sponsoring a Green Chemistry Workshop on July 27th-29th, 2010 in Lacey. The Workshop is a teacher training workshop that will provide high school level science educators information and the tools to teach Green Chemistry to future scientists.

National Chemical Policy Activities

- **Toxics Substances Control Act Legislative Reform** – Currently, the primary US legislation responsible for managing toxic chemicals is the Toxic Substances Control Act (TSCA). TSCA was passed in 1976 and was intended to give EPA the tools necessary to require testing of chemicals and to place restriction on those chemicals deemed to be toxic. However, the burden of proof was placed upon EPA to prove that a chemical was toxic and the level of detail necessary was so great that it has been proven ineffective in managing the up to 100,000 potentially in use today. In addition, TSCA also established that no data was needed for the approximately 60,000 chemicals in use at the time of the legislation's passing. Due to these problems, very little information is available about either the toxicity of chemicals or the use in general consumer products.

TSCA has undergone increasing scrutiny and new proposals have recently been made available to fix some of the problems inherent in TSCA.

On April 15, 2010, Senator Frank Lautenberg introduced new legislation called the Safe Chemicals Act. The proposed legislation would require testing of all industrial chemicals and puts the burden on industry to prove that the chemicals and products they sell are safe. On the same day, Representatives Rush and Waxman released a discussion draft of proposed legislation called Toxic Chemicals Safety Act. This discussion draft proposes changes to TSCA and would address similar concerns to those identified in Senator's Lautenberg's proposed legislation.

Over the following months, interested parties will be monitoring and participating in the discussions related to TSCA reform. Interested parties will be businesses, business advocate groups, environmental groups, states, etc.

One issue of particular importance is that any changes to TSCA do not preempt state activities on toxic chemicals. Many federal laws allow states to be more conservative than the federal equivalent. Washington, for example, has additional toxicity requirements in its Dangerous Waste Regulations (173-303) which are in addition to the requirements found in the federal Resource Conservation and Recovery Act (RCRA) and has more stringent cleanup requirements in the Model Toxics Control Act (MTCA) than those found in the federal equivalent (CERCLA).

- **Interstate Chemicals Clearinghouse** – Ten states (CA, CT, ME, MA, MI, MN, NJ, NY, OR, WA) have formed the Interstate Chemicals Clearinghouse (IC2). The IC2 is a partnership of state agencies that promotes a clean environment, health communities and a vital economy through the development and use of safer chemicals and products. The IC2 is addressing a number of different issues including chemical policy reform, safer chemical alternative methodologies, chemical toxicity

and alternative database, etc. The IC2's first official action was to coordinate the publication of principles on reform of the TSCA legislation (see above). In addition to the ten IC2 member states, IL, MY and VT also signed the principles document. The IC2 will continue to find areas of common interest related to chemicals policy and management and will share resources among the member states while reaching consensus on technical and policy issues to provide a unified position on important toxic chemical related issues.

- **Consumer Products Safety Improvement Act** – In August of 2008, Congress approved the Consumer Products Safety Improvement Act (CPSIA). The CPSIA is legislation under the jurisdiction of the US Consumer Product Safety Commission (CPSC) which has a long history of overseeing toxics in products. The CPSIA sets limit for lead and six phthalates in children's products and potentially cadmium through implication. Currently children's products cannot contain lead at concentrations greater than 300 ppm. The level may be reduced to 100 ppm by August 2001 if the CPSC determines it is technically feasible. Lead paint may not contain lead at concentrations greater than 90 ppm. The sum of the concentrations of the six phthalates must be below 6,000 ppm.

Although these levels were higher than those established by legislation such as the Children's Safe Product Act in Washington State, the CPSIA included preemptive rights which replaced levels established by the states. The levels in the CPSIA, however, were lower than existing limits and the CPSC was given wider authority to regulate toxic chemicals in children's products. The CPSC is currently in the process of establishing rules based upon the CPSIA and full implementation will not occur until 2012. In addition, the CPSC has indicated to Congress that it has some concerns about portions of the CPSIA and has asked for wider authority to address some of these concerns.

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Twelve Principles of Green Chemistry

1. **Prevent waste**: Design chemical syntheses to prevent waste, leaving no waste to treat or clean up.
2. **Design safer chemicals and products**: Design chemical products to be fully effective, yet have little or no toxicity.
3. **Design less hazardous chemical syntheses**: Design syntheses to use and generate substances with little or no toxicity to humans and the environment.
4. **Use renewable feedstocks**: Use raw materials and feedstocks that are renewable rather than depleting. Renewable feedstocks are often made from agricultural products or are the wastes of other processes; depleting feedstocks are made from fossil fuels (petroleum, natural gas, or coal) or are mined.
5. **Use catalysts, not stoichiometric reagents**: Minimize waste by using catalytic reactions. Catalysts are used in small amounts and can carry out a single reaction many times. They are preferable to stoichiometric reagents, which are used in excess and work only once.
6. **Avoid chemical derivatives**: Avoid using blocking or protecting groups or any temporary modifications if possible. Derivatives use additional reagents and generate waste.
7. **Maximize atom economy**: Design syntheses so that the final product contains the maximum proportion of the starting materials. There should be few, if any, wasted atoms.
8. **Use safer solvents and reaction conditions**: Avoid using solvents, separation agents, or other auxiliary chemicals. If these chemicals are necessary, use innocuous chemicals.
9. **Increase energy efficiency**: Run chemical reactions at ambient temperature and pressure whenever possible.
10. **Design chemicals and products to degrade after use**: Design chemical products to break down to innocuous substances after use so that they do not accumulate in the environment.
11. **Analyze in real time to prevent pollution**: Include in-process real-time monitoring and control during syntheses to minimize or eliminate the formation of byproducts.
12. **Minimize the potential for accidents**: Design chemicals and their forms (solid, liquid, or gas) to minimize the potential for chemical accidents including explosions, fires, and releases to the environment.