



# Chemical Bans and Use Restrictions: U.S. Manufacturers Must Increasingly Consider State and Foreign Law

Until recently, manufacturers in the U.S. looked primarily to the U.S. Environmental Protection Agency (EPA) or Consumer Products Safety Commission for chemical bans and use restrictions. State chemical bans and use restrictions, other than facility permit limits, were rarely encountered. For U.S.-based exporters, foreign restrictions on imports were a concern, but they were seldom more stringent than U.S. environmental requirements. This article describes how the situation is changing.

## U.S. Toxic Substances Law

When Congress passed the Toxic Substances Control Act (TSCA) in 1976, it included a specific ban on the manufacture and distribution of polychlorinated biphenyls (PCBs), a persistent chemical once used in dielectric fluid of electrical equipment.

Congress recognized that in the future, EPA might identify other chemicals that would pose a threat so significant as to warrant an outright ban. TSCA Section 6 allows EPA to prohibit or limit manufacture, processing, distribution in commerce, use, or disposal if a chemical poses an unreasonable risk. TSCA provides EPA a range of options, however, including:

- warning labels,
- notifying EPA of significant new uses,
- specific use restrictions,
- disposal restrictions,
- production phaseout,
- recall of products in use,
- seizure, if a federal district court finds an imminent hazard.

Outright chemical bans under TSCA have been uncommon. TSCA requires EPA to use the least

burdensome restrictions it believes necessary to control the risk, as described below.

“If...a chemical substance or mixture...presents or will present an unreasonable risk of injury to health or the environment, the Administrator shall by rule apply...requirements...to the extent necessary to protect adequately against such risk using the least burdensome requirements.”

TSCA Sec. 6(a)  
15 U.S.C. 2605

In addition to environmental and health factors, EPA must consider the benefits of the chemicals in use and availability of substitutes, as well as impacts of any restrictions on the national economy and small business.

Over the years, EPA has issued a few Section 6 chemical bans, such as:

- chromium-based water treatment chemicals used in comfort cooling towers, and
- a prohibition on nitrosating agents in certain metalworking fluids.

EPA has proposed bans on acrylamide grouts and lead fishing sinkers, but has not completed final rules on these.

Most recently, the Ecology Center of Ann Arbor, Michigan petitioned EPA to prohibit the manufacture and distribution of lead wheel weights. EPA denied the petition in August 2005, citing the lack of data to show that lead from wheel weights poses an unreasonable risk, as required by TSCA Section 6.



This illustrates one of the distinctive characteristics of EPA rulemaking under TSCA. EPA needs data and peer-reviewed scientific studies to successfully complete a chemical ban or use restriction rule under TSCA. This can take many years, but if the agency does not obtain and validate the scientific information, the final rule is vulnerable to court challenge. In the case of lead wheel weights, for example, it is not sufficient that a European Union Directive prohibits the use of lead wheel weights on new vehicles in Europe. EPA must conduct an independent evaluation that meets the statutory requirements of TSCA.

At present, EPA is gathering information and preparing or revising risk assessments on a number of chemical substances, including:

- dioxins
- formaldehyde and acetaldehyde
- diesel emissions
- tungsten alloys
- polybrominated fire retardants
- perfluorooctane sulfonates (PFOS)
- perfluorooctanoic acids (PFOA)
- nanomaterials
- perchlorate
- trichloroethylene

The results of these studies will inform a variety of EPA regulatory efforts, such as air emission rules,

Superfund cleanup standards, or possibly chemical use restrictions under TSCA.

Since 1976, Congress has amended TSCA, to address asbestos in schools and lead-based paint hazards. In these cases, Congress opted to mandate some restrictions in the statute, rather than wait for EPA rulemaking under TSCA Section 6.

## State Chemical Bans

Increasingly, State legislatures and State agencies are pursuing chemical bans and use restrictions, regardless of any federal legislation or completion of EPA risk assessments or rulemaking.

The most recent and widespread State bans are on the manufacture, processing, and distribution of certain brominated fire retardants. A half dozen States now have statutes that ban two polybrominated diphenyl ethers (PBDE's) known as penta-BDE and octa-BDE. These two substances are no longer manufactured in the U.S., but a related compound, deca-BDE is still in common use. Recent state statutes in Maryland, Maine, Illinois, New York, and Oregon require a State agency to determine if alternatives to deca-BDE are available, and to take action or report back to the legislature.



The State of Washington passed a statute in 2004 that requires development of Chemical Action Plans for Persistent, Bioaccumulative, and Toxic (PBT) chemicals. On October 19, 2005, Washington Department of Ecology proposed a rule to carry out this mandate, with an initial list of PBT chemicals that includes cadmium, lead, brominated fire retardants, perfluorooctane sulfonates, phthalate esters, and other substances. Chemical Action Plans could lead to subsequent bans or significant use restrictions in particular applications.

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Some States have also been active in trying to restrict the use of mercury and lead in certain products sold in their State. Common targets of State mercury legislation include electrical relays, switches, flow meters, thermostats, thermometers, and labeling or content limits on mercury in lamps, fluorescent bulbs, batteries, etc.

A 2005 California bill would ban the use of chlorinated solvents in the State. The proposed bill has triggered a significant industry response, to demonstrate the lack of alternatives for some applications. A variety of other chemical ban bills are introduced in State legislatures each year. As a result, trade associations and some individual companies track bills in multiple States that may affect their products. Many State chemical ban bills fail, but some are not decided until the final days or hours of a legislative session, making it a real challenge to stay current.

## International Agreements

The Montreal Protocol agreement was one of the most significant chemical production phaseouts ever. The production phaseout of ozone depleting compounds (CFC's, HCFC's and Halon) was implemented in the U.S. through the 1990 Amendments to the Clean Air Act, rather than through TSCA. The production phaseout of hydrochlorofluorocarbons continues through the present day, with very limited production now, and elimination of some common HCFC materials by 2020.



The Kyoto Protocol on Climate Change took effect in February 2005. While the U.S. did not ratify this agreement, it is driving participating countries to consider a host of emission control efforts. In addition to carbon dioxide emissions, participating countries are focused on restricting the use of hydrofluorocarbons (HFC's) and perfluorocarbons

(PFC's), which are common refrigerants, cleaning and fire suppression agents.

The Stockholm Convention on Persistent Organic Pollutants (POP) was signed by the U.S. in 2001, and has been ratified by many countries, but not yet by the U.S. At the time the U.S. signed this treaty, it was limited to a discrete set of chemicals and pesticides that were already banned or highly restricted in the U.S. In recent months, parties to the POP treaty have proposed to add several fire retardants, perfluorooctane sulfonates (PFOS), and other more commonly used chemicals to the list of banned or restricted substances. This has caused significant concern within the U.S. Senate, where any future U.S. ratification would take place. The concern is that the international process for adding chemicals to the POP treaty may not require the same level of scientific rigor and consideration of alternatives that EPA would be required to follow under TSCA Sec. 6.

## European Union

Member nations of the European Union (EU) most often coordinate their environmental efforts through EU Directives. Directives are issued after a complex legislative process involving the European Commission, the Council of Ministers, and the European Parliament. Once final, Directives must be incorporated into each member nation's statutes or rules.



The EU has been very active in proposing and passing chemical bans and use restrictions. Since Directives are legislative, rather than regulatory actions, there is no explicit EU framework for consideration of new chemical bans, other than the Precautionary Principle ("better safe than sorry") cited by advocates of chemical bans. Like the U.S. Congress, the European Parliament is not legally bound by a "least burdensome" requirement such as the one imposed on EPA in TSCA Sec. 6.

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Recent EU Directives that are substantially completed include restrictions on the use of:

- Brominated fire retardants, penta-BDE and octa-BDE. Deca-BDE was considered for restriction, but is not included at this time.
- Certain materials in electronic goods, including lead, cadmium, hexavalent chrome, mercury, and some brominated fire retardants (excluding deca-BDE at present). This Directive is known as RoHS, or Restriction on the use of certain Hazardous Substances in electrical and electronic equipment.
- Heavy metals such as lead, cadmium, mercury, and hexavalent chromium in new motor vehicles, with some exemptions. The End-of-Life Vehicles Directive allows NiCad batteries in electric vehicles until July 2008.

The EU is developing a scheme to require toxicity testing and/or use authorizations for existing chemicals. This REACH (Registration, Evaluation, and Authorization of Chemicals) Directive would represent a significant enlargement of European regulatory authority over chemicals that are already widely used in commerce.

Other EU Directives that are in development include restrictions on the continued use of:

- fluorinated greenhouses gases such as HFC's and PFC's.
- nickel-cadmium batteries in electrical goods. The draft Directive contained exemptions, for items such as military and space equipment, power tools, medical equipment, emergency lighting, and alarm systems.
- perfluorooctane sulfonates (PFOS), used in surfactants, anti-erosion agents, and in some older stored aqueous firefighting foams.

These chemical-specific EU Directives are broadly applicable, but contain numerous exceptions where substitute materials are unavailable for specific applications. This adds to their complexity, and poses the risk that critical but low-use applications will fail to be considered during the development of a Directive.

## Other Nations

Some non-EU nations are adapting draft EU Directives into their own national laws, or are developing their own chemical use restrictions. Countries such as China, Japan, and Canada are developing use restrictions that parallel some of the EU Directives described above, but often with different requirements and schedules. For example, the draft Chinese restriction on electronic goods (China RoHS) envisions that the Ministry of Information Industry will prepare and annually update a Catalogue that will describe electronic goods subject to restriction, categories of substances restricted, and timelines for each restriction. This is a much more detailed approach than the EU RoHS Directive that has a single deadline and blanket prohibitions with listed exceptions.

Other nations sometimes view U.S. use restrictions and TSCA regulations, EU Directives, and other national laws as insufficiently protective or too slow to develop. Sweden and Norway, for example, seek near-term restrictions on PFOS compounds. EU member nations that are dissatisfied may propose unilateral action, in order to prompt EU action on a Directive. Ultimately, sovereign nations have considerable power to control substances that are manufactured within their borders or imported from abroad. When such restrictions are inconsistent, they can greatly complicate international trade.

## Summary

Even companies who manufacture solely within the U.S. are facing new State and foreign restrictions on product content. Many manufacturers have a global supply chain, increasing the possibility that suppliers will be affected by diverse chemical bans and use restrictions. As a result, an awareness of State actions, international agreements, and foreign law are becoming increasingly critical to business planning.

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