

The Hazardous 100⁺ Action Guide

As of April 2013, the Hazardous 100⁺ List of Chemicals of High Concern consists of two parts: 101 chemicals of high concern that have been identified by two or more authoritative government agencies, and an additional 18 chemicals of high concern selected because they may pose similar hazards based on the available evidence. (Some single entries on the list are actually groups of related chemicals of high concern, e.g. the flame retardant chemicals known as polybrominated diphenyl ethers or PBDEs). The Hazardous 100⁺ list represents a small subset of all inherently hazardous chemicals of concern to which humans and the environment may be exposed.

How was the Hazardous 100⁺ chemical list developed?

The Hazardous 100⁺ list was developed by non-governmental organizations (NGOs) affiliated with [Safer Chemicals, Healthy Families](#), a broad-based national coalition working to protect human health and the environment from dangerous chemicals in everyday consumer products. Here are the methods and criteria we used to develop the list:

The Hazardous 100 List. We added chemicals to the first part of the list if they were formally identified by at least two out of six authoritative government bodies as chemicals of high concern. These six source lists, the number of chemical substances (or groups of related substances) on those lists, and the government agencies that developed and adopted each list, include:

- *State of California* – “[List of Chemicals Known to Cause Cancer or Reproductive Toxicity](#)” [i.e. the Prop 65 list] (884 substances) – Office of Environmental Health Hazard Assessment;
- *State of Maine* – “[Designated Priority Chemicals](#)” (2 substances) and “[List of Chemicals of High Concern](#)” (49 substances) – Department of Environmental Protection and Center for Disease Control and Prevention;
- *State of Minnesota* – “[List of Priority Chemicals](#)” (9 substances) – Pollution Control Agency and Department of Health;
- *State of Washington* – “[List of Chemicals of High Concern to Children](#)” (66 substances) – Department of Ecology and Department of Health;
- *United States* – “[Existing Chemicals Action Plans](#)” (10 substances) – Environmental Protection Agency; and
- *European Union* – “[Authorisation List](#)” (14 substances) and “[Candidate List of Substances of Very High Concern for Authorisation](#)” (138 substances) – European Chemicals Agency.



The authoritative agencies developed these lists based on strong credible scientific evidence on chemical hazard, and in some cases on available data on chemical exposure and use. See the web links for the sources of data relied upon by the agencies.

Additional Chemicals of High Concern. We selected additional chemicals of high concern (or groups of related chemicals) that may possess similar hazard characteristics and exposure potential based on credible scientific evidence. We applied best professional judgment in considering a combination of factors, including whether the chemical was:

- Identified on a single agency list that was also used to construct the Hazardous Hundred list. *Example:* The U.S. EPA Action Plan for Long-Chain Perfluorinated Chemicals (PFCs) also includes PFOA and PFHxS use in stain resistant coatings;
- A “regrettable substitute” or a chemical of growing concern that replaced a chemical of high concern without eliminating the hazard. *Example:* The flame retardant chemical PentaBDE formerly used in foam cushions has been replaced by chlorinated tris (TDCPP) and two brominated flame retardants, TBB and TBPH;
- Listed on the SIN (Substitute It Now) list developed by European NGOs as meeting the criteria for substances of very high concern. *Example:* Several of the organotin compounds, which are used as plastics additives and catalysts, were SIN-listed; and
- Nominated by U.S. NGOs engaged in dialog with business sectors for safer chemicals. *Example:* Those working for safer cleaners and personal care products nominated triclosan, a common antimicrobial chemical in soaps and other products.

This second list is not an exhaustive list of all additional chemicals of high concern.

Why should companies act on these chemicals? Why now?

We are asking retailers to take greater leadership action because our federal chemical safety system is badly broken, and yet the customers you serve still want products free from toxic chemicals. Governing federal laws, including the Toxic Substances Control Act of 1976 (TSCA), are obsolete and ineffective. When TSCA passed 37 years ago, about 62,000 chemicals in commerce were grandfathered in without safety testing or restrictions on known health hazards. So far, chemical manufacturers have blocked every effort by Congress to modernize TSCA and ensure the safety of all chemicals in commerce.

In the absence of federal action, state governments and the marketplace are responding to public demand for safer chemicals in consumer products. Many states are developing restrictions on hazardous chemicals in products. In a form of “retail regulation,” leading companies across the supply chain are phasing out toxic chemicals in their products.



Retailers are on the front line of consumer discontent with the safety of chemicals commonly added to consumer products, including chemicals that might escape from the plastics and other materials used in product parts and packaging. The lack of federal safety determinations and minimum data requirements on chemicals hurts retailers too.

Retailers are uniquely situated to work with suppliers to ensure that dangerous chemicals are replaced with safer alternatives. Such leadership will proactively address consumer concerns, place you ahead of the inevitable regulatory curve, and help reduce the various costs associated with carrying toxic chemicals in retail stores.

How can retailers avoid “regrettable substitutes”?

We recognize that considerable effort may be needed to remove a chemical of high concern from the supply chain while still providing the public with products that are effective and affordable. Unfortunately, too many suppliers faced with this challenge simply offer only slightly altered chemistries. These often prove to be “regrettable substitutes,” which are chemicals that are arguably somewhat safer than the targeted chemical of high concern, but which display hazard characteristics and exposure potential similar to the chemistries they replace. Often growing concerns are revealed gradually as health and safety data gaps on the “regrettable substitutes” are slowly filled through more research.

To get off this costly treadmill of constantly chasing and replacing alternative chemistries requires careful assessment and substitution planning. Although a commitment to continuous improvement must allow for imperfect transition chemistries, much greater attention should be paid to getting it as right as possible in the first instance.

To help ensure that your actions result in truly safer alternatives rather than regrettable substitutes, we strongly recommend using several tools to institutionalize a process of working with your suppliers to continually search for safer alternatives. Such a process could include these tools and steps:

1. Search the **Chemical and Materials Library** of more than 22,000 substances against 40 authoritative hazard and warning lists to screen out potential alternatives of high concern. Developed by Pharos, a project of the Healthy Building Network. Sign up for a free 30 day trial <http://www.pharosproject.net/material/>.
2. Use the **Quick Chemical Assessment Tool (QCAT)** to screen and evaluate alternatives to toxic chemicals through a simplified hazard assessment tool. Developed by the Washington State Department of Ecology. Access QCAT at <http://www.ecy.wa.gov/programs/hwtr/ChemAlternatives/QCAT.html>.
3. Use the **GreenScreen for Safer Chemicals (GreenScreen™)** as a more comprehensive comparative hazard assessment to help identify truly safer alternatives. Developed by Clean Production Action. Access the Green Screen™ and related resources at <http://www.cleanproduction.org/Greenscreen.php>.



What other resources can help retailers ensure safer chemicals?

We encourage retailers to seek additional expert assistance and advice from:

The BizNGO Working Group for Safer Chemicals and Sustainable Materials (BizNGO) is a unique collaboration of business and NGO leaders who are creating a roadmap to the widespread use of safer chemicals and sustainable materials in our economy. Spearheaded by Clean Production Action in 2006, BizNGO now includes leaders from environmental organizations and the electronics, health care, building, apparel, outdoor industry, cleaning product, and retail sectors. BizNGO issued *Principles for Safer Chemicals* (attached) and published *The Guide to Safer Chemicals*, available at <http://www.bizngo.org/guide.php>.

The **Green Chemistry and Commerce Council (GC3)** is a business-to-business forum that advances the application of green chemistry and design for environment across supply chains. It provides an open forum for cross-sectoral collaboration to share information and experiences about the challenges to and opportunities for safer chemicals and products. GC3 maintains a *Retailer Portal* that provides additional tools to evaluate chemical ingredients in products at <http://greenchemistryandcommerce.org/retailer.overview.php>.

Design for the Environment (DfE), a partnership program of the U.S. Environmental Protection Agency, helps consumers, businesses, and institutional buyers identify cleaning and other products that perform well, are cost-effective, and are safer for the environment. Look for products with the DfE label. For information, visit <http://www.epa.gov/dfe/>.

For more information, contact **Safer Chemicals, Healthy Families (SCHF)** at info@saferchemicals.org or (202) 465-8158 or www.saferchemicals.org.



BizNGO.ORG

FOR SAFER CHEMICALS AND SUSTAINABLE MATERIALS

The Business-NGO Working Group promotes the creation and adoption of safer chemicals and sustainable materials in a way that supports market transitions to a healthy economy, healthy environment, and healthy people.

BizNGO Endorsers

Businesses

American Sustainable Business Council
Brooks Sports
Construction Specialties, Inc.
Earthbound Farm
Green Harvest Technologies
Hewlett-Packard
Hospira
IHS
Method
Naturepedic
Organic Valley
Perkins+Will
Pure Strategies
Q Collection
Seventh Generation
Staples, Inc.
Sustainable Research Group
True Textiles, Inc.
Whole Foods

Health Care Organizations

Catholic Healthcare West
Health Care Without Harm
Kaiser Permanente
Novation
Practice Greenhealth
Premier

NGOs and Investors

As You Sow
Basel Action Network
Boston Common Asset Management, LLC
Breast Cancer Fund
Center for Environmental Health
ChemSec
Clean New York
Clean Production Action
Clean Water Action
Commonweal
Dominican Sisters of Hope
Ecology Center
Electronics Take Back Coalition
Environmental Health Fund
Environmental Health Strategy Center
General Council, Adrian Dominican Sisters
Healthy Building Network
Inhance Investment Management Inc.
Institute for Agriculture and Trade Policy
Institute for Local Self-Reliance
Mercy Investment Program
Natural Resources Defense Council
Northwest Coalition for Responsible Investment
Rose Foundation for Communities and the Environment
Sisters of Mercy, Regional Community of Detroit Charitable Trust
Sisters of St. Francis of Philadelphia
Washington Toxics Coalition
Women's Voices for the Earth

Principles for Safer Chemicals

Demand for products made from greener chemicals is growing rapidly. Consumers, investors and governments want chemicals that have low to no toxicity and degrade into innocuous substances in the environment.¹ Leading businesses are seeking to capture these emerging market opportunities by redesigning their products and catalyzing change in their supply chains.

To advance an economy where the production and use of chemicals are healthy for humans, as well as for our global environment and its non-human inhabitants, responsible companies and their supply chains should adopt and implement the following four principles for safer chemicals:

1. Know and disclose product chemistry. Manufacturers will identify the substances associated with and used in a product across its lifecycle and will increase as appropriate the transparency of the chemical constituents in their products, including the public disclosure of chemicals of high concern.² Buyers will request product chemistry data from their suppliers.

2. Assess and avoid hazards. Manufacturers will determine the hazard characteristics of chemical constituents and formulations in their products, use chemicals with inherently low hazard potential, prioritize chemicals of high concern for elimination, minimize exposure when hazards cannot be prevented, and redesign products and processes to avoid the use and/or generation of hazardous chemicals. Buyers will work with their suppliers to achieve this principle.

3. Commit to continuous improvement. Establish corporate governance structures, policies and practices that create a framework for the regular review of product and process chemistry, and that promote the use of chemicals, processes, and products with inherently lower hazard potential.

4. Support public policies and industry standards that: advance the implementation of the above three principles, ensure that comprehensive hazard data are available for chemicals on the market, take action to eliminate or reduce known hazards and promote a greener economy, including support for green chemistry research and education.

These principles are key features of an effective strategy for promoting, developing and using chemicals that are environmentally preferable across their entire lifecycle.

¹ These are two of the 12 Principles of Green Chemistry defined by Paul Anastas and John Warner in: Green Chemistry: Theory and Practice, 1999 (Oxford University Press: New York).

² "Chemicals of high concern" include substances that have the following properties: 1) persistent, bioaccumulative and toxic (PBT); 2) very persistent and very bioaccumulative (vPvB); 3) very persistent and toxic (vPT); 4) very bioaccumulative and toxic (vBT); 5) carcinogenic; 6) mutagenic; 7) reproductive or developmental toxicant; 8) endocrine disruptor; or 9) neurotoxicant. "Toxic" (T) includes both human toxicity and ecotoxicity.