

Healthy Persons and Communities

Health and Environmental Impacts of Chemicals and Technologies

According to the Environmental Protection Agency (EPA), of the 84,000 chemicals in commercial use in the U.S.—from flame retardants in furniture to household cleaners—nearly 20% are secret, their names and physical properties guarded from consumers and virtually all public officials under a little-known federal provision. In the past several years, 95% of the notices for new chemicals sent to the government requested some secrecy, according to the Government Accountability Office. About 700 chemicals are introduced annually.

Even before they're born, babies are exposed to chemicals linked to serious health-related problems. In a first-of-its-kind study, women were tested in their second trimester of pregnancy. Researchers found their bodies had been contaminated with chemicals from everyday consumer products. The chemicals detected include phthalates used in common vinyl and plastic items, such as shower curtains, flooring and toys; bisphenol-A (BPA) found in water bottles and food and beverage cans; and so-called "Teflon chemicals" used to make stain-proofing treatments for clothing, carpeting and food packaging.

A study called "Public Health Implications of Hazardous Substances in the Twenty-Six U.S. Great Lakes Areas of Concern" was undertaken by the Centers for Disease Control and Prevention. The Center for Public Integrity obtained the study and reported that it warns that more than nine million people who live in the more than two dozen "areas of concern"—including metropolitan areas of Chicago, Cleveland, Detroit and Milwaukee—may face elevated health risks from exposure to dioxin, PCBs, pesticides, lead, mercury or six other hazardous pollutants.

To date, the EPA has only successfully restricted or banned five existing chemicals and only required testing on about 200 of the more than 80,000 chemicals on the market since 1976.

The U.S. cosmetics industry, dominated by 10 large companies, accounts for the use of nearly one in seven of the 75,000 chemicals registered for use in the U.S. Common ingredients found in U.S. personal care products include phthalates, which have been linked to malformed or underdeveloped reproductive organs in males; formaldehyde, classified as a carcinogen; and parabens, endocrine-active preservatives that have been found in breast tumors. Many ingredients are exempt from labeling requirements because the product formulas are protected as proprietary. Scientists and consumers also have expressed concern about the increased use of nanotechnology—compounds thousands of times smaller than the width of a human hair. Because of their size, there is potential for these nano-sized ingredients to penetrate human cells and tissues. The technology is already used in anti-aging creams and sunscreens, but the labels don't have to specify its use.

The European Union has banned more than 1,000 ingredients considered unsafe for use in cosmetics. The FDA has banned nine.

The one body with jurisdiction over toys is the Consumer Product Safety Commission. That government agency was cut to 100 inspectors to monitor some 15,000 products—including lead-painted toys from China.

The Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) initiative of the European Union is based on the idea of “no data-no market”— companies must make public data on the hazards of their products or face the risk they will not be able to continue selling them. REACH, a uniform chemical law, is the strictest law to date regulating chemical substances and will affect industries throughout the world. REACH entered into force in June 2007, with a phased implementation over the next decade. The International Chemical Secretariat, a European advocacy organization, generated Substitute It Now (SIN), a list of 267 chemicals identified as “Substances of Very High Concern” based on REACH criteria.

Companies are making efforts toward greener chemistry. Some have shared data and, in other cases, industry metrics and certification programs have been developed. For example, GreenWERCS, originally developed for Wal-Mart to screen and compare toxicity of suppliers’ products, has been made available to chemical manufacturers. Metrics, such as the PHAROS framework for building materials and the Materials Assessment Strategy for the automotive sector, have been developed. Certification programs, such as Green Seal and EcoLogic, attest to products achieving best in class green status and are tightened as the bar is raised for “best in class.”

A number of investors collaborate through the Investor Environmental Health Network (IEHN). IEHN offers a vision for the year 2030, which through shareholder resolutions and dialogue, together with supporting and monitoring federal, state and local legislation/regulation, investors may achieve:

- ❖ **For multiline retailers and their suppliers:** Toxicity warning labels are **not** needed for products in Wal-Mart, Target, Costco and other multiline retail stores.
- ❖ **For upstream chemical producers and manufacturers:** Chemical innovations are driven primarily by biomimicry—companies have learned from nature how to produce new materials in an energy-efficient way without relying on high temperatures and pressures and with minimal waste generation. In common industrial and consumer applications, new materials based on sustainably sourced biomaterials have replaced petroleum-based petrochemicals, particularly those substances of especially high concern such as endocrine disruptors, persistent, bioaccumulative toxicants and carcinogens, mutagens and reproductive toxicants.
- ❖ **For food processing and agricultural supply chains:** Bio-based integrated pest management, **reduced risk** pesticides and new agricultural varieties have replaced the dominant, chemical-intensive agricultural production model of the last several decades.

- ❖ **And for society as a whole:** “Green” has been removed from “green chemistry” – green chemistry principles and methods have been mainstreamed and are synonymous with chemistry, so much so that “benign” rather than “toxic” most commonly characterizes the word “chemical.”

Addressing the impact of companies on this issue is aligned with the Critical Concerns of the Sisters of Mercy to reverence Earth and work more effectively toward the sustainability of life. Efforts are also aligned with the special concern for women and children, and acting from an international perspective and in interdependence with all creation.

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