

Human Health and the *Canadian Environmental Protection Act, 1999*

Over 23,000 different substances are available in Canada for use in industrial processes and consumer goods. Many of these chemicals improve our standard of living. In some cases, however, they may also threaten our health and our environment.

Protection from pollution and substances of concern

The *Canadian Environmental Protection Act, 1999* (CEPA 1999) is jointly administered by Environment Canada and Health Canada. Under the Act, each substance is assessed for risks to the environment by Environment Canada and for risks to human health by Health Canada. The two departments also share responsibility for managing potential risks from hazardous substances, including some biotechnology substances under CEPA 1999.

In assessing risk as defined by the Act, the Government of Canada takes into account both the inherent toxicity of the substance and the amount of the substance to which people are exposed. Exposure levels are assessed according to estimates of the amounts of a substance in food, drinking water, air (indoor/outdoor), soil, and consumer products.

Under CEPA 1999, substances are deemed to be toxic if they meet the criteria of section 64, specifically if they enter or may enter the environment in amounts or concentrations that:

- have an immediate or long-term effect on the environment or its biological diversity;
- endanger the environment upon which life depends (e.g., chlorofluorocarbons [CFCs] damage the stratospheric ozone layer, increasing exposure to ultraviolet rays and thereby increasing the risk of skin cancer); or
- endanger human life or health (e.g., lead can hinder development of the human nervous system).

The three P's approach: proactive, preventive, and precautionary

CEPA 1999 focuses on a proactive approach to preventing harm to the environment and human health. It does this in many different ways. For example, it provides the authority to require the preparation and implementation of pollution-prevention plans for substances that are added to Schedule 1 of the Act and for Canadian sources of international air and water pollution. In the case of substances that meet the criteria of section 64, CEPA 1999 stipulates that preventive approaches must be a priority. In addition, the Act requires implementation of the precautionary principle, which states,

"where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

CEPA 1999 identifies the most dangerous substances as those that:

- meet the criteria of section 64 of the Act;
- enter the environment due to human activity, such as the discharge of industrial effluents and wastes;
- remain in the environment for a long time before breaking down or decomposing; and
- accumulate in the tissue of plants, animals, and/or humans.

For any substance that meets all four of these criteria, virtual elimination of its release into the environment is required. Other substances that meet the criteria of section 64, but do not meet the criteria above, may be controlled through regulations that govern matters such as their manufacture, import, use, release into the environment, and/or disposal.

The aim of the three Ps approach is to protect the environment and public health by reducing and preventing, to the greatest extent possible, exposure to hazardous substances and pollutants.

Existing substances

The Domestic Substances List (DSL) identifies the substances that are already in use in Canada. Any substance not included on the DSL is considered new.

There are 23,000 substances on the DSL in Canada, all of which have been examined for their impacts on the environment and human health by the Departments of the Environment and of Health under CEPA 1999. The categorization of these substances was completed in September 2006 and was based on whether they are persistent or bioaccumulative and inherently toxic to human beings and non-human organisms (as established by laboratory or other studies) or present the greatest potential for exposure to individuals in Canada.

The Government of Canada has identified 4300 substances from the DSL requiring further attention. Of them, 4000 met the categorization criteria and 300 were identified as requiring further attention from the human health perspective, to determine if they meet the criteria set out in section 64 of CEPA 1999.

The CEPA Priority Substances Assessment Program focuses on chemicals and other substances deemed to require in-depth assessment of risks to the environment and human health. These are designated on the Priority Substances List, the first of which (PSL1) was established in 1989. Of the 44 chemicals on PSL1, 25 met the criteria specified in CEPA 1988. The second list (PSL2) was published in 1995 and contained 25 more substances. Decisions have been made on whether some of these substances meet the criteria set out in CEPA 1999 and assessments continue on others.

The assessment reports, which are made available to the public, describe the characteristics of the substance, how it gets into the environment, its effects on human health and the environment, and the risks to human health associated with environmental exposure. If a substance meets the criteria of section 64 of CEPA 1999, controls may be placed on its use or release to the environment. These controls can take the form of guidelines, codes of practice, or regulations. CEPA 1999 can control hazardous substances throughout their entire life cycles, from development to disposal.

Chemicals Management Plan

To improve the degree of protection for Canadians against hazardous chemicals, the Government of Canada recently introduced its new Chemicals Management Plan, which includes a number of proactive measures to ensure that chemical substances are managed properly.

The Chemicals Management Plan will build on Canada's position as a global leader in the safe management of chemical substances and products. It will marshal new and better science to improve the assessment and mitigation of risks, and it will provide Canadians with better information about the safe use and disposal of a range of everyday products.

More information about the Chemicals Management Plan, including the list of substances to be addressed, can be found via the Chemical Substances Portal at <http://www.chemicalsubstanceschimiques.gc.ca>.

New substances

The Domestic Substances List (DSL) identifies the substances that are already in use in Canada. Any substance not included on the DSL is considered new. The federal government applies the preventive approach to new substances by requiring that industry provides data on them before they are manufactured or imported. CEPA 1999 can also require industry to provide information on substances when their exposure may change significantly with frequency or volume of use.

Health Canada and Environment Canada evaluate new substances for risks to human health or the environment. The Departments then decide whether a new substance may be manufactured in or imported into Canada, and whether controls or additional testing are warranted.

Biotechnology products

The Government of Canada has an overall regulatory policy that controls products of biotechnology under federal legislation. Under CEPA 1999, Health Canada and Environment Canada evaluate new biotechnology products for risks to human health or the environment and, as with other substances, whether these new biotechnology products may be manufactured in or imported into Canada and whether controls or additional testing are warranted.

In order to address the differences between living organisms and other substances such as chemicals, CEPA 1999 has a separate part that requires new living biotechnology products to be assessed before manufacture or importation. This requires manufacturers and importers to identify the organism and to describe its characteristics and exposure to both the environment and humans. As well, specific tests are necessary to ensure that the organism does not affect human health. As with new chemical substances, Health Canada, together with Environment Canada, carefully assesses the information and determines what controls or further testing are necessary.

Further information

Internet:

www.ec.gc.ca/ceparegistry.

Health Canada's CEPA fact sheets are also available at http://www.hc-sc.gc.ca/iyh-vsv/environ/cepa-lcpe_e.html.

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