Evaluating Existing Substances

Introduction

The Existing Substances Division represents the Department's expertise for ecological risk assessment of existing substances. Within Environment Canada, the Divison leads the Departmental program for assessing priority substances under the *Canadian Environmental Protection Act*, 1999 (CEPA 1999) as well as other initiatives under CEPA 1999. These include categorization and screening of the Domestic Substances List (DSL) as well as Section 75, which involves exchanging information and reviewing decisions from other jurisdictions on specifically prohibited or substantially restricted substances. The Division is also involved in other federal, intergovernmental and international assessment initiatives including the Toxic Substances Management Policy (TSMP), and the chemicals program of the Organization for Economic Cooperation and Development(OECD).

Overview of Existing Substances Program at Environment Canada

The Canadian Environmental Protection Act, 1999 (CEPA 1999) is one of the primary tools used to prevent and reduce threats posed to Canadians and the Canadian environment by substances used or released by our society. CEPA 1999 provides for the assessment and management of substances that can enter into the Canadian environment. It ensures the protection of the environment and the health of Canadians from exposure to "toxic" substances. Under Section 64 of CEPA, a substance is defined as "toxic" if it enters or may enter the environment in amounts or under conditions that may pose a risk to human health, the environment or its biological diversity, or to the environment that supports life. Risk managers within Environment Canada and Health Canada use the results generated by risk assessments to develop suitable responses under CEPA 1999 to manage the risks posed by toxic substances.

Environment Canada and Health Canada, through the Existing Substances Program, jointly identify, prioritize, and assess the risks resulting from existing substances. An existing substance is one that has been or is currently used in Canada as a commercial substance or product, or is released into the Canadian environment on its own or as an effluent, mixture or a contaminant.

The Existing Substances Division (ESD) at Environment Canada performs the following activities to establish whether or not specific substances may threaten human health or the environment and should be considered for risk management:

- Identifies substances for risk assessment -- Candidates are identified through seven mechanisms (feeders): 1) categorization of the Domestic Substances List (DSL), 2) industry-supplied information, 3) provincial or international decisions prohibiting or restricting substances, CEPA 1999), 4) public nominations to the Priority Substances List, 5) assessment of "new" substances similar to existing substances (for more information, please refer to the website of New Substances Division at Environment Canada, 6) emerging science and monitoring, and 7) international assessment or data collection.
- Collects and manages data -- To support the identification of substances justifying risk assessment and risk management activities, ESD generates and collects scientific and technical information on the properties and amounts, concentrations, or nature of entry of any given substance in the Canadian environment, and monitors activities taking place elsewhere. Information or activities from the public domain, other federal departments, provinces and territories, other countries, industry, and science research programs is compiled, organized, and tracked.

- Sets priorities for assessments -- Once candidate substances have been identified, ESD focuses its resources on those most urgently needing assessment. This ensures an effective and efficient assessment process, and provides the risk management program with the means to effectively manage priorities.
- Conducts risk assessments -- When substances have been identified and priorities established, ESD reviews information and proposes decisions on substances in the Canadian environment. This involves problem formulation, entry assessment, exposure assessment, effects assessment, and risk characterization. ESD invites external scientific and technical experts from various groups to participate in the risk assessment process.
- Coordinates and integrates information -- ESD consults, liaises, and coordinates with provincial, territorial, and aboriginal governments, other federal departments and programs, stakeholders, international organizations, and other countries.
- Ensures communications -- ESD is committed to a well-understood, open and accountable process. This ensures that concerns of all Canadians are heard and ESD is abreast of emerging issues to make its endeavours and decisions intelligible to the public.

For more information on the Existing Substances Program in Health Canada, please refer to their website at http://www.hc-sc.gc.ca/ewh-semt/contaminants/existsub/index_e.html.

Through these various tools, Environment Canada and Health Canada are able to provide a scientifically rigorous, open and transparent process for assessing and communicating the potential risks posed by existing substances in Canada.

Assessing Chemicals in Canada for Risk: Protecting the Health of Canadian and their Environment

Canadians have used a wide variety of chemicals and other compounds to create new and useful products since the early 1900s. Over time, science has shown us that, along with the benefits, some substances can pose risks to our environment and health. Canadians want to know more about the chemicals with which they come in contact and what effects these chemicals might have on their health and the environment.

As a country that recognizes the value of a healthy environment, Canada has set up processes under the Canadian Environmental Protection Act, 1999 (CEPA 1999) to scientifically consider in a comprehensive way chemicals that are used in Canada and to manage their risks to protect the health of Canadians and their environment. The Act and its resulting activities also provide information that companies can use to develop safer alternatives to substances that are scientifically determined to be harmful to the environment or human health.

Since 1994, Canada has studied new substances and organisms produced through biotechnology to assess their environmental and health risks before they are permitted entry or are produced in this country. Now, Canada is the first country in the world to undertake a systematic examination of the unassessed chemicals and other substances in use prior to introduction of the evaluation of new substances. In Canada, this represents some 23,000 substances. The Government of Canada is on track to meet its legislated deadline of September 2006 for completing this categorization exercise.

Prevention as a First Line of Defence: Assessing New Substances

All new chemicals as well as organisms produced through biotechnology (i.e. those not used in Canada before 1987) must undergo a government-led health and environmental risk assessment before being imported into or manufactured in Canada.

Under the Government of Canada's New Substances Notification Program, companies or individuals wishing to import or manufacture substances that are new to Canada to be used for a commercial

purpose must first notify the Government of Canada so that the substances can be assessed. If a substance is found to pose an unacceptable risk to the health of Canadians or their environment, then conditions may be imposed so that the substance is handled in ways that will reduce or adequately manage those risks. The Government of Canada may not allow some chemicals to be used at all for certain activities if their release to the environment cannot be adequately controlled. This allows Canada to prevent new sources of potential pollution. The Government of Canada assesses approximately 800 substances new to the Canadian marketplace each year.

Addressing the Past: A Systematic Look at Existing Substances

Prior to the New Substances Notification Program coming into effect, companies had to submit a formal list of all the chemicals that they were using or manufacturing commercially in Canada up to that time. This was used to make up the Domestic Substances List which contains approximately 23,000 chemicals. The majority of these chemicals are used in industrial processes and the list also contains some chemicals that can be found in consumer products.

CEPA 1999 requires the Government of Canada to categorize all of the chemicals on the Domestic Substances List by September 2006 to see whether they possess certain characteristics that may indicate they pose a risk to the environment or human health. Those characteristics are:

- Human Exposure - those substances that have the greatest potential for exposure to Canadians.
- Persistence - the time it takes for a substance to break down in the environment.
- Bioaccumulation - the tendency for a substance to accumulate in the tissues of living beings and be passed up through the food chain.
- Inherent Toxicity - whether a substance is harmful by its very nature to human health or other organisms.

Government scientists are collecting and considering the existing information on these chemicals. A wide variety of outcomes are possible. The risk posed by some will be found to be of concern and they will need to be appropriately managed. There may be cases where certain substances are found to no longer be in use in Canada, but where the hazard is such that the government wants to take action to ensure that the chemicals are not reintroduced. Alternatively, there may be substances that are used widely throughout Canada, but pose relatively little to no risk. Additionally, there may be other substances for which there is little scientific data and will require further research. Accordingly, this means that only a fraction of the substances on the Domestic Substances List will go forward through a full risk assessment and risk management.

This examination of the Domestic Substances List does not make a determination as to the risk a chemical may pose. Rather, it provides a sorting process to tell us which chemicals may need further study or action and which do not and which should be given priority. When a chemical is assessed following this sorting, and evidence demonstrates that it poses unacceptable risks to human health or the environment, it will be subjected to controls or phased out, according to the risk management requirements that already exist in Canada. Until such time as specific risk management actions are taken on any given substance, a substance on the Domestic Substances List may continue to be used in Canada.

The Path Forward to Protect Canadians

The work to categorize the Domestic Substances List is an enormous undertaking - it has not been attempted by any other government in the world. And yet, all nations face the same challenge. That is why the Government of Canada seeks input from other nations and is freely sharing the information that this exercise generates so that many countries can share in the effort to protect our global environment and our collective health.

Industries play an important role by sharing the information they have on the chemicals they use and by being innovative in finding ways to manage those chemicals identified as hazardous. Research institutes and universities in Canada and around the world are also involved by filling information gaps and developing tools for efficient assessment of these chemicals. The environmental community is monitoring the process and lending its own experts to the consultation process. As well, the Government of Canada is generating a significant body of research and robust scientific tools that will assist in future chemical assessments and risk management decisions. The Categorization exercise under CEPA 1999 is providing a wealth of additional scientific benefits that will further future research around the world.

Through this landmark exercise and its partnerships, Canada is addressing public concerns and leading the way towards a sustainable chemical management system that benefits the environment, human health and the economy.