

Screening Assessment for the Challenge

2-Chloroacetamide

**Chemical Abstracts Service Registry Number
79-07-2**

**Environment Canada
Health Canada**

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Synopsis

The substance 2-chloroacetamide was identified as high priority for screening assessment and was included in the Ministerial Challenge because it was found to pose a high hazard to human health based on its classification as a reproductive toxicant by the European Commission, and it was considered to present intermediate potential for exposure. 2-chloroacetamide did not meet the ecological categorization criteria for persistence, bioaccumulation, or inherent toxicity to aquatic organisms. The Ministers of the Environment and of Health have conducted a screening assessment on the substance.

In Canada, 2-chloroacetamide was first registered as a pesticide (material preservative) for use in paint, adhesive, dyestuff, detergent, textile and related industries under the *Pest Control Products Act* (PCPA) in 1977. This pesticide is currently subject to re-evaluation by Health Canada's Pest Management Regulatory Agency (PMRA), as required by the PCPA. There is currently only one registered product containing 2-chloroacetamide for use as a material preservative and this use is being discontinued by the registrant.

An industrial survey conducted under section 71 of CEPA 1999 identified only one non-pesticidal use of this substance in Canada above reporting threshold of 100 kg in 2006. However, further available data indicates that this use is specialized and that the product it is used in may no longer be imported into Canada by the submitter of the information. Additional searches for this substance were conducted up to November 2008, and no information was found on current non-pesticidal uses or releases of this substance in Canada. Therefore, the likelihood of exposure to this substance in Canada resulting from non-pesticidal uses is low.

Since no uses or releases of the above substance other than those covered by the PCPA have been identified in Canada, no additional efforts were made under CEPA 1999 to collect or analyze information relevant to the persistence, bioaccumulation, and inherent toxicity to human and non-human organisms of this substance beyond what was done for categorization of the *Domestic Substances List*.

2-Chloroacetamide is considered to be inherently toxic to humans as it has been classified by other agencies on the basis of reproductive toxicity. The substance is not considered to be inherently toxic to aquatic organisms (median lethal concentration or median effective concentration <1 mg/L) and it does not meet the criteria for persistence or bioaccumulation as set out in the *Persistence and Bioaccumulation Regulations*.

The re-evaluation of the pesticide 2-chloroacetamide was announced in April 2003, at which time PMRA requested additional information from the registrant in order to conduct a full health and environmental risk assessment. Based on its limited use pattern in Canada, the registrant decided to discontinue all uses of this pesticide and the last date of use for this product is December 31, 2009. Once a registrant discontinues all uses of a pesticide, it is no longer relevant for PMRA to continue to re-evaluate the health and environmental risks. In future, should the registrant decide to reinstate the old product or

to register a new product containing 2-chloroacetamide, a full health and environmental risk assessment would be required before the product could be sold or used in Canada.

Based on available information, and until new information is received indicating that the substance is entering or may enter the environment as a result of applications in Canada not registered under the PCPA, it has been determined that 2-chloroacetamide is currently not entering, nor is it likely to enter, the environment from applications not registered under the PCPA. Therefore, it is concluded that 2-chloroacetamide does not meet any of the criteria set out in section 64 of CEPA 1999.

As 2-chloroacetamide is a substance listed on the *Domestic Substances List*, its import and manufacture in Canada are not subject to notification under subsection 81(1) of CEPA 1999. Given the hazardous properties of this substance, there is concern that new activities for the substance (other than those covered under the PCPA), which have not been identified or assessed under CEPA 1999, could lead to the substance meeting the criteria set out in section 64 of the Act. Therefore it is proposed that 2-chloroacetamide be subject to the Significant New Activity provisions specified under subsection 81(3) of CEPA 1999.

Introduction

The *Canadian Environmental Protection Act, 1999* (CEPA 1999) (Canada 1999) requires the Minister of the Environment and the Minister of Health to conduct screening assessments of substances that have met the categorization criteria set out in the Act to determine whether these substances present or may present a risk to the environment or to human health. Based on the results of a screening assessment, the Ministers can propose to take no further action with respect to the substance, to add the substance to the Priority Substances List for further assessment or to recommend that the substance be added to the List of Toxic Substances in Schedule 1 of the Act and, where applicable, the implementation of virtual elimination.

Based on the information obtained through the categorization process, the Ministers identified a number of substances as high priorities for action. These include substances that

- met all of the ecological categorization criteria, including persistence (P), bioaccumulation potential (B) and inherent toxicity to aquatic organisms (iT), and were believed to be in commerce in Canada; and/or
- met the categorization criteria for greatest potential for exposure (GPE) or presented an intermediate potential for exposure (IPE) and had been identified as posing a high hazard to human health based on classifications by other national or international agencies for carcinogenicity, genotoxicity, developmental toxicity or reproductive toxicity.

The Ministers therefore published a notice of intent in the *Canada Gazette*, Part I, on December 9, 2006 (Canada 2006), which challenged industry and other interested stakeholders to submit, within specified timelines, specific information that may be used to inform risk assessment and to develop and benchmark best practices for the risk management and product stewardship of those substances identified as high priorities.

The substance 2-chloroacetamide, Chemical Abstracts Service Registry Number 79-07-2 was identified as high priority for screening assessment and was included in the Ministerial Challenge because it was found to pose a high hazard to human health based on its classification as a reproductive toxicant by the European Commission, and it was considered to present intermediate potential for exposure. 2-Chloroacetamide did not meet the ecological categorization criteria for persistence, bioaccumulation, or inherent toxicity to aquatic organisms (Environment Canada 2006).

The Challenge for 2-chloroacetamide was published in the *Canada Gazette* on February 16, 2008 (Canada 2008). A substance profile was released at the same time. The substance profile presented the technical information available prior to December 2005 that formed the basis for categorization of the substance. As a result of the Challenge,

submissions of information were received (Environment Canada 2008) and the Ministers of the Environment and of Health have conducted a screening assessment of 2-chloroacetamide.

Under CEPA 1999, screening assessments focus on information critical to determining whether a substance meets the criteria for defining a chemical as “toxic” as set out in section 64 of the Act, where

64. [...] a substance is toxic if it is entering or may enter the environment in a quantity or concentration or under conditions that
- (a) have or may have an immediate or long-term harmful effect on the environment or its biological diversity;
 - (b) constitute or may constitute a danger to the environment on which life depends; or
 - (c) constitute or may constitute a danger in Canada to human life or health.

For a substance to be imported, manufactured or used in Canada, it must be listed on CEPA 1999’s Domestic Substances List (DSL) or regulated under another federal government Act that is scheduled under CEPA 1999. The *Pest Control Products Act* (PCPA), which is administered by Health Canada’s Pest Management Regulatory Agency (PMRA), is scheduled under CEPA 1999. Pesticides must undergo a pre-market environmental and health risk assessment by PMRA.

In Canada, 2-chloroacetamide was first registered as a pesticide (material preservative) for use in paint, adhesive, dyestuff, detergent, textile and related industries under the PCPA in 1977. This pesticide is currently subject to re-evaluation by PMRA, as required by the PCPA. There is currently only one registered product containing 2-chloroacetamide for use as a material preservative (PMRA 2008), and this use is being discontinued by the registrant.

For the screening assessment under CEPA 1999 of a registered pesticide on the DSL, the approach of Environment Canada and Health Canada is to conduct an entry characterization of the substance in Canada and then evaluate any non-pesticidal releases and sources.

A summary of the critical information used as a basis for this screening assessment is presented below.

Summary of Information Used as Basis for Screening Assessment

An industrial survey conducted under section 71 of CEPA 1999 revealed only one non-pesticidal use of this substance in Canada above the reporting threshold of 100 kg in 2006 (Environment Canada 2008). However, the product it was reported to be used in is no longer imported into Canada by the submitter of the information. Entry characterization consisted of additionally searching for information on releases and sources of the substance in relevant databases and on the Internet and reviewing findings for both Canada and elsewhere. Searches for this substance were conducted up to November

2008, and no information was found on current non-pesticidal uses or releases of this substance in Canada (Canada 1988; Environment Canada 1988; Ash and Ash 1998, 2002; US EPA 1998; BUA 2000; US FDA 2002a, 2002b; Gottschalck and McEwen 2004; OECD 2004; IPCS 2006; MSDS 2006a, 2006b; SPIN 2006; Health Canada 2007; Lewis 2007; HSDB 2008). Therefore, the likelihood of exposure to this substance in Canada resulting from non-pesticidal uses is low.

Since no uses or releases of the above substance other than those covered by the PCPA have been identified in Canada, no additional efforts were made under CEPA 1999 to collect or analyze information relevant to the persistence, bioaccumulation and inherent toxicity to human and non-human organisms of this substance beyond what was done for categorization of the DSL (Environment Canada 2006).

2-Chloroacetamide is considered to be inherently toxic to humans, as it has been classified by other agencies on the basis of reproductive toxicity (European Commission 1997). The substance is not considered to be inherently toxic to aquatic organisms (median lethal concentration [LC₅₀] or median effective concentration [EC₅₀] <1 mg/L), and it does not meet the criteria for persistence or bioaccumulation as set out in the *Persistence and Bioaccumulation Regulations* (Canada 2000).

The re-evaluation of the pesticide 2-chloroacetamide was announced in April 2003, at which time PMRA requested additional information from the registrant in order to conduct a full health and environmental risk assessment. Based on its limited use pattern in Canada, the registrant decided to discontinue all uses of this pesticide, and the last date of use for this product is December 31, 2009. Once a registrant discontinues all uses of a pesticide, it is no longer relevant for PMRA to continue to re-evaluate the health and environmental risks. In future, should the registrant decide to reinstate the old product or to register a new product containing 2-chloroacetamide, a full health and environmental risk assessment would be required before the product could be sold or used in Canada.

Conclusion

Based on available information, and until new information is received indicating that the substance is entering or may enter the environment as a result of applications in Canada not registered under the PCPA, it has been determined that 2-chloroacetamide is currently not entering, nor is it likely to enter, the environment from applications not registered under the PCPA. Therefore, it is concluded that 2-chloroacetamide does not meet the definition of “toxic” set out in section 64 of CEPA 1999.

As 2-chloroacetamide is listed on the DSL, its import and manufacture in Canada are not subject to notification under subsection 81(1) of CEPA 1999. Given the hazardous properties of this substance, there is concern that new activities for the substance (other than those covered under the PCPA), which have not been identified or assessed under CEPA 1999, could lead to the substance meeting the criteria set out in section 64 of the

Act. Therefore, it is proposed that 2-chloroacetamide be subject to the Significant New Activity provisions specified in CEPA 1999.

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