

## **Summary of Risk Assessment Conducted Pursuant to subsection 83(1) of the *Canadian Environmental Protection Act, 1999***

New Substances Notification 21062: 1-Propene, 1-chloro-2,3,3,3-tetrafluoro-, (1Z)- (Chemical Abstracts Service Registry Number 111512-60-8)

### **Regulatory decisions**

Under the provisions for Substances and Activities New to Canada in Part 5 of the *Canadian Environmental Protection Act, 1999* (CEPA), and pursuant to section 83 of the Act, the Minister of the Environment and the Minister of Health have assessed information in respect of the substance and have determined that it is not anticipated to enter the environment in a quantity or concentration or under conditions that have or may have an immediate or long term harmful effect on the environment or its biological diversity, constitute or may constitute a danger to the environment on which life depends, or constitute or may constitute a danger in Canada to human life or health.

### **Substance identity**

The notified chemical is 1-propene, 1-chloro-2,3,3,3-tetrafluoro-, (1Z)- (Chemical Abstracts Service Registry Number<sup>1</sup> 111512-60-8).

### **Notified and potential uses**

The substance is proposed to be imported into Canada in quantities greater than 10 000 kg/yr for the notified use as a refrigerant, foam-blowing agent, and specialized solvent. Potential uses may include a pest control product, a propellant, and in a variety of industrial applications.

### **Environmental fate and behaviour**

Based on its physical and chemical properties, if the substance is released to the environment, it will tend to partition to air. The substance is expected to be persistent in air based on its long atmospheric half-life (> 2 days). The substance is not expected to bioaccumulate in aquatic organisms as its physical chemical properties indicate it will not partition to aquatic media.

### **Environmental risk assessment**

Based on the available hazard information, the substance has low acute toxicity to fish (median lethal concentration [LC<sub>50</sub>] > 100 mg/L) and algae (no adverse effects observed in saturated solutions) and moderate acute toxicity to aquatic invertebrates (median effective concentration

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1-100 mg/L). A predicted no-effect concentration was not calculated given the low potential for hazard to the environment.

The notified substance is a highly volatile halogenated organic chemical and, as such, its abiotic effects were also assessed. The photochemical ozone creation potential, the ozone depletion potential, and the global warming potential of the substance are all considered to be low.

The notified and other potential activities in Canada were assessed to estimate the environmental exposure potential of the substance throughout its life cycle. Environmental exposure from the notified activities is expected to be mainly from use and disposal from release of the substance to air at low rates. A predicted environmental concentration was not calculated due to the low potential for environmental exposure. No potential activities that could significantly increase environmental risks compared to those notified were identified.

Based on the low potential for environmental exposure, the substance is unlikely to cause harm to the environment in Canada.

### **Human health risk assessment**

Based on the available hazard information, the substance has a low acute toxicity by the inhalation route ( $LC_{50} > 2500$  ppm/4hr) and low subchronic toxicity following repeated inhalation doses in mammalian test animals (28-day no-observed-effect-concentration  $> 3$  mg/L/6hr ; 90-day no-observed-adverse-effect concentration [NOAEC]  $> 3$  mg/L/6hr). The substance has a low reproductive/developmental toxicity following repeated inhalation doses in mammalian test animals (NOAEC  $> 3$  mg/L/6hr). It is not a cardiac sensitizer (0% response in dogs). It is not mutagenic, but is clastogenic *in vitro*. It is not genotoxic, however, when tested *in vivo*. Therefore, the substance is unlikely to cause genetic damage.

When the notified substance is used as a refrigerant, foam-blowing agent, and specialized solvent, direct exposure of the general population is not expected due to the industrial nature of the use. Indirect exposure of the general population from environmental media is not expected given the specialized industrial/commercial use of the substance, which results in little or no release to the environment.

Potential uses of the substance include a variety of industrial applications, where direct exposure of the general population is expected to be at levels that do not pose a concern, similar to that of the notified use. Potential uses of the substance also include consumer aerosol products such as computer dusters, where direct exposure of the general population is expected to be mainly by inhalation at very low levels. Indirect exposure of the general population from environmental media is expected to be at levels that do not pose a concern, similar to that of the notified use.

Based on the low toxicity and low potential for exposure, the substance is not likely to pose a significant health risk to the general population, and is therefore unlikely to be harmful to human health.

The assumptions made in the assessment are considered to be adequately protective for the general population as well as for subpopulations who may be more susceptible or highly exposed.

### **Assessment conclusion**

When the substance is used as notified or for other identified potential activities, it is not expected to be harmful to human health or the environment according to the criteria under section 64 of the Act.

A conclusion under CEPA, on this substance, is not relevant to, nor does it preclude an assessment against the hazard criteria for Workplace Hazardous Materials Information System that are specified in the *Controlled Products Regulations* or the *Hazardous Products Regulations* for products intended for the workplace.

The substance meets the Organisation for Economic Co-operation and Development's definition of per- and polyfluoroalkyl substances (PFAS). A [notice of intent to address the broad class of PFAS](#) was published in the *Canada Gazette*, Part I, Vol. 155 No. 17 on April 24, 2021, and a draft [State of PFAS Report](#) was published on May 20, 2023. Any future regulatory or non-regulatory actions on PFAS may implicate this substance.