

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

New Substances Notification 21315: Phenol, 4-ethenyl-, acetate, homopolymer, substituted poly [2,4-dimethylpentanesubstituted]-initiated, hydrolyzed, *tert*-Bu carbonates (Confidential Accession Number 19663-1)

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 polymer is phenol, 4-ethenyl-, acetate, homopolymer, substituted poly [2,4-dimethylpentanesubstituted]-initiated, hydrolyzed, *tert*-Bu carbonates (Confidential Accession Number 19663-1). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations (Chemicals and Polymers)* because it contains certain reactive functional groups.

Notified and potential uses

The substance is proposed to be manufactured in and imported into Canada in quantities greater than 10 000 kg/yr for the notified use in the manufacturing of electronic products and in industrial adhesives and coatings. Potential uses may include consumer coatings and adhesives.

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 soil and sediment. The substance is expected to be persistent in these compartments because it does not contain any functional groups that are susceptible to hydrolysis or biodegradation. The substance is not expected to bioaccumulate based on its high molecular weight, which will limit its ability to cross biological membranes.

Environmental risk assessment

Based on the available hazard information, the substance is not expected to have adverse effects on fish, aquatic invertebrates, and algae. A predicted no-effect concentration was not calculated given the low potential for hazard to the environment.

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 activity is expected to be mainly by release of the substance to water at low rates. A predicted environmental concentration was not calculated because of the low potential for environmental exposure and low ecotoxicity. No potential activities that could significantly increase environmental risks compared to those notified were identified.

Based on the low potential for ecotoxicity and 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 is expected to have a low acute toxicity by the oral and dermal routes (median lethal dose > 2000 mg/kg body weight). It is not expected to be a dermal sensitizer (0% response in a guinea pig maximization test). It is not expected to be mutagenic *in vitro*. Therefore, the substance is unlikely to cause genetic damage.

When the notified substance is used in the manufacture of electronic products primarily for end-use application outside of Canada, direct exposure of the general population is not expected due to the industrial nature of the use. When the notified substance is used in industrial adhesives and coatings, consumers may come into direct dermal contact with products containing the substance; however, the substance will be chemically reacted into a stable matrix once the product is cured and will be unavailable for dermal uptake.

Potential uses of the substance include consumer adhesives and coatings, where direct exposure of the general population is expected to be mainly by contact with the skin; however, dermal uptake will be limited by the large molecular size of the substance. As such, direct exposure of the general population from the potential consumer uses is not expected to be harmful to human health. Indirect exposure of the general population from environmental media such as drinking water for the notified and potential uses is expected to be low.

Based on the low potential for exposure and low toxicity, 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 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.