

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

New Substances Notification No. 18987: 2-Propenoic acid, diester with 2,2'-[oxybis(methylene)]bis[2-ethyl-1,3-propanediol], polymer with dimethyl carbonate, 1,2-ethanediol, 1,6-hexanediol, 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoic acid and 1,1'-methylenebis[4-isocyanatocyclohexane], alkyl-2-[[2-(hydroxyalkyl)-2-[[[(1-oxo-alkenyl)oxy]alkyl]alkoxy]alkyl]-alkanediyl diacrylate-blocked, compounds with triethylamine

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 2-propenoic acid, diester with 2,2'-[oxybis(methylene)]bis[2-ethyl-1,3-propanediol], polymer with dimethyl carbonate, 1,2-ethanediol, 1,6-hexanediol, 3-hydroxy-2-(hydroxymethyl)-2-methylpropanoic acid and 1,1'-methylenebis[4-isocyanatocyclohexane], alkyl-2-[[2-(hydroxyalkyl)-2-[[[(1-oxo-alkenyl)oxy]alkyl]alkoxy]alkyl]-alkanediyl diacrylate-blocked, compounds with triethylamine (Confidential Accession No. 19118-2). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations (Chemicals and Polymers)* because it contains pendant acrylates.

Notified and Potential Activities

The substance is proposed to be imported into Canada in quantities greater than 10 000 kg/yr for the notified use in ultraviolet/electron beam (UV/EB) coatings. No other activities are anticipated in Canada.

Environmental Fate and Behaviour

Based on its physical and chemical properties, if released to the environment, the substance will tend to partition to soil and sediment. The substance is expected to be persistent in soil and sediment because the functional groups susceptible to degradation are embedded within the large polymer matrix, and based on long experimental half-lives of similar substances (>182 days in soil and >365 days in sediment). The substance is not expected to bioaccumulate based on its high molecular weight which will limit its ability to cross biological membranes.

Ecological Assessment

Based on the available hazard information on structurally related chemicals, the substance is expected to have low chronic toxicity in algae (no-observed-effect-concentration >10 mg/L). A predicted no-effect concentration was not calculated given the low potential for ecological hazard.

The notified 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 not expected. A predicted environmental concentration was not calculated due to the low potential for environmental exposure and expected low ecotoxicity.

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

Human Health Assessment

Based on the available hazard information on structurally related chemicals, the substance is expected to have a low potential for acute toxicity by the oral route (median lethal dose >300 mg/kg body weight with no evidence of mortality or significant toxicity).

When the notified substance is used as a resin, consumers may come into contact with end-use products containing the substance; however, direct exposure is not expected because the substance will be chemically reacted into a stable matrix once the product is cured and will be unavailable for uptake. Indirect exposure of the general population from environmental media such as drinking water is not expected given the specialized industrial use of the substance, which results in little or no release to the environment. No other uses have been identified.

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.

Assessment Conclusion

When used as notified, the substance is not suspected to be harmful to human health or the environment according to the criteria under section 64 of CEPA.

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 *Hazardous Products Regulations* for products intended for the workplace.