

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

New Substances Notification No. 18032: Benzenedicarboxylic acid, polymer with (chloroalkyl) oxirane, 2,2-dimethyl-1,3-propanediol, hexanedioic acid, 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-(hydroxymethyl)-1,3-propanediyl di-2-propenoate, 3-hydroxy-2-(hydroxymethyl-2-methylpropanoic acid, 1,1'-methylenebis [4-isocyanatocyclohexane], (alkylalkylidene)bis[phenol] and 2-propenoic acid, dipentaerythritol pentaacrylate-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 that 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

Benzenedicarboxylic acid, polymer with (chloroalkyl) oxirane, 2,2-dimethyl-1,3-propanediol, hexanedioic acid, 2-[[3-hydroxy-2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-(hydroxymethyl)-1,3-propanediyl di-2-propenoate, 3-hydroxy-2-(hydroxymethyl-2-methylpropanoic acid, 1,1'-methylenebis [4-isocyanatocyclohexane], (alkylalkylidene)bis[phenol] and 2-propenoic acid, dipentaerythritol pentaacrylate-blocked, compounds with trimethylamine (Confidential Accession No. 18862-7) is a polymer that can be classified as an acrylate polyurethane. The substance does not meet the Reduced Regulatory Requirements criteria according to the New Substances Notification Regulations because of presence of pendant and terminal acrylate groups.

Notified and Potential Activities

The substance is proposed to be imported into Canada in quantities greater than 10 000 kg/yr for use in resin dispersion for ultraviolet/electron beam (UV/EB) coatings. Other potential coating applications may include the roller, spray, curtain and vacuum types.

Environmental Fate and Behaviour

Based on its physical and chemical properties, if released to the environment, the substance will tend to partition to water. The substance is expected to be persistent in water, based on its functional groups susceptible to degradation being embedded inside the polymer matrix and the rate of degradation being affected by the high molecular weight of the polymer. The substance is

not expected to bioaccumulate based on its high molecular weight making it unable to cross biological membranes.

Ecological Assessment

Based on the available hazard information, the substance has low acute toxicity in algae (median effective concentration >100 mg/L). Calculation of a predicted no-effect concentration was not considered necessary given the low ecotoxicity.

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 activities is not expected to be significant as the substance will be chemically reacted into the stable matrix of the UV/EB coating. As such, a predicted environmental concentration was not calculated.

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

Human Health Assessment

Based on the available hazard information on the substance, the substance has a low potential for acute toxicity by the oral route of exposure (median lethal dose >2000 mg/kg-body weight).

When used as a UV/EB curable resin for wood flooring and wood furniture coatings or in other potential uses, direct exposure of the general population is expected to be low as the substance will be chemically reacted into the stable matrix of the coating and is not readily released. Other potential uses, such as roller, spray, curtain and vacuum coating applications, are expected to have similar exposure patterns as the notified use. Indirect exposure of the general population from environmental media such as drinking water is considered unlikely.

Based on the low potential for exposure in conjunction with the low acute oral 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.

Assessment Conclusion

When the substance is used as notified or for other identified potential uses, it 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 the *Hazardous Products Regulations* for products intended for workplace use.