

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

New Substances Notification No. 18461: Poly[oxy(methyl-1,2-ethanediyl)], α -[2-[[3-ethoxy-1-(ethoxycarbonyl)-3-oxopropyl]amino]methylethyl]- ω -2[[3-ethoxy-1-(ethoxycarbonyl)-3-oxopropyl]amino]methylethoxy]-

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 polymer, poly[oxy(methyl-1,2-ethanediyl)], α -[2-[[3-ethoxy-1-(ethoxycarbonyl)-3-oxopropyl]amino]methylethyl]- ω -2[[3-ethoxy-1-(ethoxycarbonyl)-3-oxopropyl]amino]methylethoxy]- (Chemical Abstracts Service Registry No. 152637-10-0), that can be classified as a poly(ether). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations* because it contains potentially cationic amine groups and a high percentage of low molecular weight components.

Notified and Potential Activities

The substance is proposed to be manufactured in and/or imported into Canada in quantities greater than 10 000 kg/yr for use in polyurethane coatings used in industrial flooring applications. Potential uses may include corrosion protection and direct-to-metal coatings

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 not expected to be persistent in water based on rapid hydrolysis under environmental conditions (≤ 10 days). The substance is not expected to bioaccumulate based on its low octanol-water partition coefficient ($\log K_{ow}$ 0-3) and low predicted bioconcentration and bioaccumulation factors (< 250 L/kg).

Ecological Assessment

Based on the available hazard information, the substance has low acute toxicity in aquatic invertebrates and algae based on experimental data (median effective loading > 100 mg/L), and is

expected to have moderate acute toxicity in fish based on estimated data (median lethal concentration 1-100 mg/L). A predicted no-effect concentration was not calculated given the low potential for ecological risk.

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 expected to be mainly from the cleaning of transportation or formulation vessels by release of the substance via waste water at low levels. Releases are expected to be mitigated by the rapid hydrolysis of the substance in water. Due to the low potential for environmental exposure and the low ecotoxicity of the substance, a predicted environmental concentration for notified activities was not estimated. No other potential activity was identified.

Based on experimentally demonstrated low aquatic toxicity 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, the substance has a low acute toxicity by oral route (median lethal dose >2000 mg/kg body weight). It is a weak skin sensitizer (effective concentration >10% (local lymph node assay)). It is not mutagenic *in vitro*. Therefore, the substance is unlikely to cause genetic damage.

When the notified substance is used in industrial flooring applications, direct exposure of the general population is not expected because the substance will be chemically reacted into a stable matrix once cured and unable to be released from end-use products. Indirect exposure of the general population from environmental media such as drinking water and air is expected to be low. Potential applications of the substance include use in corrosion protection and direct-to-metal coatings. The potential for direct or indirect exposure of the general population is not expected to differ from the notified use.

Based on the low potential for exposure and the low acute 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.