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

New Substances Notification No. 18483: Poly[oxy(methyl-1,2-ethanediyl)], α, α', α"-1,2,3-propanetriyltris[ω-hydroxy-, polymer with a α-hydro-ω-hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 1,1'-methylenebis[isocyanatobenzene]

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, α', α"-1,2,3-propanetriyltris[ω-hydroxy-, polymer with a α-hydro-ω-hydroxypoly[oxy(methyl-1,2-ethanediyl)] and 1,1'-methylenebis[isocyanatobenzene] (Chemical Abstracts Service Registry No. 150409-28-2), can be classified as a polyurethane polyether. The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations* because it contains terminal isocyanates and arylcarbodiimide groups.

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 as a polyurethane foam sealant. Potential uses may include, but are not limited to, use in industrial and commercial coatings, adhesives, or fibers.

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 it reacts with water to form high molecular weight, insoluble complexes that are resistant to degradation. 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 acute toxicity in fish and aquatic invertebrates (median lethal concentration

and median effective concentration >100 mg/L). A predicted no-effect concentration was not calculated given the low potential for ecological risk.

The notified and 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 from consumer disposal of aerosol cans containing the substance through municipal waste programs. Environmental exposure from potential uses such industrial and commercial coatings and adhesives is expected to be similar to the notified use. A predicted environmental concentration for notified or potential activities was not estimated given that the insolubility of the substance resultsin a low potential for ecological risk.

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

Human Health Assessment

Based on available the hazard information on the substance and surrogate data on structurally related chemicals, the substance has a low acute toxicity by oral route (median lethal dose >2000 mg/kg body weight). The substance contains isocyanate functional groups, which are sometimes associated with acute inhalation toxicity and skin sensitization.

When the notified substance is used as a polyurethane foam sealant, direct exposure of the general population is expected to be mainly by contact with the skin. However, the high molecular weight of the substance inhibits its ability to cross biological membranes so significant dermal uptake is not expected. Inhalation exposure is not expected as the product containing the substance is applied as liquid foam, and the substance is expected to have a low vapour pressure. Direct dermal contact with surfaces treated with the substance is also possible; however, the substance will already be chemically reacted into a stable matrix once cured and will be unavailable for uptake. Indirect exposure of the general population from environmental media such as drinking water is not expected. Other potential uses of the notified substance include, but are not limited to, use in industrial and commercial coatings, adhesives, or fibers. Direct and indirect exposure to the general population is expected to be similar to that of the notified use.

Based on the low potential for direct and indirect 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 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.