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

New Substances Notification No. 18780: Waste plastics, poly(ethylene terephthalate), depolymerized with diethylene glycol, alkanepolyol, polyalkylene polyol and polyethylene polyol

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 waste plastics, poly(ethylene terephthalate), depolymerized. with diethylene glycol, alkanepolyol, polyalkylene polyol and polyethylene polyol (Confidential Accession No. 19181-9). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations (Chemicals and Polymers)* because its number average molecular weight is less than 1,000 daltons and because it contains short-chain ethylene glycol moieties.

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 an intermediate in the manufacture of rigid foam insulation. No other activities are anticipated in Canada.

Environmental Fate and Behaviour

Based on its physical and chemical properties, the substance will tend to partition evenly to water and soil or sediment if released to the environment. The substance is not expected to be persistent in water, soil or sediment because it is considered to be readily biodegradable and has an expected half-life of <182 days in water and soil and <365 days in sediment. The substance is not expected to bioaccumulate based on its low octanol-water partition coefficient (log K_{ow} 0-3).

Ecological Assessment

Based on the available hazard information, the substance has low acute toxicity in algae (no adverse effects observed in saturated solution), and based on modelled toxicity data the substance has low acute toxicity in fish, aquatic invertebrates and algae (median lethal

concentration and median effective concentration >100 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 activities is expected to be low. The substance will be consumed during the manufacture process and unavailable for release, and any incidental release of the substance to water from cleaning of transport vessels or formulation is expected to be mitigated via adsorption in wastewater treatment processes. A predicted environmental concentration was not estimated given the low potential for environmental exposure. No other activities have been identified.

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, the substance has low potential for acute toxicity by the oral route of exposure (median lethal dose >2000 mg/kg body weight). The substance contains ethylene glycol functional groups which have been associated with blood, kidney, and liver toxicity, central nervous system depression, and developmental and reproductive toxicity.

When the notified substance is used industrially as an intermediate in the manufacture of rigid foam insulation, 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 expected to be low as significant environmental release is not expected. No other uses were identified.

Based on the low potential for direct or 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, 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 *Hazardous Products Regulations* for products intended for the workplace.