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

New Substances Notification No. 18962: 2-Propenoic acid, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate, carboxylate

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, 2-methyl-, 2-(dimethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate, carboxylate (Confidential Accession No. 19116-0). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations (Chemicals and Polymers)* because it contains cationic amine 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 polymer resin for industrial wood coatings. Potential activities may include manufacture and formulation.

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 does not contain any functional groups that are susceptible 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 the substance and surrogate data on structurally related chemicals, the substance is expected to have low to moderate acute toxicity in fish and algae (median lethal concentration (LC_{50}) and median effective concentration (EC_{50}) >1 mg/L) and low acute toxicity in aquatic invertebrates (LC_{50} >100 mg/L). Further, when mitigated with dissolved organic carbon at a concentration expected in the natural environment, both the

surrogate substance and predicted data suggest a low overall toxicity for the notified substance under environmental conditions. Using the EC_{50} from the most sensitive organism (algae) and by applying an appropriate assessment factor, the predicted no-effect concentration (PNEC) was calculated to be 1000 to 10 000 µg/L, which was used to estimate the ecological risk.

The notified and other potential 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 cleaning of transportation vessels by release of the substance to water at rates of 0.1 to 1 kg/day/site. For potential activities such as manufacturing and formulation, environmental exposure is expected to be mainly by release of the substance to water at a rate of 1-10 kg/day/site for manufacturing activities and 0.1 to 1 kg/day/site for formulation activities. The predicted environmental concentration (PEC) is estimated to be 0.1 to 1 µg/L for notified and potential formulation activities and 1 to 10 µg/L for potential manufacturing activities.

Comparing the PEC for notified and potential activities with the PNEC, the ratio is less than 1. This, along with other lines of evidence, including hazard, exposure and environmental fate, indicates that the substance is unlikely to cause ecological harm in Canada.

Human Health Assessment

No mammalian toxicity data are available for the substance. The substance is not expected to be toxic to human health given that no structural alerts were identified that would be associated with toxicity. As well, its high molecular weight will limit its ability to cross biological membranes.

When the notified substance is used as a polymer resin for wood coatings, direct exposure of the general population is not expected due to the industrial nature of the use.

Based on the low expected 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 or for other identified potential uses, 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.