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

New Substances Notification 21089: 1-Octanol, reaction products with phosphorus oxide (P_2O_5), potassium salts (Chemical Abstracts Service Registry Number 111062-42-1)

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 chemical is 1-octanol, reaction products with phosphorus oxide (P_2O_5), potassium salts (Chemical Abstracts Service Registry Number[1] 111062-42-1).

Notified and potential uses

The substance is proposed to be imported into Canada in quantities greater than 10 000 kg/yr for the notified use as an additive in paints and coatings. Potential uses may include various cleaning products.

Environmental fate and behaviour

Based on its physical and chemical properties, if the substance is released to the environment, it will tend to partition to water. The substance is not expected to be persistent in this compartment based on its expected inherent biodegradation (30-60% over 28 days). The substance is not expected to bioaccumulate based on its affinity for water and ionic charge, which will limit its ability to cross biological membranes.

Environmental risk assessment

Based on the available hazard information, the substance is not expected to have adverse effects in saturated solutions in fish, aquatic invertebrates, and algae. A predicted no-effect concentration was not calculated given the low potential for hazard to the environment.

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 by release of the substance to water at low rates. A predicted environmental concentration was not calculated due to the low potential for ecotoxicity. No potential activities that could significantly increase environmental risks compared to those notified were identified.

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

Human health risk assessment

Based on the available hazard information, the substance is expected to have a low acute toxicity by the oral route (median lethal dose > 2000 mg/kg body weight) and is expected to have low subchronic toxicity following repeated oral doses in mammalian test animals. The substance is expected to have a low reproductive/developmental toxicity following repeated oral doses in mammalian test animals. It is not expected to be a dermal sensitizer. It is not expected to be mutagenic or clastogenic *in vitro*. Therefore, the substance is unlikely to cause genetic damage. The substance does not contain structural features associated with adverse human health effects.

When the notified substance is used as an additive in paints and coatings, direct exposure of the general population is expected to be mainly by contact with the skin. When the notified substance is used in industrial or commercial paint or coating applications, consumers may come in contact with end-use products containing the substance; however, direct exposure is not expected because the substance will be encapsulated within a stable matrix once the product is cured and will be unavailable for uptake. When the substance is used in consumer paints or coatings, consumers using these products may come into direct contact with the substance, however, exposure will be limited by the infrequent and short duration of use, the low concentration of the substance in consumer products, and the limited ability of the substance to cross biological membranes. Indirect exposure of the general population from environmental media such as drinking water is expected to be at low levels given the low potential for environmental release.

Potential uses of the substance include cleaning agents such as hard surface cleaners, laundry detergents, dish and glass rinsing aids, where direct and indirect exposure of the general population is expected to be at levels that do not pose a concern.

Based on the low 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.

The assumptions made in the assessment are considered to be adequately protective for the general population as well as for subpopulations who may be more susceptible or highly exposed.

Assessment conclusion

When the substance is used as notified or for other identified potential activities, it is not expected to be harmful to human health or the environment according to the criteria under section 64 of the Act.

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 the workplace.