

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

New Substances Notification 20765: Silsesquioxanes, 3-aminopropyl Me, ethoxy-terminated
(Chemical Abstracts Service Registry Number 128446-60-6)

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 silsesquioxanes, 3-aminopropyl Me, ethoxy-terminated (Chemical Abstracts Service Registry Number¹ 128446-60-6). The substance does not meet the Reduced Regulatory Requirements criteria according to the *New Substances Notification Regulations (Chemicals and Polymers)* because it contains a high percentage of low molecular weight components and a number average molecular weight less than 1000 daltons.

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 adhesion promoter in sealants. No other uses are anticipated in Canada.

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 based on its short half-life in water. However, the environmental products of hydrolysis are expected to be persistent in water. The substance and its products of hydrolysis are not expected to bioaccumulate based on the low predicted bioaccumulation factor (< 250 L/kg).

Environmental risk assessment

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Based on the available hazard information, the substance has low acute toxicity to aquatic invertebrates (no adverse effects observed in saturated solutions) and low chronic toxicity to algae (no-observed-effect loading rate > 10 mg/L). 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 activity 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 harm to the environment in Canada.

Human health risk assessment

When the notified substance is used as an adhesion promoter in industrial and commercial applications, 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. When the substance is used in consumer applications, the general population may be exposed to the notified substance in the products via dermal contact or inhalation. The substance contains structural features associated with subchronic toxicity following inhalation; however, the potential for exposure can be mitigated by the infrequent use of the sealant products, the short duration of use, the low concentration of the substance in these products as well as the rapid curing of the substance. 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. No potential uses that could significantly increase human health risks compared to the notified uses were identified.

Based on the 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 and 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.