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

New Substances Notification No. 19160: Benzenesulfonic acid, mono-C_{20-24}-alkyl derivatives, magnesium salts (Chemical Abstracts Service No. 231297-75-9)

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 benzenesulfonic acid, mono-C_{20-24}-alkyl derivatives, magnesium salts (Chemical Abstracts Service No. 231297-75-9), and is a substance referred to as unknown or variable composition, complex reaction products or biological materials (UVCB).

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 the notified use as an oil additive. Potential uses may include a variety of applications, such as use in oil recovery, polymerization, anti-foulants, greases, metal-working fluids, detergents, oils and hydraulic fluids.

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 sediment based on its low biodegradability (10-30% over 28 days). The substance is not expected to bioaccumulate based on its limited bioavailability, supported by its expected low bioconcentration factor (<250 L/kg).

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 acute toxicity in fish and aquatic invertebrates (no adverse effects observed in saturated solutions) and low chronic toxicity in aquatic invertebrates and algae (10% effective loading rate >10 mg/L; no adverse effects observed in saturated solutions). A predicted no-effect concentration was not calculated given the low potential for ecological hazard.

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 low rates. For potential activities such as manufacturing, environmental exposure is expected to be similar to that of the notified use. A predicted environmental concentration was not calculated due to the low potential for environmental exposure and ecotoxicity.

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 on structurally related chemicals, the substance is expected to have a low potential for acute toxicity by the oral and dermal routes (oral median lethal dose (LD_{50}) >2000 mg/kg body weight; dermal LD_{50} >1000 mg/kg body weight with no mortality or systemic toxicity) and low subchronic toxicity following repeat oral and dermal doses in mammalian test animals (oral 28-day no-observed-adverse-effect level (NOAEL) >300 mg/kg-bw/day; dermal 28-day-NOAEL >600 mg/kg-bw/day). The substance is expected to have low reproductive/developmental toxicity by the oral route of exposure (NOAEL >250 mg/kg-bw/day with no toxicologically meaningful results). It is expected to be of low concern for human skin sensitization (>10% estimated concentration to induce a stimulation index of 3 (local lymph node assay) and no evidence of sensitivity in human repeated insult path test). It is not expected to be mutagenic *in vitro* or clastogenic *in vitro* or *in vivo*. Therefore, the substance is unlikely to cause genetic damage.

When the notified substance is used as an oil additive industrially or commercially, direct exposure of the general population is not expected due to the industrial/commercial nature of the use. When the notified substance is used as an oil additive for consumer use, direct exposure of the general population is expected to be mainly by contact with the skin at low levels given the infrequent use of products containing the substance, and exposure will be limited by the high molecular weight, high octanol-water partition coefficient (log K_{ow} >8) and low concentration in end-use products (≤1%). 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. If the substance is used in the industrial, commercial or consumer sectors in oil recovery, polymerization, anti-foulants, greases, metal-working, detergents, oils and hydraulic fluids, direct and indirect exposure of the general population is expected to be similar to that of the notified use.

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.

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 *Hazardous Products Regulations* for products intended for the workplace.