

Screening Assessment for the Challenge

Bismuthine, triphenyl-

Cyclotetrasiloxane, heptamethylphenyl-

Benzene, 1,1'-(chlorophenylmethylene)bis[4-methoxy-

Phenol, 2-phenoxy-, trichloro deriv.

**Siloxanes and Silicones, di-Me, reaction products with Me hydrogen siloxanes and
1,1,3,3-tetramethyldisiloxane**

**Phenol, 4,4 -(1-methylethylidene)bis-, reaction products with
hexakis(methoxymethyl)melamine**

Chemical Abstracts Service Registry Number

603-33-8

10448-09-6

40615-36-9

64111-81-5

69430-47-3

125328-28-1

Environment Canada

Health Canada

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Introduction

The *Canadian Environmental Protection Act, 1999* (CEPA 1999) (Canada 1999) requires the Minister of the Environment and the Minister of Health to conduct screening assessments of substances that have met the categorization criteria set out in the Act to determine whether these substances present or may present a risk to the environment or human health.

Based on the information obtained through the categorization process, the Ministers identified a number of substances as high priorities for action. These include substances that

- met all of the ecological categorization criteria, including persistence (P), bioaccumulation potential (B) and inherent toxicity to aquatic organisms (iT), and were believed to be in commerce in Canada; and/or
- met the categorization criteria for greatest potential for exposure (GPE) or presented an intermediate potential for exposure (IPE), and had been identified as posing a high hazard to human health based on classifications by other national or international agencies for carcinogenicity, genotoxicity, developmental toxicity or reproductive toxicity.

The Ministers therefore published a notice of intent in the *Canada Gazette*, Part I, on December 9, 2006 (Canada 2006), that challenged industry and other interested stakeholders to submit, within specified timelines, specific information that may be used to inform risk assessment, and to develop and benchmark best practices for the risk management and product stewardship of these substances identified as high priorities.

The substances listed below were identified as high priority for screening assessment and were included in the Challenge initiative under the Chemicals Management Plan because they were found to meet the ecological categorization criteria for persistence, bioaccumulation potential and inherent toxicity to non-human organisms and were believed to be in commerce in Canada. These substances were not considered to be a high priority for assessment of potential risks to human health, based upon application of the simple exposure and hazard tools developed for categorization of substances on the Domestic Substances List (DSL).

| CAS RN* | DSL Name |
|------------|---|
| 603-33-8 | Bismuthine, triphenyl- |
| 10448-09-6 | Cyclotetrasiloxane, heptamethylphenyl- |
| 40615-36-9 | Benzene, 1,1'-(chlorophenylmethylene)bis[4-methoxy- |
| 64111-81-5 | Phenol, 2-phenoxy-, trichloro derivatives |

| | |
|-------------|--|
| 69430-47-3 | Siloxanes and Silicones, di-Me, reaction products with Me hydrogen siloxanes and 1,1,3,3-tetramethyldisiloxane |
| 125328-28-1 | Phenol, 4,4 -(1-methylethylidene)bis-, reaction products with hexakis(methoxymethyl)melamine |

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Screening assessments focus on information critical to determining whether a substance meets the criteria as set out in section 64 of CEPA 1999. Screening assessments examine scientific information and develop conclusions by incorporating a weight-of-evidence approach and precaution.

The Challenge for the above substances was published in the *Canada Gazette* on September 26, 2009 (Canada 2009). The Substance Profiles were released at the same time. The Substance Profiles presented the technical information available prior to December 2005 that formed the basis for categorization of these substances. Based on the outcome of the Challenge, the Ministers of the Environment and of Health have conducted a screening assessment for these substances. The critical information and considerations upon which the assessment is based are summarized below.

Summary of Information Used as Basis for this Screening Assessment

Based on categorization results, the substances listed in this report have been found to meet the ecological criteria for persistence, bioaccumulation and inherent toxicity to non-human organisms (PBiT). These substances were not found to meet the human health categorization criteria (Environment Canada, 2006).

To establish whether certain high priority substances, including PBiT substances, were currently being manufactured in or imported into Canada, a survey was conducted by issuing a *Notice with Respect to Selected Substances Identified as Priority for Action* pursuant to paragraphs 71(1)(a) and (b) of CEPA 1999. The Notice was published in Part I of the *Canada Gazette* on March 4, 2006 (Canada, 2006a).

In response to this notice, there were no reports of industrial activity (import or manufacture) with respect to CAS RN 603-33-8, CAS RN 10448-09-6, CAS RN 40615-36-9, CAS RN 64111-81-5, CAS RN, and CAS RN 125328-28-1, in Canada, above the reporting threshold of 100 kg, for the specified reporting year of 2005. However, some companies did identify themselves as having a stakeholder interest in these substances. CAS RN 69430-47-3 was reported to be imported above the threshold of 100 kg, for the specified reporting year of 2005 in Canada. Therefore, these substances were believed to be potentially in commerce in Canada and were included in the Challenge.

Results from a similar notice issued under paragraph 71(1)(b) of CEPA 1999 on September 26, 2009, as part of the Challenge (Canada 2009) revealed no reports of industrial activity (import or manufacture) with respect to these substances in Canada, above the reporting threshold of 100 kg, for the specified reporting year of 2006. These results indicate that currently these substances are not in use above the specified reporting threshold, and therefore the likelihood of exposure to these substances in Canada resulting from commercial activity is low. Other sources of entry into the environment have not been identified at this time.

Responses to the above notices and the accompanying questionnaire of September 26, 2009 (Canada, 2006a; Canada 2009) also revealed no new information relevant to the PBiT properties of these substances. Given the lack of any significant commercial activity for these substances, no further collection or analysis relevant to the persistence, bioaccumulation and ecological effects of this substance, beyond what was done for categorization, has been completed. Therefore, the decisions on PBiT properties made during categorization remain unchanged and accordingly these substances are considered to be inherently toxic to non-human organisms. They are also considered to meet the criteria for both persistence and bioaccumulation as set out in the *Persistence and Bioaccumulation Regulations* (Canada, 2000).

As mentioned above, since the results from notices issued under paragraph 71(1)(b) of CEPA 1999 in September 26, 2009 indicate that these substances are not currently in use above the specified reporting threshold, the likelihood of exposure to the general population in Canada is considered to be low; hence the potential risk to human health is considered to be low. Furthermore, these substances were not identified as posing a high hazard to human health based on classifications by other national or international agencies for carcinogenicity, genotoxicity, developmental toxicity or reproductive toxicity. Also, they are not on the European Union's Candidate List of Substances of Very High Concern for Authorisation (EU 2009).

Final Conclusion

Based on available information, and until new information is received indicating that these substances are entering, or may enter the environment, from commercial activity or from other sources, it is concluded that the above substances are currently not entering or likely 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 or that constitute a danger to the environment on which life depends or that constitute a danger in Canada to human life or health. Therefore, it is concluded that they do not meet the any of the criteria as set out in section 64 of CEPA 1999.

As substances listed on the DSL, import and manufacture of these substances in Canada are not currently subject to notification under subsection 81(1). Given their hazardous PBiT properties, there is

concern that new activities for the above substances which have not been identified or assessed under CEPA 1999 could lead to the substances meeting the criteria as set out in section 64 of the Act. Therefore, it is recommended to amend the Domestic Substances List, under subsection 87(3) of the Act, to indicate that the above substances be subject to the Significant New Activity provisions specified under subsection 81(3) of the Act, to ensure that any new manufacture, import or use of this substance in quantities greater than 100 kg/year is notified and will undergo ecological and human health risk assessments as specified in section 83 of the Act, prior to the substance being considered for introduction into Canada.

References

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