

CODE OF PRACTICE FOR MANAGEMENT OF TETRABUTYLtin

fourth progress report



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

Canada 

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INTRODUCTION

Organotin substances are tin compounds having 1, 2, 3 or 4 organic groups attached and are designated as mono-, di-, tri- or tetraorganotin, depending on the number of tin-carbon bonds in the molecule. Tetrabutyltin is part of the organotins family and can breakdown into tributyltins by dealkylation. Organotins are mainly used in the vinyl processing industry and as pesticides. Tetrabutyltin, the substance that is the subject of this report, has the chemical formula $(C_4H_9)_4Sn$ and is used in Canada as a starting material for the synthesis of mono- and dibutyltin compounds for use in polyvinyl chloride (PVC) processing.

Pursuant to section 68 of the *Canadian Environmental Protection Act, 1999* (CEPA), a [Follow-up to the 1993 ecological assessment of organotin substances on Canada's Domestic Substances List](#) was published by Environment and Climate Change Canada in the *Canada Gazette*, Part I, on August 8, 2009. The assessment report concluded that tetrabutyltin meets the criterion set out in paragraph 64(a) of CEPA and that it can be harmful to sensitive aquatic organisms at low concentrations. There is further concern with tetrabutyltin because commercial formulations of tetrabutyltin may contain up to 30% of tributyltins. Tributyltins were found, in 2009, to meet the criterion set out in paragraph 64(a) and the criteria for persistence and bioaccumulation as defined by the *Persistence and Bioaccumulation Regulations*.

To meet the risk management objective of achieving the lowest level of releases that are technically and economically feasible, as identified in the [Risk management approach for non-pesticidal organotin compounds](#) dated August 2009, Environment and Climate Change Canada published in November 2011 a [Code of practice for the management of tetrabutyltin in Canada](#) (herein referred to as the “code of practice”).

Following the publication of the code of practice, Environment and Climate Change Canada conducted a site visit on March 20, 2013 to the only facility to which the code of practice applies. The purpose of this visit was to determine to what degree the code of practice was implemented at this facility. Based on this site visit, it was concluded in October 2013 that the facility can be considered as having fully implemented all of the procedures and practices in the code of practice.

In June 2014, representatives of Environment and Climate Change Canada and the facility discussed a path forward to ensure continued application of the code of practice. It was agreed that the facility would provide a voluntary annual report on continuous implementation of the code of practice. It was also agreed that a site visit to re-verify compliance with the code of practice would be held before 2020.

The facility continued to provide annual reports between 2014 and 2021. On October 23, 2018, Environment and Climate Change Canada conducted a site visit re-verification of the facility.

This fourth progress report presents the results of the implementation of the code of practice to the only facility to which the code of practice applies.

The first, second and third progress reports can be consulted in the following links:

- [First progress report](#)
- [Second progress report](#)
- [Third progress report](#)

PURPOSE OF THE CODE OF PRACTICE

The purpose of the code of practice is to minimize releases of tetrabutyltin to the aquatic environment by identifying best management procedures and practices for activities involving the import, distribution, manufacture and use of tetrabutyltin. The code of practice does not apply to importers of the substance as a component of dry blended vinyl compounds, or to the transportation of tetrabutyltin, which is addressed by the [Transportation of Dangerous Goods Regulations](#).

The code of practice provides best management practices for the following activities: packaging, storage and secondary containment; handling and dispensing; uncontrolled, unplanned or accidental releases. It also details best management practices concerning empty packaging, waste disposal, record keeping, reporting, training and management systems.

TARGETS

To ensure the continuous implementation of the code of practice, the facility to which the code of practice applies will provide a voluntary annual report on continuous implementation of the code of practice for the management of tetrabutyltin in Canada and a site visit to re-verify compliance will be held as needed.

RESULTS

Based on the annual reports covering the period from October 1, 2018 to September 30, 2021, as well as the October 2018 site visit re-verification, Environment and Climate Change Canada concluded that the facility continues to implement the code of practice.

CONCLUSION

By continuing to implement the code of practice, the facility contributed to the realization of Environment and Climate Change Canada's objective to achieve the lowest level of releases technically and economically feasible.

NEXT STEPS

To ensure the continued implementation of the code of practice, the facility covered by the code of practice will continue to provide annual reports on continuous implementation of the code of practice for the management of tetrabutyltin in Canada to Environment and Climate Change Canada.

If there is a significant change regarding the process or use of tetrabutyltin at the facility, the need for another site visit re-verification will be determined.

Environment and Climate Change Canada may request additional supporting documentation in the future from the facility.

If any new activities cause additional facilities to be subject to the code of practice, these facilities will be requested to submit documentation on how they are implementing the code of practice.

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BACKGROUND

Between August 1994 and March 2000, the Minister of the Environment received notifications for nine organotin substances as “new” and/or “transitional” substances pursuant to subsection 26(2) of the 1988 *Canadian Environmental Protection Act* (CEPA 1988), now subsection 81(1) of CEPA 1999. These substances were proposed for importation or manufacture in Canada for the following uses: as stabilizers for PVC products; as intermediates used in the manufacture of organotin stabilizers (which was the case of tetrabutyltin) and as material preservatives for building material formulations.

These substances were assessed, and it was concluded that all nine substances, including tetrabutyltin, are entering or may 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. Therefore, these substances met the criterion set out in paragraph 64(a) of CEPA.

On March 23, 2005, a Notice under subsection 84(5) of CEPA was published in the *Canada Gazette*, Part I. The Notice specifies the conditions under Ministerial Condition No. 13618 pertaining to the use, release and disposal of tetrabutyltin in Canada.

The ministerial condition for tetrabutyltin was rescinded on December 15, 2012, following the publication of the code of practice, which incorporated most of the requirements of the ministerial condition and it applied to all importers, distributors, manufacturers and users of tetrabutyltin in Canada. Tetrabutyltin was subsequently listed on the [Domestic Substances List](#) on February 26, 2014.