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Siemens Canada Limited
Siemens Milltronics Process Instruments

Toxic Substance Reduction Plan Summary

(Reporting Year 2019)

Prepared by:

Elyse Sawdon
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Siemens Canada Limited
Siemens Milltronics Process Instruments

1954 Technology Drive, P.O. Box 4225
Peterborough, Ontario
K9J 7B1 / Canada

Tel.: (705) 745-2431
Fax: (705) 741-0466
www.siemens.com/sensorsystems

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Introduction

Siemens Canada Limited, Siemens Milltronics Process Instruments (Siemens) – located in Peterborough, Ontario – is committed to sustainability and responsible environmental practices as we design, build, sell, distribute and service level measurement products, dry solids flow measurement products, process protection products and printed circuit board assemblies.

Siemens prepared this Toxic Substance Accounting report to comply with the requirements of Ontario Regulation 455/09 made under the Toxics Reduction Act of 2009. This is the Ontario government's commitment to reduce toxic substances in air, land, water and consumer products while promoting the green economy. This report summarizes the findings of Siemens toxic substance accounting for the year 2019 and is also an update to the Toxic Substance Reduction Plan prepared and issued in December 2012.

Basic Facility Information

Substance name & CAS Registry number	Lead and its compounds (except tetraethyl lead). CAS # NA-08
Facility Name	Siemens Canada Limited, Siemens Milltronics Process Instruments
Facility Address	1954 Technology Drive, Peterborough, ON K9J 7B1
Parent Company	Siemens Canada Limited
Parent Company Address	1577 North Service Rd East, Oakville, ON L6H 0H6
Percentage of Ownership	100%
Universal Transverse Mercator (UTM) coordinates in NAD83	Latitude: 44.28960 Longitude: -78.28280
National Pollutant Release Inventory (NPRI) ID number	0000010498
Number of full-time employee equivalents	288
Public Contact	Laura Heidbuechel Siemens Canada, Corporate Communications Laura.heidbuechel@siemens.com
North American Industry Classification System (NAICS) 2-digit code	33 – Manufacturing
North American Industry Classification System (NAICS) 4-digit code	3345 – Navigational, Measuring, Medical and Control Instruments Manufacturing
North American Industry Classification System (NAICS) 6-digit code	334512 – Measuring, Medical and Controlling Devices Manufacturing

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Toxic Substances for Which Plans Have Been Prepared

Inherent to the designs of Siemens wide selection of process measuring instruments is the use of various substances in the manufacturing and assembly process. A number of these substances are included in the National Pollutant Release Inventory (NPRI) list of reportable substances although all, except for lead and its compounds (except tetraethyl lead) (hereon referred to as “lead”), are non-reportable since consumption and use of these substances are below the quantity threshold reporting limits.

Statement of Intent

Siemens is committed to being an industry leader in the fields of environmental protection and innovation. It is the intent of Siemens to reduce the use of lead in our facility through ongoing efforts, working towards lead-free assembly and production.

Objectives and Targets

Siemens is currently taking actions towards eliminating the use of lead in the production process, and ensuring the release of lead-free products now and into the future. Over the previous year our project team has accomplished to convert our printed circuit board assembly (PCBAs) prototypes to lead free and test for product quality, before releasing to production. Siemens is on track for our scheduled completion date, after which all PCBAs and products will be produced lead-free.

Description of Substance Used in the Facility

Lead and its compounds enter the facility through the use of raw materials containing the substance. These raw materials are utilized in various assembly processes resulting in the manufacture of finished products. There are no physical or chemical transformations or processing involved at the Inventory and Shipping Stages for lead-containing materials. All processing steps which have to do with the substance occur at the Assembly Stage. Additionally, lead and its compounds are neither created nor destroyed in any of the manufacturing steps.

The Accounting Process

The boundary of a toxics substance accounting sets the scope of facilities and operations for which accounting will be prepared, and the types of processes that will be assessed. In setting the boundary for accounting, Siemens included all processes and operations in their Peterborough manufacturing facility that used or created substances meeting the reporting requirements of the Ontario Regulation 455/09 in 2019.

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Best available methods for quantification were used to determine the quantities of toxic substances present in Siemens manufacturing process flows that meet the reporting requirements of the Regulation.

Results of Accounting

In 2019, only one substance met the reporting requirements of Ontario Regulation 455/09 which was lead (Pb) and its compounds (except tetraethyl lead), CAS number NA-08. Total quantities of lead and its compounds in different streams of Siemens manufacturing processes have been calculated. The following table summarizes these quantities:

Summary of Toxic Substance Accounting Results

Substance	2017 Accounting for Lead (and its compounds)	2018 Accounting for Lead (and its compounds)	2019 Accounting for Lead (and its compounds)
Total Used (kg)	239.05	0.0	0.0
Total Transferred Off-site for Recycling (kg)	179.82	170	90
Total Released to Air (kg)	0.66	0.0	0.0
Total Contained in Product (kg)	58.57	0.0	0.0
Difference in Total Used (kg) from previous year	332.45	332.45	0.0

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Toxic Substance Reduction Options Utilized in 2019

To reduce the use of lead at our location, Siemens has found it both technically and economically feasible through the Toxic Substance Reduction Plan process in 2019 to implement the following:

- Option1: *Substitute tin-based solder paste in place of lead-based solder paste*, and

The actions taken to date towards achieving this option have proven successful, as evidenced by the drop in Total Lead Used (0.0 kg) and Total Lead Transferred Off-site for Recycling (90 kg) from the previous two years' totals. The volume transferred off-site for recycling represents leaded solder that was purged from equipment that has now been transitioned to lead-free production.

Furthermore, Option 2: *Design and produce new lead free products* will evermore continue to be carried out each time new products are designed and launched by Siemens. Option 3: *Use chemical dross eliminator in wave solder and drag solder process* was investigated in 2013 but the health risks to employees from the dross eliminator outweighed any reduction benefits. Until a safer dross eliminator is found, this option will not be carried out. Option 5: *Reduce over-purchasing of leaded solder* has been implemented and leaded products are purchased on an as needed basis only.

Conclusion

The Toxics Substance Reduction Planning and Accounting process for Siemens Peterborough manufacturing facility provided a comprehensive picture of how the toxic substance lead and its compounds (except tetraethyl lead) enters and leaves the various manufacturing processes in Siemens. Lead is present in various forms and in various stages of Siemens manufacturing processes. A significant amount of lead used is transferred off-site for recycling or treatment, and a relatively small amount is emitted to air.

The accounting process has also allowed Siemens to track our progress towards the reduction of lead through options identified in the Toxic Substance Reduction Plan program. In the year 2019 the usage of lead and its compounds (except tetraethyl lead) decreased by approximately 332.45 kg in the manufacturing process at Siemens, from 2017 which was the last year that lead was used in the production process. Siemens will continue the manufacture of lead-free products going forward.

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Closing

I, Ian Almond, certify that I have read this Toxic Substance Account report prepared to meet the requirements of Ontario Regulation 455/09, made under the Toxics Reduction Act of 2009. To the best of my knowledge the above figures present an accurate measurement of toxic substances, specifically lead and its compounds, used at Siemens during the manufacturing process.

Digitally signed by
ALMOND IAN
Date: 2020.07.24
11:41:44 -04'00'

Ian Almond
General Manager
Siemens Canada Limited
Siemens Milltronics Process Instruments