



2016 TOXICS SUBSTANCE REPORT

CRH Canada Group Inc. – Mississauga Cement Plant

**2391 Lakeshore Road West
Mississauga, ON
L5J 1K1**

crhcanada.com

Table of Contents

1.	INTRODUCTION	3
2.	REPORTING CRITERIA	4
3.	COMPANY INFORMATION	5
4.	SUBSTANCE REPORTING	6

1. Introduction

Commissioned in 1956, the CRH Canada Mississauga Plant is one of the largest and most environmentally responsible suppliers of cement in Canada. The Plant employs approximately 185 people and has an annual capacity of 1.5 million tonnes of cement, plus 0.5 million tonnes of CRH Slag Cement. Since 1956, the Mississauga Plant has witnessed ongoing technological advancements designed to meet the increasing needs of the marketplace, improve environmental performance, enhance employee safety and mitigate impacts on the local community.

CRH Canada Group Inc. is one of the country's largest vertically integrated building materials and construction companies. With 3,000 employees, CRH Canada manufactures cement, aggregates and ready-mix concrete and provides construction services to many of Canada's largest infrastructure projects.

CRH Canada Group Inc. is a member of the CRH Group of companies, a leading diversified international building materials group, employing 91,000 people at 4,000 operating locations in 37 countries worldwide. CRH is the largest building materials company in North America and the third largest worldwide and is committed to improving the built environment through the delivery of superior materials and products for the construction and maintenance of infrastructure, housing and commercial projects. A Fortune 500 company, CRH is a constituent member of the FTSE 100 index and the ISEQ 20 with American Depositary Shares listed on the NYSE.

2. Reporting Criteria

Section 3(1) of the Toxics Reduction Act (TRA) specifies the criteria requiring the preparation of a toxic substance plan.

These criteria are as follows:

3. (1) The owner and the operator of a facility shall ensure that a toxic substance reduction plan is prepared for a toxic substance in accordance with this Act and the regulations if all of the following criteria are met:

1. The facility belongs to a class of facilities prescribed by the regulations.

2. The number of persons employed at the facility exceeds the number of persons prescribed by the regulations.

3. The toxic substance is used or created at the facility and the amounts of the substance that are used or created meet the criteria prescribed by the regulations.

4. Such other criteria as are prescribed by the regulations. 2009, c. 19, s. 3 (1).

Section 4(1) of O. Reg. 455/09 specifies the types of facilities subject to toxic substance reduction planning and includes facilities that begin in North American Industry Classification System (NAICS) code “31”, “32” or “33” and “212”. The CRH Canada Mississauga plant operates under the category of “cement manufacturing”, and therefore has a NAICS code beginning with “32”.

In addition to the plan, toxics substance reporting must be conducted annually and a summary of this report must be made available for public viewing. This document summarizes the toxic substances reported as part of the TRA for the year ending 2016 by the CRH Canada Mississauga Cement Plant.

- Acenaphthylene
- Acetone
- Ammonia
- Benzene
- Carbon Monoxide
- Dioxins and Furans
- Fluorene
- Hexachlorobenzine
- Hydrochloric Acid
- Mercury
- Methyl Ethyl Ketone
- Nitrogen Oxides (expressed as NO₂)
- Particulate Matter
- Particulate Matter ≤ 10 microns
- Particulate Matter ≤ 2.5 microns
- Phenanthrene
- Sulphur Dioxide
- Toluene
- Total Volatile Organic Compounds (VOCs)
- Xylene

3. Company Information

Parent Company Name	CRH Canada Group Inc.
Parent Company Address	2300 Steeles Ave. West, 4 th Floor Concord, Ontario L4K 5X6
Facility Name	CRH Canada Mississauga Plant
Facility Address	2391 Lakeshore Road West Mississauga, Ontario L5J 1K1
Geographic Coordinates of Facility	43.49720N, -79.62770W
National Pollutant Release Inventory Identification Number	2182
Ontario Regulation 127/01 Identification Number	5112
Two Digit North American Industry Classification System (NAICS) Code	32 – Manufacturing
Four Digit North American Industry Classification System (NAICS) Code	3273 - Cement and Concrete Product Manufacturing
Six Digit North American Industry Classification System (NAICS) Code	327310 - Cement Manufacturing
Number of Full-time Employee Equivalents at the Facility	185
Facility Public Contact	Richard Lalonde Environment Manager 2391 Lakeshore Road West Mississauga, ON L5J 1K1 905 822-1653 ext. 44371 richard.lalonde@ca.crh.com

4. Substance Reporting

Acenaphthylene, CAS # 208-96-8				
	2016	2015	Diff (kg)	Diff %
Used	37364 kilograms	3166 kilograms	34198 kilograms	1080 %
Created	8.2 kilograms	8.0 kilograms	0.2 kilograms	2.5 %
Contained in Product	0.0 kilograms	0.0 kilograms	0.0 kilograms	0 %
Released	8.2 kilograms	8.0 kilograms	0.2 kilograms	2.5 %
Destroyed	37364 kilograms	3166 kilograms	34198 kilograms	1080 %
The changes in the quantities of substance used and released are due to: Used: Fluctuations in materials chemistry. Released: No reasons - quantities approximately the same.				

Acetone, CAS # 67-64-1				
	2016	2015	Diff (tonnes)	Diff %
Used	1986 tonnes	950 tonnes	1036 tonnes	109 %
Created	13.7 tonnes	13.4 tonnes	0.3 tonnes	2.2 %
Contained in Product	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Released	13.7 tonnes	13.4 tonnes	0.3 tonnes	2.2 %
Destroyed	1986 tonnes	950 tonnes	1036 tonnes	109 %
The changes in the quantities of substance used and released are due to: Used: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years). Released: No reasons - quantities approximately the same.				

Ammonia, CAS # 16				
	2016	2015	Diff (tonnes)	Diff %
Used	194 tonnes	232 tonnes	-38 tonnes	-16.4 %
Created	81 tonnes	144 tonnes	-63 tonnes	-43.8 %
Contained in Product	0 tonnes	0 tonnes	0 tonnes	0 %
Released	81 tonnes	144 tonnes	-63 tonnes	-43.8 %
Destroyed	194 tonnes	232 tonnes	-38 tonnes	-16.4 %
<p>The changes in the quantities of substance used and released are due to: Used: Fluctuations in process resulting in change to ammonia creation. Released: Efficiency measures implemented in process resulting in a reduction of ammonia usage and emissions.</p>				

Benzene, CAS # 71-43-2				
	2016	2015	Diff (tonnes)	Diff %
Used	18 tonnes	33 tonnes	-15 tonnes	-45.5 %
Created	5 tonnes	4.7 tonnes	0.3 tonnes	6.4 %
Contained in Product	0.0 tonnes	0.0 tonnes	0 tonnes	0 %
Released	5 tonnes	4.7 tonnes	0.3 tonnes	6.4 %
Destroyed	18 tonnes	33 tonnes	-15 tonnes	-45.5 %
<p>The changes in the quantities of substance used and released are due to: Used: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years). Released: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years).</p>				

Carbon Monoxide, CAS # 630-08-0				
	2016	2015	Diff (tonnes)	Diff %
Used	0 tonnes	0 tonnes	0 tonnes	0 %
Created	1432 tonnes	1183 tonnes	tonnes	21.0 %
Contained in Product	0 tonnes	0 tonnes	0 tonnes	0 %
Released	1432 tonnes	1183 tonnes	tonnes	21.0 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %
<p>The changes in the quantities of substance used and released are due to: Used: No reasons – quantities are the same. Released: Fluctuations in process conditions.</p>				

Dioxins and Furans				
	2016	2015	Diff	Diff %
Used	Below level of quantification	Below level of quantification	-	-
Created	Below level of quantification	Below level of quantification	-	-
Contained in Product	Below level of quantification	Below level of quantification	-	-
Released	Below level of quantification	Below level of quantification	-	-
Destroyed	Below level of quantification	Below level of quantification	-	-
The changes in the quantities of substance used and released are due to: Used: No reasons - quantities are the same. Released: No reasons - quantities are the same.				

Fluorene, CAS # 86-73-7				
	2016	2015	Diff (kg)	Diff %
Used	19479 kilograms	1437 kilograms	18042 kilograms	1256 %
Created	13.9 kilograms	13.6 kilograms	0.3 kilograms	2.2 %
Contained in Product	0.0 kilograms	0.0 kilograms	0 kilograms	0 %
Released	13.9 kilograms	13.6 kilograms	0.3 kilograms	2.2 %
Destroyed	19479 kilograms	1437 kilograms	18042 kilograms	1256 %
The changes in the quantities of substance used and released are due to: Used: Fluctuations in material chemistry. Released: No reasons – quantities approximately the same.				

Hexachlorobenzene, CAS # 118-74-1				
	2016	2015	Diff (g)	Diff %
Used	0.0 grams	0.0 grams	0.0 grams	0 %
Created	31.6 grams	30.4 grams	1.2 grams	3.9 %
Contained in Product	0.0 grams	0.0 grams	0.0 grams	0 %
Released	31.6 grams	30.4 grams	1.2 grams	3.9 %
Destroyed	0.0 grams	0.0 grams	0.0 grams	0 %
The changes in the quantities of substance used and released are due to: Used: No reasons – quantities are the same. Released: No reasons – quantities approximately the same.				

Hydrochloric Acid, CAS # 7647-01-0				
	2016	2015	Diff (tonnes)	Diff %
Used	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Created	32.7 tonnes	27 tonnes	5.7 tonnes	21.1 %
Contained in Product	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Released	32.7 tonnes	27 tonnes	5.7 tonnes	21.1 %
Destroyed	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
The changes in the quantities of substance used and released are due to: Used: No reasons – quantities approximately the same. Released: Fluctuations in process resulting in change to HCl creation.				

Mercury, CAS # 7439-97-6				
	2016	2015	Diff (kg)	Diff %
Used	34.9 kilograms	37 kilograms	-2.1 kilograms	-5.7 %
Created	0.0 kilograms	0.0 kilograms	0.0 kilograms	0 %
Contained in Product	25.7 kilograms	15 kilograms	10.7 kilograms	71.3 %
Released	11.3 kilograms	17.3 kilograms	-6.0 kilograms	-34.7 %
Destroyed	0.0 kilograms	0.0 kilograms	0.0 kilograms	0 %
The changes in the quantities of substance used and released are due to: Used: No reasons - quantities approximately the same. Released: Fluctuation in material chemistry.				

Methyl Ethyl Ketone, CAS # 78-93-3				
	2016	2015	Diff (-)	Diff %
Used	683 tonnes	1005 tonnes	-322 tonnes	-32.0 %
Created	1.4 tonnes	1.3 tonnes	0.1 tonnes	7.7 %
Contained in Product	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Released	1.4 tonnes	1.3 tonnes	0.1 tonnes	7.7 %
Destroyed	683 tonnes	1005 tonnes	-322 tonnes	-32.0 %
The changes in the quantities of substance used and released are due to: Used: Fluctuation in material chemistry. Released: No reasons - quantities approximately the same.				

Nitrogen oxides (expressed as NO₂), CAS # 11104-93-1

	2016	2015	Diff (tonnes)	Diff %
Used	0 tonnes	0 tonnes	0 tonnes	0 %
Created	2096 tonnes	2524 tonnes	-428 tonnes	-17.0 %
Contained in Product	0 tonnes	0 tonnes	0 tonnes	0 %
Released	2096 tonnes	2524 tonnes	-428 tonnes	-17.0 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %

The changes in the quantities of substance used and released are due to:

Used: No reasons - quantities are the same.

Released: Changes in production levels.

Particulate Matter – Total (PM), CAS # M08

	2016	2015	Diff (tonnes)	Diff %
Used	75233 tonnes	94666 tonnes	-19433 tonnes	-20.5 %
Created	0 tonnes	0 tonnes	0 tonnes	0 %
Contained in Product	N/A *	N/A *		
Released	144 tonnes	117 tonnes	27 tonnes	23.1 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %

The changes in the quantities of substance used and released are due to:

Used: Decrease from material input.

Released: Fluctuations in the process and weather conditions resulting in a change in dust creation. Wind speed increase and rain days decreased in 2016.

*Quantification for the amount of the substance that is contained in product is not required for Criteria Air Contaminants (Part 4 of NPRI Schedule 1).

Particulate Matter <= 10 Microns (PM10), CAS # M09

	2016	2015	Diff (tonnes)	Diff %
Used	24304 tonnes	27274 tonnes	-2970 tonnes	-10.9 %
Created	0 tonnes	0 tonnes	0 tonnes	0 %
Contained in Product	N/A *	N/A *		
Released	54 tonnes	39 tonnes	15 tonnes	38.5 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %

The changes in the quantities of substance used and released are due to:

Used: Decrease from material input.

Released: Fluctuations in the process and weather conditions resulting in a change in dust creation. Wind speed increase and rain days decreased in 2016.

*Quantification for the amount of the substance that is contained in product is not required for Criteria Air Contaminants (Part 4 of NPRI Schedule 1).

Particulate Matter <= 2.5 Microns (PM2.5), CAS # M10

	2016	2015	Diff (tonnes)	Diff %
Used	7446 tonnes	8227 tonnes	-781 tonnes	-9.5 %
Created	0 tonnes	0 tonnes	0 tonnes	0 %
Contained in Product	N/A *	N/A *		
Released	24 tonnes	21 tonnes	3 tonnes	14.3 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %

The changes in the quantities of substance used and released are due to:

Used: No reasons - quantities approximately the same.

Released: Fluctuations in the process and weather conditions resulting in a change in dust creation. Wind speed increase and rain days decreased in 2016.

*Quantification for the amount of the substance that is contained in product is not required for Criteria Air Contaminants (Part 4 of NPRI Schedule 1).

Phenanthrene, CAS # 85-01-8

	2016	2015	Diff (kg)	Diff %
Used	33989 kilograms	3780 kilograms	30209 kilograms	799 %
Created	48 kilograms	48 kilograms	0.0 kilograms	0 %
Contained in Product	0.0 kilograms	0.0 kilograms	0.0 kilograms	0 %
Released	48 kilograms	48 kilograms	0.0 kilograms	0 %
Destroyed	33989 kilograms	3780 kilograms	30209 kilograms	799 %

The changes in the quantities of substance used and released are due to:

Used: Fluctuation in materials chemistry.

Released: No reasons – quantities approximately the same.

Sulphur dioxide, CAS # 7446-09-5

	2016	2015	Diff (tonnes)	Diff %
Used	0 tonnes	0 tonnes	0 tonnes	0 %
Created	1531 tonnes	1403 tonnes	128 tonnes	9.1 %
Contained in Product	0 tonnes	0 tonnes	0 tonnes	0 %
Released	1531 tonnes	1403 tonnes	128 tonnes	9.1 %
Destroyed	0 tonnes	0 tonnes	0 tonnes	0 %

The changes in the quantities of substance used and released are due to:

Used: No reasons – quantities are the same.

Released: No reasons – quantities approximately the same.

Toluene, CAS # 108-88-3

	2016	2015	Diff (tonnes)	Diff %
Used	2939 tonnes	2758 tonnes	181 tonnes	6.6 %
Created	2.4 tonnes	2.0 tonnes	0.4 tonnes	20.0 %
Contained in Product	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Released	2.4 tonnes	2.0 tonnes	0.4 tonnes	20.0 %
Destroyed	2939 tonnes	2758 tonnes	181 tonnes	6.6 %

The changes in the quantities of substance used and released are due to:

Used: No reasons – quantities approximately the same.

Released: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years).

Total VOCs (Volatile Organic Compounds)				
	2016	2015	Diff (tonnes)	Diff %
Used	7554 tonnes	7585 tonnes	-31 tonnes	-0.4 %
Created	31.1 tonnes	17.1 tonnes	14 tonnes	81.9 %
Contained in Product	0 tonnes	0 tonnes	0 tonnes	0 %
Released	31.1 tonnes	17.1 tonnes	14 tonnes	81.9 %
Destroyed	7554 tonnes	7585 tonnes	-31 tonnes	-0.4 %
<p>The changes in the quantities of substance used and released are due to: Used: No reasons – quantities approximately the same. Released: Fluctuation in process resulting in change to specific VOC creation.</p>				

Xylene, CAS # 1330-20-7				
	2016	2015	Diff (tonnes)	Diff %
Used	1460 tonnes	1729 tonnes	-269 tonnes	-15.6 %
Created	2.7 tonnes	3.5 tonnes	-0.8 tonnes	-22.9 %
Contained in Product	0.0 tonnes	0.0 tonnes	0.0 tonnes	0 %
Released	2.7 tonnes	3.5 tonnes	-0.8 tonnes	-22.9 %
Destroyed	1460 tonnes	1729 tonnes	-269 tonnes	-15.6 %
<p>The changes in the quantities of substance used and released are due to: Used: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years). Released: Fluctuation in process resulting in change to specific VOC creation (total VOCs in line with previous years).</p>				

As of May 31, 2017, I, Kevin Hughes, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

- Acenaphthylene
- Acetone
- Ammonia
- Benzene
- Carbon Monoxide
- Dioxins and Furans
- Fluorene
- Hexachlorobenzene
- Hydrochloric Acid
- Mercury
- Methyl Ethyl Ketone
- Nitrogen Oxides (expressed as NO₂)
- Particulate Matter
- Particulate Matter ≤ 10 microns
- Particulate Matter ≤ 2.5 microns
- Phenanthrene
- Sulphur Dioxide
- Toluene
- Total Volatile Organic Compounds (VOCs)
- Xylene



Kevin Hughes,
Plant Manager, CRH Mississauga Cement Plant