

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Chromium and CAS # NA-04
Substances for which other plans have been prepared	Formaldehyde, Manganese and Selenium
Beneficial Uses at Facility	Used in refractory significantly extends furnace life and prevents leaks of molten glass. Used in raw materials moderates furnace temps/reduces refractory wear; allows facility to turn a potential waste stream (purchased cullet) into a viable product.
Reasons for Use	As a formulation component
Reasons for use - summary statement (mandatory)	The substance contained in refractory significantly extends furnace life and prevents leaks of molten glass. The substance contained in raw materials moderates furnace temperatures thus reducing refractory wear while additionally providing the facility with an opportunity to turn a potential waste stream (purchased cullet) into a viable product.
Reasons for Creation	This substance is not created at the facility
Reasons for creation - summary statement (mandatory)	N/A

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	140
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%

Facility Contact

Public Contact	Edward Chang-Yen
Position	Environmental Leader
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Edward.Chang-Yen@owenscorning.com
Phone	416-412-8362
Fax	416-412-6729

Date of Plan: **December 19, 2012**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. Whenever feasible, we will eliminate, or reduce the use and discharge of chromium in full compliance with all Federal and Provincial Regulations.

Plan Objectives

Our goal is to reduce chromium used at our facility and to further minimize the potential for losses through continuous improvements and our commitment to best management practices.

Description of Substance

Chromium is used as a formulation component in the manufacture of fibreglass insulation products.

Description of Previously Implemented Reduction Opportunities:

- installation of pack edge rollers to reduce fuzzies escaping, and retain edging that was otherwise lost
- constant preventative maintenance on pneumatic piping ie: cameras; routine visual inspections
- pneumatic piping improved to minimize wear and prevent leaks ie: ceramic lining; elbows with material collection box (so wear occurs on material that is collected in elbow instead of pipe itself); replacement with large radius elbows; improved piping alignment; chrome-weld piping; conveying system boosters; plexi-glass enclosures around high-wear piping on roof
- Reuse or recycle of uncontaminated material vacuumed from plant floor or from dust collectors
- established the minimum required process levels from historic data to optimize usage
- maintaining silo inventory above minimum levels to prevent segregation and handling issues from low silos

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for chromium, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2012.

Date of Plan: **December 19, 2012**

Toxic Substance Reduction Option(s) to be Implemented

The following options have been identified for implementation to reduce the use, creation, or releases of chromium:

		Used	Created	Contained in Product	On-Site Releases to Air	On-Site Releases to Water	On-Site Releases to Land	Disposal On-Site	Disposal Off-Site	Transfer Off-Site for Recycling
Option Description:	Commission the early detection system re: crust temperature which triggers operator investigation, and real-time MnO2 dosing - could eliminate use of excess MnO2 (contains trace amounts of chromium).									
Estimated Reductions due to Option Implementation	Tonnes	0.0004	N/A	0.0004	0.0000	N/A	N/A	N/A	0.0000	N/A
	%	0.001%	N/A	0.001%	0.001%	N/A	N/A	N/A	0.001%	N/A
Timeline for Reductions	Years	1	N/A							

Date of Plan: **December 19, 2012**

Certification By Highest Ranking Employee

As of December 19, 2012, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Chromium**



Wesley Co

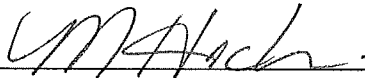
Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2012, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the *Toxics Reduction Act, 2009* that are set out in the plan dated December 19, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Chromium**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Formaldehyde and CAS # 50-00-0
Substances for which other plans have been prepared	Chromium, Manganese and Selenium
Beneficial Uses at Facility	None
Reasons for Use	This substance is not used at the facility
Reasons for use - summary statement (mandatory)	N/A
Reasons for Creation	As a by-product
Reasons for creation - summary statement (mandatory)	A small amount of formaldehyde is created from the degradation of non-formaldehyde containing materials used in the process. These degradation products are emitted as air emissions from the process.

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	140
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%

Facility Contact

Public Contact	Edward Chang-Yen
Position	Environmental Leader
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Edward.Chang-Yen@owenscorning.com
Phone	416-412-8362
Fax	416-412-6729

Date of Plan: **December 19, 2012**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of formaldehyde in its operations because it is a by-product of key reactions within the current manufacturing process at the site. In addition, the facility has eliminated the use of this substance within its operations over the past several years. Whenever feasible, we will eliminate, or reduce the discharge of formaldehyde in full compliance with all Federal and Provincial Regulations.

Plan Objectives

While Owens Corning Insulating Systems Canada LP does not intend to reduce the creation of formaldehyde, the plan was developed with the following objectives:

- we will continue to operate in full compliance with all applicable environmental regulations; and
- we will continue to minimize use of Formaldehyde through current and future pollution prevention and best management practices.

Description of Substance

Formaldehyde is created as a result of chemical reactions within the process as there is no data to suggest this substance exists in process inputs or product streams.

Toxic Substance Reduction Option(s) To Be Implemented

For the purposes of the Toxics Reduction Act, the facility will not be implementing any options to reduce the creation of Formaldehyde in its operations because it is a by-product of key reactions within the current manufacturing process at the site. Over the past several years, the facility has implemented measures that completely eliminated the use of formaldehyde from its operations.

Description of Previously Implemented Reduction Opportunities:

- Full conversion to formaldehyde-free binder was implemented in 2010 completely eliminating the use of Formaldehyde at the site.

Plan Summary Statement

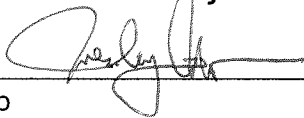
This plan summary accurately reflects the content of the toxic substance reduction plan for formaldehyde, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2012.

Date of Plan: **December 19, 2012**

Certification By Highest Ranking Employee

As of December 19, 2012, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Formaldehyde**



Wesley Co

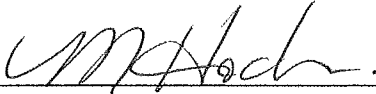
Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2012, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the *Toxics Reduction Act, 2009* that are set out in the plan dated December 19, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Formaldehyde**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Manganese and CAS # NA-09
Substances for which other plans have been prepared	Chromium, Formaldehyde and Selenium
Beneficial Uses at Facility	Excess MnO ₂ prevents loss of control within process due to high LOI of other batch materials; additionally allows the facility to incorporate a potential waste stream (recycled cullet) into a viable product.
Reasons for Use	As a formulation component
Reasons for use - summary statement (mandatory)	The substance provides effective protection against loss of process control and is a key component in the facility's products; it also provides the facility with an opportunity to recycle a potential waste stream (purchased cullet) into a viable product.
Reasons for Creation	This substance is not created at the facility
Reasons for creation - summary statement (mandatory)	N/A

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	140
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%

Facility Contact

Public Contact	Edward Chang-Yen
Position	Environmental Leader
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Edward.Chang-Yen@owenscorning.com
Phone	416-412-8362
Fax	416-412-6729

Date of Plan: **December 19, 2012**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. Whenever feasible, we will eliminate, or reduce the use and discharge of manganese in full compliance with all Federal and Provincial Regulations.

Plan Objectives

Our goal is to reduce manganese used at our facility and to further minimize the potential for losses through continuous improvements and our commitment to best management practices.

Description of Substance

Manganese is used as a formulation component in the manufacture of fibreglass insulation products.

Description of Previously Implemented Reduction Opportunities:

- installation of pack edge rollers to reduce fuzzies escaping, and retain edging that was otherwise lost
- constant preventative maintenance on pneumatic piping ie: cameras; routine visual inspections
- pneumatic piping improved to minimize wear and prevent leaks ie: ceramic lining; elbows with material collection box (so wear occurs on material that is collected in elbow instead of pipe itself); replacement with large radius elbows; improved piping alignment; chrome-weld piping; conveying system boosters; plexi-glass enclosures around high-wear piping on roof
- Reuse or recycle of uncontaminated material vacuumed from plant floor or from dust collectors
- established the minimum required process levels from historic data to optimize usage
- maintaining silo inventory above minimum levels to prevent segregation and handling issues from low silos

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for manganese, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2012.

Date of Plan: **December 19, 2012**

Toxic Substance Reduction Option(s) to be Implemented

The following options have been identified for implementation to reduce the use, creation, or releases of manganese:

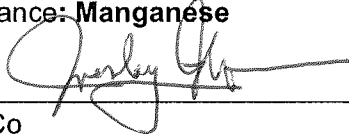
		Used	Created	Contained in Product	On-Site Releases to Air	On-Site Releases to Water	On-Site Releases to Land	Disposal On-Site	Disposal Off-Site	Transfer Off-Site for Recycling
Option Description:	Commission the early detection system re: crust temperature which triggers operator investigation, and real-time MnO ₂ dosing - could eliminate use of excess MnO ₂ .									
Estimated Reductions due to Option Implementation	Tonnes	20.3566	N/A	20.2863	0.0047	N/A	N/A	N/A	0.1079	N/A
	%	3.92%	N/A	3.92%	3.92%	N/A	N/A	N/A	3.92%	N/A
Timeline for Reductions	Years	1	N/A							

Date of Plan: **December 19, 2012**

Certification By Highest Ranking Employee

As of December 19, 2012, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Manganese**



Wesley Co

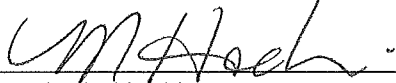
Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2012, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the *Toxics Reduction Act, 2009* that are set out in the plan dated December 19, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Manganese**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited

Toxic Reduction Plan Summary

Substance

Substance Name and CAS #	Selenium and CAS # NA-09
Substances for which other plans have been prepared	Chromium, Manganese and Formaldehyde
Beneficial Uses at Facility	None
Reasons for Use	As a formulation component
Reasons for use - summary statement (mandatory)	The substance is a trace component of the final product leaving the facility, inherent to the use of the naturally occurring raw materials.
Reasons for Creation	This substance is not created at the facility
Reasons for creation - summary statement (mandatory)	N/A

Facility Information

Company Name	Owens Corning Insulating Systems Canada LP
Facility Name	Toronto Facility
Facility Physical Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
Facility Mailing Address	Same as physical address
Spatial Coordinates of Facility	640284Easting; 4853861Northing
Number of Employees	140
NPRI ID	1245
Ontario MOE (R.127)ID Number	if assigned
2 Digit NAICS Code	31-33
4 Digit NAICS Code	3279
6 Digit NAICS Code	327990

Parent Company Information

Parent Company Name	OC Canada Holdings Company
Address	900-1959 Upper West Street, Halifax, Nova Scotia, B3J 3N2
Percent Ownership (if available)	99.99%

Facility Contact

Public Contact	Edward Chang-Yen
Position	Environmental Leader
Address	3450 McNicoll Avenue, Toronto, ON, Canada, M1V 1Z5
email	Edward.Chang-Yen@owenscorning.com
Phone	416-412-8362
Fax	416-412-6729

Date of Plan: **December 19, 2012**

Statement of Intent

Owens Corning Insulating Systems Canada LP - Toronto Facility is committed to playing a leadership role in protecting the environment. Whenever feasible, we will eliminate, or reduce the use and discharge of selenium in full compliance with all Federal and Provincial Regulations.

Plan Objectives

Our goal is to reduce selenium used at our facility and to further minimize the potential for losses through continuous improvements and our commitment to best management practices.

Description of Substance

Selenium is used as a formulation component in the manufacture of fibreglass insulation products.

Description of Previously Implemented Reduction Opportunities:

- installation of pack edge rollers to reduce fuzzies escaping, and retain edging that was otherwise lost
- constant preventative maintenance on pneumatic piping ie: cameras; routine visual inspections
- pneumatic piping improved to minimize wear and prevent leaks ie: ceramic lining; elbows with material collection box (so wear occurs on material that is collected in elbow instead of pipe itself); replacement with large radius elbows; improved piping alignment; chrome-weld piping; conveying system boosters; plexi-glass enclosures around high-wear piping on roof
- Reuse or recycle of uncontaminated material vacuumed from plant floor or from dust collectors
- established the minimum required process levels from historic data to optimize usage
- maintaining silo inventory above minimum levels to prevent segregation and handling issues from low silos

Plan Summary Statement

This plan summary accurately reflects the content of the toxic substance reduction plan for selenium, prepared by Owens Corning Insulating Systems Canada LP - Toronto Facility, dated December 19, 2012.

*Date of Plan: **December 19, 2012***

Toxic Substance Reduction Option(s) to be Implemented

The following options have been identified for implementation to reduce the use, creation, or releases of selenium:

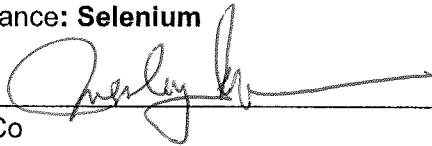
		Used	Created	Contained in Product	On-Site Releases to Air	On-Site Releases to Water	On-Site Releases to Land	Disposal On-Site	Disposal Off-Site	Transfer Off-Site for Recycling
Option Description:	Commission the early detection system re: crust temperature which triggers operator investigation, and real-time MnO ₂ dosing - could eliminate use of excess MnO ₂ (contains trace amounts of selenium).									
Estimated Reductions due to Option Implementation	Tonnes	0.0002	N/A	0.0001	0.0000002	N/A	N/A	N/A	0.000001	N/A
	%	0.181%	N/A	0.181%	0.181%	N/A	N/A	N/A	0.181%	N/A
Timeline for Reductions	Years	1	N/A							

Date of Plan: **December 19, 2012**

Certification By Highest Ranking Employee

As of December 19, 2012, I, Wesley Co, certify that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and to my knowledge the plan is factually accurate and complies with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Selenium**



Wesley Co

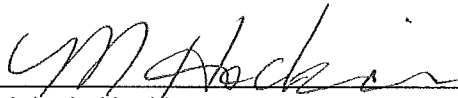
Plant Leader

Owens Corning Insulating Systems Canada LP - Toronto Facility

Certification By Licensed Planner

As of December 19, 2012, I, Melanie Hockin certify that I am familiar with the processes at Owens Corning Insulating Systems Canada LP - Toronto Facility that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the *Toxics Reduction Act, 2009* that are set out in the plan dated December 19, 2012 and that the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Toxic Substance: **Selenium**



Melanie Hockin

Toxic Substance Reduction Planner

License Number: TSRP0140

LEHDER Environmental Services Limited