

Toxics Reduction Regulation
Annual Report Ontario Regulation 455/09

Report for 2016

Prepared by:

Janet Payette

Sr. Environmental Engineer

INVISTA (Canada) Company

Maitland Site

This report is prepared under O.Reg. 455/09 for: **INVISTA (Canada) Company**, Maitland Site.

Street address:

1400 County Road #2 East,
Maitland,
Ontario, K0E 1P0.

Mailing address:

INVISTA (Canada) Company
P.O. Box 611,
Maitland, ON, K0E 1P0

The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) are:

Zone: 43 Easting: 454130 Northing: 4945456

In 2016 the site had approximately 96 full time equivalent employees.

The site NPRI ID number is 1207; the Site O.Reg 127/01 ID number was 5030.

The NAICS codes for this facility are:

- NAICS 2 Code: 32 - Manufacturing
- NAICS 4 Code: 3251 - Basic Chemical Mfg.
- NAICS 6 Code: 325190 - Other Basic Organic Chemical Mfg.

Canadian parent company of the facility (100% responsible for this facility):

INVISTA (Canada) Company
455 Front Road
Kingston, Ontario Canada
K7L4Z6

The Site Public Contact:

Paul Brown
455 Front Road
Kingston, Ontario Canada
K7L4Z6

The highest ranking management employee:

Mr. Joe Hendriks
Maitland Site Manager & Director
(613) 348-4011

Street address:

1400 County Road #2 East,
Maitland,
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Substances covered under this report for Maitland Site are:

Substance	CAS #
Hydrochloric Acid	7647-01-0
Methyl Alcohol (Methanol)	67-56-1
Hexachlorobenzene	118-74-1
Carbon Monoxide	630-08-0
NOX (as NO2)	11104-93-1
Particulate Matter 2.5	No CAS number for this substance
Particulate Matter 10	No CAS number for this substance
Total Ammonia	Includes NH3 (CAS 7664-41-7) and NH4+ (CAS 14798-03-9)
Pentane (all isomers)	No specific CAS number for this substance

Hydrochloric Acid

Hydrochloric acid is used to aid in treating boiler feedwater; specifically it is used to regenerate ion exchange resin beds where impurities are removed from water prior to the water being used to make steam.

The overall site quantities are (in Tonnes of 100% HCl):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10 to 100	-11.9
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	0	0

The amount of HCl used decreased in 2016 due to lower steam production.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. This plan contains an objective to reduce the use of hydrochloric acid at the site by 3.4 tonnes by June 2014. This was to be done through improvements to the system through the calibration of the flow measurement device. Further investigation has determined that the flow meter being used is the most accurate meter available and does not require calibration. This option is no longer valid and reductions will not occur. There were no additional actions taken in 2016 to achieve the objectives in the plan.

Methanol

Methanol or methyl alcohol is used for two differing purposes;

1. It is added to compressed air lines to protect the moisture traps from freezing in the winter months as a significant amount of the compressed air distribution system is outdoors.
2. It is used as a supplementary feed for our biological wastewater treatment plant.

The overall site quantities are (in Tonnes):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10 to 100	-17.7
Created	0	0
Contained in Product	0	0
Released	9.84	-1.8
Disposed	0	0
Transferred	0	0

Total methanol use decreased in 2016. The primary use for methanol at the site is as a carbon source in wastewater treatment. There were improvements made to the system over the past few years which resulted in less methanol being added to the wastewater treatment plant.

Methanol emissions are primarily a result of material added to the service air to prevent freezing in cold weather. Total methanol emissions decreased in 2016 due to better monitoring of the system and the installation of a smaller pump.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. There were two objectives in the plan. The first objective was to reduce methanol use by 46 tonnes by the end of 2014. This initiative was completed. The second objective was to reduce the use and release of methanol by 1.7 tonnes by the end of 2015. The timeline for this initiative was delayed and was completed in late 2016. There were no additional actions taken in 2016 to achieve the objectives in the plan.

Hexachlorobenzene

Hexachlorobenzene is included in this report as the Site carries out an activity indicated in the National Pollutant Release Inventory (NPRI) notice which requires reporting any emissions of these substances. The site incinerates a process by-product stream that is classified as Hazardous Waste. Neither the waste stream nor the prime fuel (Natural gas) used in the boilers where the combustion takes place contain any chlorine or chlorine compounds so the potential for generation Hexachlorobenzene is not possible.

There were no source tests conducted for Hexachlorobenzene and there are no emission factors available for estimation of emissions of Hexachlorobenzene from the specific process by-product that is incinerated at the site.

The overall site quantities are (in Grams):

	2016 Quantity/Range Amount (grams)	Change from 2015 %
Used	0	0
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	0	0

There was no change in this data for 2016.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. This plan contains an objective to continue to measure and monitor process fuel parameters to validate that there is no creation of hexachlorobenzene. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

Particulate Matter

Reporting of particulate matter is based on the micron size of the particle. Maitland site meets the threshold for reporting PM_{2.5} and PM₁₀. Particulate from the combustion of fuel is the primary source of particulate emissions at the site.

The overall site quantities are (Tonnes)

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
PM_{2.5}		
Used	0	0
Created	>1 to 10	-17.3
Released	1.53	13.3
PM₁₀		
Used	0	0
Created	>1 to 10	-60.7
Released	1.53	12.9

The amount created decreased due to production. The amount released increased due to more gas burned in site equipment.

A Toxic Reduction Plan was developed for this substance in 2013. There have been no amendments to the plan. This plan contains an objective to operate the cogeneration facility and boiler units as efficiently as possible which should result in the reduction or more efficient burning of natural gas in the boilers and cogeneration unit which will reduce the creation of particulate. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

Carbon Monoxide

Carbon monoxide is created through the combustion of fuel.

The overall site quantities are (in Tonnes):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	-18.3
Released	35.05	-18.3

The amount created and released decreased in 2016 due to decreased steam production.

A Toxic Reduction Plan was developed for this substance in 2013. There have been no amendments to the plan. This plan contains an objective to operate the cogeneration facility and boiler units as efficiently as possible which should result in the reduction or more efficient burning of natural gas in the boilers and cogeneration unit which will reduce the creation of carbon monoxide. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

NO_x

NO_x is created through the combustion of fuel.

The overall site quantities are (in Tonnes):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>100 to 1000	9.7
Released	136.53	9.7

The amount created and released was approximately the same as 2015 (<10%).

A Toxic Reduction Plan was developed for this substance in 2013. There have been no amendments to the plan. This plan contains an objective to operate the cogeneration facility and boiler units as efficiently as possible which should result in the reduction or more efficient burning of natural gas in the boilers and cogeneration unit which will reduce the creation of NO_x. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

Ammonia

Ammonia is used and created in the amines manufacturing process. It is created as a byproduct in the manufacturing process and it is created in the wastewater treatment plant from the breakdown of organic nitrogen.

The overall site quantities are (in Tonnes):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>100 to 1000	-3.9
Created	>100 to 1000	-7.5
Contained in Product	>10 to 100	-55.1
Released	55.25	-11.5
Disposed	0.00	-100
Transferred	0	0

Use and creation of ammonia was not significantly different in 2016 (<10%). The amount contained in product decreased because there were less shipments of ammonia in 2016. Disposals decreased because the biosolids recovery process did not run in 2016.

A Toxic Reduction Plan was developed for this substance in 2013. There have been no amendments to the plan. This plan contains an objective to continue to look for options that will reduce the long term use and creation of ammonia. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

Pentane

Pentane is created through the combustion of fuel.

The overall site quantities are (in Tonnes):

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>1 to 10	-32.1
Released	1.13	-32.1

Emissions from Pentane decreased because there was less steam produced in 2016.

A Toxic Reduction Plan was developed for this substance in 2015. There have been no amendments to the plan. This plan contains an objective to operate the cogeneration facility and boiler units as efficiently as possible which should result in the reduction or more efficient burning of natural gas in the boilers and cogeneration unit which will reduce the creation of pentane. There were no options identified within the plan that were technically or economically feasible to implement. There were no additional actions taken in 2016 to achieve the objectives of the plan.

I certify that I have read this report on the toxic substance reduction accounting and am familiar with its contents and to my knowledge the information contained in the report is factually accurate and the report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under the Act.

A handwritten signature in cursive script that reads "Joe Hendriks".

Mr. Joe Hendriks
Maitland Site Manager & Director
(613) 348-4011