

Toxics Reduction Regulation
Annual Report Ontario Regulation 455/09

Report for 2017

Prepared by:

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Sr Environmental Engineer

INVISTA (Canada) Company

Kingston Site

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

Street address:

455 Front Road
Kingston, Ontario
K7L 4Z6

Mailing address:

INVISTA (Canada) Company
P.O. Box 2100
Kingston, ON, K7L 4Z6

The spatial coordinates of the facility are:

Latitude 44.21590 Longitude -76.55530

In 2017 the site had approximately 708 full time equivalent employees.

The site NPRI ID number is 003422; the Site O.Reg 127/01 ID number is 10793.

The NAICS codes for this facility is:

- NAICS 6 Code: 325220 - Artificial and Synthetic Fibres and Filaments Manufacturing

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

INVISTA (Canada) Company
P.O. Box 2100
Kingston, ON, K7L 4Z6

The Site Public Contact:

Mr. Paul Brown
Manager Government & Public Affairs
(613) 548-5320
Address as above for the site

Substances covered under this report for Kingston Site are:

Substance	CAS #
Biphenyl	92-52-4
Sulphuric Acid	7664-93-9
Copper (and its compounds)	NA-06
Carbon Monoxide	630-08-0
NOx (as NO2)	11104-93-1
Particulate Matter 2.5	NA-M10
Particulate Matter 10	NA-M09
Total Particulate Matter	NA-M08
Ethylene Glycol	107-21-1
Total Ammonia	NA-16
Adipic Acid	124-04-9
Butane (all isomers)	NA-24
Pentane (all isomers)	NA-36
Cobalt (and its compounds)	NA-05

Biphenyl

Biphenyl is a component of Diphenyl/Diphenyl Oxide (DP:DPO) which is used as a heat transfer fluid in the manufacturing process.

The overall quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	1.27	-36.11
Disposed	0	0
Transferred	0.59	-30.13

The amount of biphenyl used in 2017 was not significantly different (<10%) than 2016. The amount released decreased because fugitive emissions decreased. The quantity of biphenyl transferred decreased because there was less maintenance required.

A Toxic Reduction Plan was developed for this substance in 2011. There have been no amendments to the plan. The plan does not intend to reduce the amount of biphenyl used, released, created, disposed, transferred or contained in product. Kingston site intends to continue to operate its processes involving biphenyl in a safe and responsible manner. There are no economically or technically feasible options identified in the plan. For this reason, no reduction options will be implemented. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Sulphuric Acid

Sulphuric acid (93%) is used to adjust pH of sanitary sewer effluent and in the boiler feedwater treatment process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	>10 to 100	-26.98
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	0.015	-93.9

The amount of sulphuric acid used decreased in 2017 due to production and inventory adjustments. The amount transferred in 2017 decreased due to less waste being generated by maintenance activities.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of sulphuric acid used, released, created, disposed, transferred or contained in product. Kingston site intends to continue to operate its processes involving sulphuric acid in a safe and responsible manner. There are no economically or technically feasible options identified in the plan. For this reason, no reduction options will be implemented. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Copper (and its compounds)

Copper (and its compounds) are in various substances used in the nylon production process at the facility. The majority of the copper containing substances are consumed and/or contained in product.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	>10 to 100	13.67
Created	0	0
Contained in Product	>10 to 100	-5.85
Released	0.107	-6.96
Disposed	0.05	-8.85
Transferred	0.08	182.14

The amount of copper in use, increased in 2017 due to an increased quantity of material being brought into the plant. The amount of copper contained in product decreased due to decrease in production of specific copper containing products. The amount of copper released in 2017 is not significantly different (<10%). The amount of copper disposed was not significantly different (<10%). The amount of copper transferred increased due to higher maintenance activities.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of copper used, released, created, disposed, transferred or contained in product. Kingston site intends to continue to operate its processes involving copper in a safe and responsible manner. There are no economically or technically feasible options identified in the plan. For this reason, no reduction options will be implemented. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Carbon Monoxide

Carbon Monoxide is produced as a by-product of general stationary combustion which supports the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-8.45
Released	45.09	-8.45

The amount of carbon monoxide created and released in 2017 was not significantly different than 2016 (<10%).

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of carbon monoxide used, released, created, disposed, transferred or contained in product. Kingston Site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of carbon monoxide. There were no additional actions taken in 2017 to achieve the objectives of the plan.

NO_x

NO_x emissions are produced as a by-product of general stationary combustion which supports the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-6.23
Released	64.66	-6.23

The amount of oxides of nitrogen created and released in 2017 was not significantly different (<10%) than 2016.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of oxides of nitrogen used, released, created, disposed, transferred or contained in product. Kingston Site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of oxides of nitrogen. There were no additional actions taken in 2017 to achieve the objectives of the plan.

Total Ammonia

Ammonia is produced as a by-product of the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-19.14
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	19.85	-19.14

The amount of ammonia created in 2017 decreased due to lower production levels.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount ammonia used, released, created, disposed, transferred or contained in product. Although the facility will not be implementing any options as a result of the planning process, it will continue to look for options that will reduce the long term creation of ammonia. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Particulate Matter (PM₁₀)

Particulate matter is generated as a by-product of general stationary combustion, a by-product of the manufacturing process, and from the unloading of adipic acid railcars. Conservatively, the site considers all particulate released on-site to be less than 2.5 microns in size with the exception of that produced by combustion of #2 Fuel Oil.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-3.49
Released	19.31	-5.09

The amount of PM₁₀ created and released in 2017 was approximately the same as 2016 (<10%).

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of PM₁₀ used, released, created, disposed, transferred or contained in product. Kingston site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of PM₁₀. Further, the site will continue to look for options that will reduce the long term creation of particulate from material handling and manufacturing operations processes. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Particulate Matter (PM_{2.5})

Particulate matter is generated as a by-product of general stationary combustion, a by-product of the manufacturing process, and from the unloading of adipic acid railcars. Conservatively, the site considers all particulate released on-site to be less than 2.5 microns in size with the exception of that produced by combustion of #2 Fuel Oil.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-3.50
Released	19.11	-5.08

The amount of PM_{2.5} created and released in 2017 was approximately the same as 2016 (<10%).

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of PM_{2.5} used, released, created, disposed, transferred or contained in product. Kingston site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of PM_{2.5}. Further, the site will continue to look for options that will reduce the long term creation of particulate from material handling and manufacturing operations processes. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Total Particulate Matter (PM_T)

Particulate matter is generated as a by-product of general stationary combustion, a by-product of the manufacturing process, and from the unloading of adipic acid railcars. This substance was not reported in 2015 but was reported in 2014. The regulation requires the comparison data to be against the last reported data.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>10 to 100	-3.54
Released	20.08	-5.10

There was no significant increase in amount of total particulate created or released.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of PM_T used, released, created, disposed, transferred or contained in product. Kingston site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of PM_T. Further, the site will continue to look for options that will reduce the long term creation of particulate from material handling and manufacturing operations processes. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Ethylene Glycol

Ethylene glycol is added to water used for heating purposes during the winter season to prevent freezing of the solution.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0.04	310
Transferred	3.61	21.99

There was no significant difference in the amount used 2017. The quantity of the substance disposed and transferred changed due to maintenance activities.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of ethylene glycol used, released, created, disposed, transferred or contained in product. Although the facility will not be implementing any options as a result of the planning process, it will continue to look for options that will reduce the long term use of ethylene glycol. There were no additional actions taken in 2017 to achieve the objectives in the plan.

Adipic Acid

Adipic Acid is a raw material received at the site that is used in the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	>10000 to 100000	-5.82
Created	0	0
Released	1.04	-2.99

There was no significant change (<10%) in adipic acid use or release in 2017.

A Toxic Reduction Plan was developed for this substance in 2012. There have been no amendments to the plan. The plan does not intend to reduce the amount of adipic acid used, released, created, disposed, transferred or contained in product. Although the facility will not be implementing any options as a result of the planning process, it will continue to look for options that will reduce the long term creation of particulate from adipic acid. There were no additional actions taken in 2017 to achieve the objectives of the plan.

Butane

Butane emissions are produced as a by-product of general stationary combustion which supports the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>1 to 10	-8.96
Released	1.037	-8.96

The amount of butane created and released in 2017 was not significantly different than 2016.

A Toxic Reduction Plan was developed for this substance in 2015. There have been no amendments to the plan. The plan does not intend to reduce the amount of butane used, released, created, disposed, transferred or contained in product. Kingston Site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of butane. There were no additional actions taken in 2017 to achieve the objectives of the plan.

Pentane

Pentane emissions are produced as a by-product of general stationary combustion which supports the manufacturing process.

The overall site quantities are:

	2017 Quantity/Range Amount (tonnes)	Change from 2016 %
Used	0	0
Created	>1 to 10	-9.07
Released	1.28	-9.07

The amount of pentane created and released was not significantly different than 2016.

A Toxic Reduction Plan was developed for this substance in 2015. There have been no amendments to the plan. The plan does not intend to reduce the amount of pentane used, released, created, disposed, transferred or contained in product. Kingston Site intends to operate its vaporizers, boilers, burnout furnace and other natural gas burning sources as efficiently as possible which should result in the reduction or more efficient burning of natural gas which will reduce the creation of pentane. There were no additional actions taken in 2017 to achieve the objectives of the plan.

Cobalt (and its compounds)

Cobalt (and its compounds) are used in the nylon production process at the facility. Cobalt is contained in the product and disposed.

The overall site quantities are:

	2017 Quantity/Range Amount (kg)	Change from 2016 %
Used	>100 to 1000	4.31
Created	0	0
Contained in Product	>100 to 1000	-16.07
Released	0	0
Disposed	118.12	-8.85
Transferred	0	0

The amount of used and disposed was not significantly different than 2016. The amount of cobalt contained in product decreased due to production.

A Toxic Reduction Plan was developed for this substance in 2017. There have been no amendments to the plan. The plan does not intend to reduce the amount of cobalt used, released, created, disposed, transferred or contained in product. There are no economically or technically feasible options identified in the plan but the site will evaluate options for reduction that may arise in the future.

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.

Signed original located at facility

Mr. Dennis McAllister
Site Manager
(613) 548-5339