Toxics Reduction Regulation

Annual Report Ontario Regulation 455/09

Report for 2016

Prepared by:

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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 expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) are:

Zone: 18 Easting: 375702 Northing: 4897041

In 2016 the site had approximately 699 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 are:

- NAICS 2 Code: 32 - Manufacturing
- NAICS 4 Code: 3252 - Resin, Synthetic Rubber, and Artificial and Synthetic Fibres and Filaments Manufacturing
- 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 highest ranking management employee:

Mr. Dennis McAllister
Site Manager
(613) 548-5339
Address as above for the site

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)	No specific CAS number for this substance
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 Particulate Matter	No CAS number for this substance
Ethylene Glycol	107-21-1
Total Ammonia	Includes NH3(CAS 7664-41-7) and NH4+ (CAS 14798-03-9)
Adipic Acid	124-04-9
Butane (all isomers)	No specific CAS number for this substance
Pentane (all isomers)	No specific CAS number for this substance
Cobalt (and its compounds)	No specific CAS number for this substance

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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	1.98	-3.99
Disposed	0	0
Transferred	0.84	-9.64

The amount of biphenyl used and released to air in 2016 was not significantly different (<10%) than 2015. The quantity of biphenyl transferred was not significantly different than 2015.

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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>100 to 1000	32.9
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	0.25	-29.7

The amount of sulphuric acid used increased in 2016 due to an increase in production levels at the site. The amount transferred in 2016 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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10 to 100	-20.3
Created	0	0
Contained in Product	>10 to 100	-7.6
Released	0.12	-2.7
Disposed	0.05	100
Transferred	0.03	-59.4

The amount of copper in use, decreased in 2016 due to lower material orders for inventory. The amount of copper contained in product decreased due to decrease in production of specific copper containing products. The amount of copper released in 2016 is not significantly different (<10%). The amount of copper disposed increased due to a new source being reported. The amount of copper transferred decreased due to lower 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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	-3.13
Released	49.25	-3.13

The amount of carbon monoxide created and released in 2016 was not significantly different than 2015 (<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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	1.0
Released	68.96	1.0

The amount of oxides of nitrogen created and released in 2016 was not significantly different (<10%) than 2015.

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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	-16.6
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	24.55	-16.6

The amount of ammonia created in 2016 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 2016 to achieve the objectives in the plan.

Particulate Matter (PM_{10})

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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	8.1
Released	20.35	16.7

The amount of PM_{10} created and released in 2016 increased due to higher production.

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_{10} 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_{10}. 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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>10 to 100	7.6
Released	20.13	16.9

The amount of $PM_{2.5}$ created and released in 2016 increased due to higher production.

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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2014 %
Used	0	0
Created	>10 to 100	-8.4
Released	21.16	-18.4

There was no significant increase in amount of total particulate created. The amount of particulate released decreased due to production rates.

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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0.01	0
Transferred	2.96	23.0

There was no significant difference in the amount used and disposed in 2016. The quantity of the substance 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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	>10000 to 100000	1.5
Created	0	0
Released	1.07	1.42

There was no significant change in adipic acid use or release in 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 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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>1 to 10	-4.8
Released	1.14	-4.8

The amount of butane created and released in 2016 was not significantly different than 2015.

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 2016 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:

	2016 Quantity/Range Amount (tonnes)	Change from 2015 %
Used	0	0
Created	>1 to 10	-4.7
Released	1.41	-4.7

The amount of pentane created and released was not significantly different than 2015.

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 2016 to achieve the objectives of the plan.

Cobalt (and its compounds)

Cobalt (and its compounds) are used various substances used in the nylon production process at the facility. Cobalt is contained in the product and disposed.
This is the first year reporting this substance. A toxic reduction plan will be developed for this substance by the end of the year.

The overall site quantities are:

	2016 Quantity/Range Amount (kg)
Used	>100 to 1000
Created	0
Contained in Product	>100 to 1000
Released	0
Disposed	129.6
Transferred	0

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.

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