Toxics Reduction Regulation

Annual Report Ontario Regulation 455/09

Report for 2020

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 2020 the site had approximately 865 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
Ethylene Glycol	107-21-1
Total Ammonia	NA-16
Butane (all isomers)	NA-24
Pentane (all isomers)	NA-36
Cobalt (and its compounds)	NA-05

Adipic Acid is no longer included in this report as it is no longer a speciated VOC.

Emissions of Total Particulate Matter are not reported because the threshold for reporting was not met in 2020.

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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	1.284	-50.71
Disposed	0	0
Transferred	1.179	97.16

The amount of biphenyl used was not significantly different (<10%) than 2019. No abnormal releases were detected through 2020. Released amounts decreased due to a refinement in the estimate ,a lower production and variability in the mass balance. The amount transferred increased due to increased maintenance.

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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	>100 to 1000	86.1
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	0.075	3504

The amount of sulphuric acid used increased in 2020 due to a process change which required more neutralization of the effluent leaving the plant. There were more transfers of sulphuric acid in 2020 due to minor spills within containment basins.

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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	>10 to 100	-16.8
Created	0	0
Contained in Product	>10 to 100	-23.3
Released	0.053	-52.25
Disposed	0.037	-56.98
Transferred	0.039	8.77

The amount of copper used and contained in product was lower than 2019 due to changes in production. The amount of copper release decreased due to lower flows and a change in the calculation methodology. The amount of copper disposed decreased because there was of lower production and because there was a shipment of off-spec material in 2019. The change in the amount of copper transferred was not significant (<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 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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>10 to 100	-16.9
Released	42.81	-16.9

There was less carbon monoxide created and released in 2020 due to less natural gas used to support production 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 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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>10 to 100	-27.5
Released	53.10	-27.5

There was less NOx created and released in 2020 due to less natural gas used to support production processes.

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 2019 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>10 to 100	52.3
Contained in Product	0	0
Released	0	0
Disposed	0	0
Transferred	25.69	52.3

The amount of ammonia created and released increased in 2020 due to operational and flow variability.

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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>10 to 100	-15.71
Released	21.49	-20.63

The amount of PM_{10} created and released in 2020 was less than 2019 due to lower 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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>10 to 100	-15.68
Released	16.89	-20.62

The amount of $PM_{2.5}$ created and released in 2020 was less than 2019 due to decreased 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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	>10 to 100	0
Created	0	0
Contained in Product	0	0
Released	0	0
Disposed	0	-100
Transferred	0.113	-92.96

There was no significant difference in the amount used in 2020. 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 2020 to achieve the objectives in 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>1 to 10	-11.2
Released	1.01	-11.2

The amount of butane created and released in 2020 was lower due to lower gas use needed to support production.

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 2020 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:

	2020 Quantity/Range Amount (tonnes)	Change from 2019 %
Used	0	0
Created	>1 to 10	-16.56
Released	1.26	-16.56

The amount of pentane created and released in 2020 was less than 2019 due to lower gas use needed to support production.

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 2020 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:

	2020 Quantity/Range Amount (kg)	Change from 2019 %
Used	>100 to 1000	-45.9
Created	0	0
Contained in Product	>100 to 1000	-52.8
Released	0	0
Disposed	92.06	-28.5
Transferred	0	0

The amount of cobalt used, contained in product and disposed was lower in 2020 due to lower 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 evaluated 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