

Toxics Reduction Regulation  
Annual Report Ontario Regulation 455/09

Report for 2018

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 are:

Latitude      44.21590                      Longitude      -76.55530

In 2018 the site had approximately 759 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   |
| NO <sub>x</sub> (as NO <sub>2</sub> ) | 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:

|                      | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------------------|--|-----------------------|
| Used                 | >10 to 100                             | 0                     |
| Created              | 0                                      | 0                     |
| Contained in Product | 0                                      | 0                     |
| Released             | 1.204                                  | -4.9                  |
| Disposed             | 0                                      | 0                     |
| Transferred          | 0.68                                   | 14.60                 |

The amount of biphenyl used and released in 2018 was not significantly different (<10%) than 2017. The quantity of biphenyl transferred increased due to increased maintenance activities.

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 2018 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:**

|                      | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------------------|--|-----------------------|
| Used                 | >10 to 100                             | -17.02                |
| Created              | 0                                      | 0                     |
| Contained in Product | 0                                      | 0                     |
| Released             | 0                                      | 0                     |
| Disposed             | 0                                      | 0                     |
| Transferred          | 0.51                                   | 3273.33               |

The amount of sulphuric acid used decreased in 2018 due to production and inventory adjustments. The amount transferred in 2018 increased due waste generated from a contained spill.

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 2018 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:

|                      | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------------------|--|-----------------------|
| Used                 | >10 to 100                             | 2.14                  |
| Created              | 0                                      | 0                     |
| Contained in Product | >10 to 100                             | 8.59                  |
| Released             | 0.114                                  | 6.54                  |
| Disposed             | 0.049                                  | -2.0                  |
| Transferred          | 0.05                                   | -39.75                |

The amount of copper in use, contained in product and released was not significantly different than 2017 (<10%). The amount of copper transferred decreased 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 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 2018 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:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >10 to 100                             | 19.18                 |
| Released | 53.73                                  | 19.18                 |

The amount of carbon monoxide created and released in 2018 increased due to increased gas usage to support production increases.

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 2018 to achieve the objectives of the plan.

## NO<sub>x</sub>

NO<sub>x</sub> emissions are produced as a by-product of general stationary combustion which supports the manufacturing process.

### The overall site quantities are:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >10 to 100                             | 8.69                  |
| Released | 70.28                                  | 8.69                  |

The amount of oxides of nitrogen created and released in 2018 was not significantly different (<10%) than 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 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 2018 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:

|                      | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------------------|--|-----------------------|
| Used                 | 0                                      | 0                     |
| Created              | >10 to 100                             | -23.17                |
| Contained in Product | 0                                      | 0                     |
| Released             | 0                                      | 0                     |
| Disposed             | 0                                      | 0                     |
| Transferred          | 26.76                                  | -23.17                |

The amount of ammonia created and released decreased in 2018. Less ammonia was created due to operational and flow variability through 2018.

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 2018 to achieve the objectives in the plan.

### Particulate Matter (PM<sub>10</sub>)

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:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >10 to 100                             | 0.2                   |
| Released | 20.98                                  | 8.62                  |

The amount of PM<sub>10</sub> created and released in 2018 was approximately the same as 2017 (<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<sub>10</sub> 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<sub>10</sub>. 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 2018 to achieve the objectives in the plan.

### Particulate Matter (PM<sub>2.5</sub>)

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:**

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >10 to 100                             | 0.14                  |
| Released | 20.74                                  | 8.54                  |

The amount of PM<sub>2.5</sub> created and released in 2018 was approximately the same as 2017 (<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<sub>2.5</sub> 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<sub>2.5</sub>. 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 2018 to achieve the objectives in the plan.

### Total Particulate Matter (PM<sub>T</sub>)

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.

**The overall site quantities are:**

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >10 to 100                             | 0.41                  |
| Released | 21.85                                  | 8.81                  |

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<sub>T</sub> 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<sub>T</sub>. 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 2018 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:**

|                      | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------------------|--|-----------------------|
| Used                 | >10 to 100                             | 0                     |
| Created              | 0                                      | 0                     |
| Contained in Product | 0                                      | 0                     |
| Released             | 0                                      | 0                     |
| Disposed             | 0                                      | -100                  |
| Transferred          | 0.74                                   | -79.6                 |

There was no significant difference in the amount used 2018. 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 2018 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:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | >10000 to 100000                       | 13.45                 |
| Created  | 0                                      | 0                     |
| Released | 1.185                                  | 13.94                 |

The increase in amount used and amount released was due to an increase in 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 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 2018 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:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >1 to 10                               | 16.3                  |
| Released | 1.206                                  | 16.3                  |

The amount of butane created and released increased in 2018 due to increased gas usage to support production increases.

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 2018 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:

|          | 2018 Quantity/Range<br>Amount (tonnes) | Change from 2017<br>% |
|----------|--|-----------------------|
| Used     | 0                                      | 0                     |
| Created  | >1 to 10                               | 17.69                 |
| Released | 1.51                                   | 17.69                 |

The amount of pentane created and released increased due to increased gas usage 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 2018 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:

|                      | 2018 Quantity/Range<br>Amount (kg) | Change from 2017<br>% |
|----------------------|------------------------------------|-----------------------|
| Used                 | >100 to 1000                       | 17.72                 |
| Created              | 0                                  | 0                     |
| Contained in Product | >100 to 1000                       | 79.42                 |
| Released             | 0                                  | 0                     |
| Disposed             | 122.95                             | 4.09                  |
| Transferred          | 0                                  | 0                     |

The amount of cobalt used and contained in product increased due to production increases. The amount disposed was not significantly different than 2017 (<10%).

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