

TOXICS REDUCTION ACT

The Toxics Reduction Act was introduced in the Province of Ontario in 2010; the Act requires regulated facilities to:

- Track, quantify and report annually on the toxic substances they use, create, release, dispose, transfer and contain in products
- Develop plans to reduce the use and creation of these substances
- Make annual reports and summaries of their plans available to their employees and the public

Bombardier has made reducing our environmental footprint a strategic priority. We strive to continuously reduce any detrimental environmental impact generated by our products and operations. Bombardier is committed to complying with and when possible going beyond the requirements of regulations to ensure our operations are managed safely, ecologically and in a sustainable way.

Bombardier facilities located in the Province of Ontario, Canada required to report under the Toxics Reduction Act include:

- Bombardier Aerospace Toronto Site
- Bombardier Transportation Thunder Bay

Bombardier Thunder Bay Plant - Facility Information

Address:

1001 Montreal Street
Thunder Bay ON
P7C 4V6

Parent Company

Bombardier Inc.
800 Rene Levesque Blvd West
Montreal, QC H3B 1Y8

Public Contact: Lindsay Fenton

Phone Number: (807)-475-1929

| | |
|--|--------------------|
| North American Industry Classification System (NAICS) code | 336510 |
| NAICS Canada code | 3365 |
| National Pollutant Release Inventory identification number | 005601 |
| Ontario Ministry of Environment identification number | 5395 |
| Universal Transverse Mercator coordinates | 16T 328397 5359686 |
| Number of employees | 1247 |

Section 1: Prescribed Toxic Substances On-Site

Twenty (20) toxic substances were identified to be reported on a facility wide basis under O. Reg. 455/09. These substances are identified in Table 1 below. A summary of the reasons for changes in quantification of substances between calendar years is also provided below.

Table 1: Substances Reported on a Facility Wide Basis

| Substance Name | CAS | Reporting Year | Use | Creation | Contained in Product | Release to Air | Transfers | Disposals |
|------------------------------|----------|----------------|--------|----------|----------------------|----------------|-----------|-----------|
| | | | Tonnes | Tonnes | Tonnes | Tonnes | Tonnes | Tonnes |
| n-Butyl Acetate | 123-86-4 | 2014 | 3.70 | 0 | 0 | 3.70 | 0 | 0 |
| | | 2013 | 4.60 | 0 | 0 | 4.60 | 0 | 0 |
| | | Change | -0.9 | 0 | 0 | -0.9 | 0 | 0 |
| | | % Change | -19.5 | 0 | 0 | -19.5 | 0 | 0 |
| Chromium (and its compounds) | NA-04 | 2014 | 24.8 | 0 | 24.8 | 0.0071 | 34.5 | 0.044 |
| | | 2013 | 74.4 | 0 | 38.4 | 0.0769 | 71.6 | 0.167 |
| | | Change | -49.6 | 0 | -13.6 | -0.0698 | -37.04 | -0.123 |
| | | % Change | -66.7 | 0 | -35.4 | -90.8 | -51.7 | -73.7 |
| Copper (and its compounds) | NA-06 | 2014 | 14.3 | 0 | 14.3 | 0.012 | 39.5 | 0 |
| | | 2013 | 46.6 | 0 | 27.8 | 0.056 | 37.4 | 0.129 |
| | | Change | -32.3 | 0 | -13.5 | -0.044 | 2.1 | -1.29 |
| | | % Change | -69.3 | 0 | -48.5 | -78.5 | 5.6 | -100 |

| | | | | | | | | |
|----------------------------------|------------|----------|--------|--------|--------|--------|--------|--------|
| Hydrotreated Heavy Naphtha | 64742-48-9 | 2014 | 2.72 | 0 | 0 | 2.72 | 0 | 0 |
| | | 2013 | 2.78 | 0 | 0 | 2.78 | 0 | 0 |
| | | Change | -0.06 | 0 | 0 | -0.06 | 0 | 0 |
| | | % Change | -2.3 | 0 | 0 | -2.3 | 0 | 0 |
| Hydrotreated Light Distillates | 64742-47-8 | 2014 | 1.30 | 0 | 0 | 1.30 | 0 | 0 |
| | | 2013 | N/A | 0 | 0 | N/A | 0 | 0 |
| | | Change | 1.30 | 0 | 0 | 1.30 | 0 | 0 |
| | | % Change | 100 | 0 | 0 | 100 | 0 | 0 |
| Ethyl Acetate | 141-78-6 | 2014 | 2.76 | 0 | 0 | 2.76 | 0 | 0 |
| | | 2013 | 4.68 | 0 | 0 | 4.68 | 0 | 0 |
| | | Change | -1.9 | 0 | 0 | -1.9 | 0 | 0 |
| | | % Change | -41 | 0 | 0 | -41 | 0 | 0 |
| Isopropyl Alcohol | 67-63-0 | 2014 | 3.28 | 0 | 0 | 3.28 | 0 | 0 |
| | | 2013 | 4.184 | 0 | 0 | 4.184 | 0 | 0 |
| | | Change | -0.9 | 0 | 0 | -0.9 | 0 | 0 |
| | | % Change | -21.6 | 0 | 0 | -21.6 | 0 | 0 |
| Manganese (and its compounds) | NA-09 | 2014 | 14.89 | 0 | 14.89 | 0.012 | 21.5 | 0 |
| | | 2013 | 46.49 | 0 | 24.11 | 0.059 | 44.2 | 0.219 |
| | | Change | -31.6 | 0 | -9.22 | -0.047 | -22.7 | -0.219 |
| | | % Change | -67.98 | 0 | -38.3 | -79.7 | -51.3 | -100 |
| Methanol | 67-56-1 | 2014 | 5.75 | 0 | 0 | 5.75 | 0 | 0 |
| | | 2013 | 9.59 | 0 | 0 | 9.59 | 0 | 0 |
| | | Change | -3.84 | 0 | 0 | -3.84 | 0 | 0 |
| | | % Change | -40.0 | 0 | 0 | -40.0 | 0 | 0 |
| Methyl Ethyl Ketone | 78-93-3 | 2014 | 9.65 | 0 | 0 | 9.65 | 4.04 | 0 |
| | | 2013 | 14.55 | 0 | 0 | 14.55 | 6.24 | 0 |
| | | Change | -4.90 | 0 | 0 | -4.90 | -2.20 | 0 |
| | | % Change | -33.7 | 0 | 0 | -33.7 | -35.3 | 0 |
| Methyl Isobutyl Ketone | 108-10-1 | 2014 | 1.13 | 0 | 0 | 1.13 | 0 | 0 |
| | | 2013 | 1.66 | 0 | 0 | 1.66 | 0 | 0 |
| | | Change | -0.53 | 0 | 0 | -0.53 | 0 | 0 |
| | | % Change | -31.9 | 0 | 0 | -31.9 | 0 | 0 |
| Nickel (and its compounds) | NA-11 | 2014 | 26.76 | 0 | 26.76 | 0.14 | 33.74 | 0.210 |
| | | 2013 | 73.02 | 0 | 40.06 | 0.15 | 65.21 | -0.210 |
| | | Change | -46.26 | 0 | -13.30 | -0.008 | -31.47 | -100 |
| | | % Change | -63.4 | 0 | -33.2 | -5.4 | -48.3 | 0 |
| Zinc (and its compounds) | NA-14 | 2014 | 15.1 | 0 | 15.1 | 0.020 | 5.24 | 0.105 |
| | | 2013 | 55.1 | 0 | 50.2 | 0.046 | 9.48 | -0.105 |
| | | Change | -40 | 0 | -35 | -0.026 | -4.24 | -100 |
| | | % Change | -73 | 0 | -70 | -56 | -45 | 0.210 |
| PM2.5 ^[2] | NA-M10 | 2014 | 0 | 0.524 | 0 | 0.524 | 0 | 0 |
| | | 2013 | 0 | 0.630 | 0 | 0.630 | 0 | 0 |
| | | Change | 0 | -0.106 | 0 | -0.106 | 0 | 0 |
| | | % Change | 0 | -16.8 | 0 | -16.8 | 0 | 0 |
| PM10 ^[2] | NA-M09 | 2014 | 0 | 3.58 | 0 | 3.58 | 0 | 0 |
| | | 2013 | 0 | 4.34 | 0 | 4.34 | 0 | 0 |
| | | Change | 0 | -0.76 | 0 | -0.76 | 0 | 0 |
| | | % Change | 0 | -17.5 | 0 | -17.5 | 0 | 0 |
| Solvent Naphtha Medium Aliphatic | 64742-88-7 | 2014 | 5.29 | 0 | 0 | 5.29 | 0 | 0 |
| | | 2013 | 5.10 | 0 | 0 | 5.10 | 0 | 0 |
| | | Change | 0.19 | 0 | 0 | 0.198 | 0 | 0 |
| | | % Change | 3.8 | 0 | 0 | 3.8 | 0 | 0 |
| Toluene | 108-88-3 | 2014 | 21.1 | 0 | 0 | 21.1 | 14.4 | 0 |
| | | 2013 | 33.9 | 0 | 0 | 33.9 | 23.5 | 0 |
| | | Change | -12.8 | 0 | 0 | -12.8 | -9.1 | 0 |
| | | % Change | -37.8 | 0 | 0 | -37.8 | -38.8 | 0 |

| | | | | | | | | |
|---|-----------|----------|-------|---|---|-------|-------|--------|
| Xylene (all isomers) | 1330-20-7 | 2014 | 7.13 | 0 | 0 | 7.13 | 0 | 0 |
| | | 2013 | 2.87 | 0 | 0 | 2.87 | 0 | 0 |
| | | Change | 4.3 | 0 | 0 | 4.3 | 0 | 0 |
| | | % Change | 148.4 | 0 | 0 | 148.4 | 0 | 0 |
| Cobalt (and its compounds) ^[3] | NA-05 | 2014 | 0.041 | 0 | | 0.001 | 0.041 | 0 |
| | | 2013 | 3.63 | 0 | | 0.005 | 2.85 | 0.0012 |
| | | Change | N/A | 0 | | N/A | N/A | N/A |
| | | % Change | N/A | 0 | | N/A | N/A | N/A |

| | | | Kilograms | Kilograms | Kilograms | Kilograms | Kilograms | Kilograms |
|--|-------|----------|---------------|-----------|---------------|--------------|-----------------|---------------|
| Lead (and its compounds) ^[1] | NA-08 | 2014 | 757.3 | 0 | 757.3 | 4.15 | 511.57 | 0 |
| | | 2013 | 4055.3 | 0 | 3304.1 | 8.99 | 1457 | 13.9 |
| | | Change | -3298 | 0 | -2547 | -4.84 | -945 | -13.9 |
| | | % Change | -81 | 0 | -77 | -53.8 | -64.9 | -100 |
| Selenium (and its compounds) ^[3] | NA-12 | 2014 | 34.9 | 0 | 34.9 | 0 | 129.386 | 0 |
| | | 2013 | 164.9 | 0 | 98.4 | 1.84 | 284.890 | 0.054 |
| | | Change | -130 | 0 | -63.5 | -1.84 | -155.504 | -0.054 |
| | | % Change | -78.8 | 0 | -64.5 | -100 | -54.58 | -100 |

Notes:

[1] Substances in bold and italics are reportable to the NPRI in kilograms

[2] Quantities include road dust for particulate matter

[3] Both Selenium (and its compounds) and Cobalt (and its compounds) did not meet the reporting requirements for NPRI. Bombardier Inc. has voluntarily reported this information to Environment Canada.

Section 2: Summary of Changes

A summary of reasons for changes in quantification of substances include:

- Metals – Overall decrease in purchase of raw materials containing toxic substances. Disposals to landfill for metals were eliminated in 2014. Transfers of metals off-site for recycling decreased for all metals with the exception of copper. Air emissions decreased for metals due to the decommissioning of equipment which previously released to air.
- VOCs - Overall decrease in purchase of raw materials containing toxic substances, with the exception of Xylene, Solvent Naphtha Medium Aliphatic and Hydrotreated Light Distillate. Air emissions decreased due to the decrease in raw materials purchased.
- PM_{2.5} and PM₁₀ - Air emission releases from process and unpaved roadway both decreased due to a decrease in process equipment operating hours and less vehicle traffic during summer months.

Section 3: Toxic Substance Reduction Plan Update

Table 2 contains an update of the toxic substance reduction plans submitted under O. Reg. 455/09.

Table 2: Toxic Substance Plans

| Substance Name | CAS | Objectives/Reductions/Comparison to Plan |
|-------------------------------|-------|---|
| Chromium (and its compounds) | NA-04 | <p>OBJECTIVES: Implement reduction options that consider equipment or process modification, inventory management/purchasing techniques and training or improved operating practices.</p> <p>REDUCTIONS: No estimates of reductions were planned for 2013 or 2014.</p> <p>COMPARISON TO PLAN: Equipment or process modification - Optimized nesting techniques and material cutting operations as per plan schedule. Inventory management/purchasing techniques - New inventory management system implemented. Improved operating practices – No additional steps were taken in the reporting period.</p> |
| Copper (and its compounds) | NA-06 | |
| Cobalt (and its compounds) | NA-05 | |
| Selenium (and its compounds) | NA-12 | |
| Manganese (and its compounds) | NA-09 | |

| | | |
|--|-----------|--|
| Nickel (and its compounds) | NA-11 | |
| Zinc (and its compounds) | NA-14 | |
| Lead (and its compounds) ^[1] | NA-08 | |
| Toluene | 108-88-3 | <p>OBJECTIVES: Implement reduction options that consider equipment or process modification, inventory management/purchasing techniques and training or improved operating practices.</p> <p>REDUCTIONS: The facility intends to reduce the use of Toluene by 70% or 6.64 tonnes by December 31, 2014. No reductions were achieved in the reporting period as per plan.</p> <p>COMPARISON TO PLAN: Equipment or process modification – Solvent Recovery System purchased and installation planned early 2014. Ongoing commissioning required due to ventilation issues. Inventory management/purchasing techniques - New inventory management system implemented as per plan schedule. Improved operating practices – No steps were taken in the reporting period to implement this option./purchasing techniques - New inventory management system implemented as per plan schedule. Improved operating practices – No steps were taken in the reporting period to implement this option.</p> |
| Xylene (all isomers) | 1330-20-7 | <p>OBJECTIVES: Implement reduction options that consider inventory management/purchasing techniques and training or improved operating practices.</p> <p>REDUCTIONS: No estimates of reductions were planned for 2013 or 2014.</p> <p>COMPARISON TO PLAN: Inventory management/purchasing techniques - New inventory management system implemented as per plan schedule. Improved operating practices – No steps were taken in the reporting period to implement this option.</p> |
| PM10 - Particulate Matter <=10 Microns | | <p>OBJECTIVES: Implement reduction options that consider improved operating practices.</p> <p>REDUCTIONS: No estimates of reductions were planned for 2014.</p> <p>COMPARISON TO PLAN: Improved operating practices – Calcium application annually to unpaved roadways. First application planned for 2014; however the facility was on strike. Application planned for 2015.</p> |
| PM2.5 - Particulate Matter <=2.5 Microns | | <p>OBJECTIVES: Implement reduction options that consider improved operating practices.</p> <p>REDUCTIONS: No estimates of reductions were planned for 2014.</p> <p>COMPARISON TO PLAN: Improved operating practices – Calcium application annually to unpaved roadways. First application planned for 2014; however the facility was on strike. Application planned for 2015.</p> |

Section 4: Certification by Highest Ranking Employee

As of June 1, 2016, I, David Reid certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to below 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 that Act.

Bombardier Aerospace Toronto Site - Facility Information

Address:

123 Garratt Blvd
Toronto ON
M3K 1Y5

Parent Company

Bombardier Inc.
800 Rene Levesque Blvd West
Montreal, QC H3B 1Y8

Public Contact: Mike Anger

Phone Number: 416-373-7540

North American Industry Classification System (NAICS) code

3364

NAICS Canada code

336411

National Pollutant Release Inventory identification number

001189

Ontario Ministry of Environment identification number

7159

Universal Transverse Mercator coordinates

17T 622175 4841522

Number of employees

3868

Substances Reported on a Facility Wide Basis

| Substance Name | CAS | Reporting Year | Use | Creation | Contained in Product | Release to Air | Transfers | Disposals |
|----------------------|-----------|----------------|------------------|------------------|----------------------|------------------|------------------|------------------|
| | | | Tonnes | Tonnes | Tonnes | Tonnes | Tonnes | Tonnes |
| Acetone | 67-64-1 | 2015 | 2.40 | 0 | 0 | 1.63 | 0 | 0.77 |
| | | 2014 | 2.22 | 0 | 0 | 1.47 | 0 | 0.75 |
| | | Change | 0.18 | 0 | 0 | 0.16 | 0 | 0.02 |
| | | % Change | 8.11 | 0 | 0 | 10.88 | 0 | 2.67 |
| Methyl Ethyl Ketone | 78-93-3 | 2015 | 1.00 | 0 | 0 | 0.68 | 0 | 0.32 |
| | | 2014 | 1.36 | 0 | 0 | 0.89 | 0 | 0.47 |
| | | Change | -0.36 | 0 | 0 | -0.21 | 0 | -0.15 |
| | | % Change | -26.47 | 0 | 0 | -23.60 | 0 | -31.92 |
| Isopropyl Alcohol | 67-63-0 | 2015 | 5.68 | 0 | 0 | 3.70 | 0 | 1.98 |
| | | 2014 | 4.96 | 0 | 0 | 3.22 | 0 | 1.74 |
| | | Change | -0.72 | 0 | 0 | -0.48 | 0 | -0.24 |
| | | % Change | -14.52 | 0 | 0 | -14.91 | 0 | -13.93 |
| Toluene | 108-88-3 | 2015 | 1.10 | 0 | 0 | 0.74 | 0 | 0.36 |
| | | 2014 | 1.88 | 0 | 0 | 1.20 | 0 | 0.68 |
| | | Change | -0.78 | 0 | 0 | -0.46 | 0 | -0.32 |
| | | % Change | -41.49 | 0 | 0 | -38.33 | 0 | -47.06 |
| Xylene (all isomers) | 1330-20-7 | 2015 | 0.97 | 0 | 0 | 0.63 | 0 | 0.34 |
| | | 2014 | 1.34 | 0 | 0 | 0.89 | 0 | 0.45 |
| | | Change | -0.37 | 0 | 0 | -0.26 | 0 | -0.11 |
| | | % Change | -27.61 | 0 | 0 | -29.21 | 0 | -24.44 |
| PM 10 | NA | 2015 | 0 | 0.53 | 0 | 0.53 | 0 | 0 |
| | | 2014 | 0 | 0.67 | 0 | 0.67 | 0 | 0 |
| | | Change | 0 | -0.14 | 0 | -0.14 | 0 | 0 |
| | | % Change | 0 | -20.90 | 0 | -20.90 | 0 | 0 |
| PM 2.5 | NA | 2015 | 0 | 0.26 | 0 | 0.26 | 0 | 0 |
| | | 2014 | 0 | 0.29 | 0 | 0.29 | 0 | 0 |
| | | Change | 0 | -0.03 | 0 | -0.03 | 0 | 0 |
| | | % Change | 0 | -10.34 | 0 | -10.34 | 0 | 0 |
| | | | Kilograms | Kilograms | Kilograms | Kilograms | Kilograms | Kilograms |
| Hexavalent Chromium | 7440-47-3 | 2015 | 340 | 0 | 285 | 3.6 | 0 | 51 |
| | | 2014 | 325 | 0 | 280 | 3.6 | 0 | 41 |
| | | Change | 15 | 0 | 5 | 0 | 0 | 10 |
| | | % Change | 4.6 | 0 | 1.79 | 0 | 0 | 24.39 |

Summary of reasons for changes in quantities of substances include:

- Implementation of toxics reduction plans
- Changes in production rates

Toxics Reduction Plans

| Substance Name | CAS | Objectives/Reductions/Comparison to Plan |
|---------------------|-----------|--|
| Acetone | 67-64-1 | <p>Objectives: Implement reduction options that consider material or feedstock substitutions and equipment or process modifications</p> <p>Reductions: The facility intends to reduce the use of acetone by 50% by December 2016.</p> <p>Comparison to Plan: Implementation of toxic reduction plans in 2013 reduced acetone usage by approximately 15%. Trials to replace solvents containing acetone with alternatives were unsuccessful, 50% reduction by December 2016 may not be achieved.</p> |
| Methyl Ethyl Ketone | 78-93-3 | <p>Objectives: Implement reduction options that consider material or feedstock substitutions and equipment or process modifications</p> <p>Reductions: The facility has reduced the use of methyl ethyl ketone by 90% compared to 2011.</p> <p>Comparison to Plan: The 90% reduction exceeds the planned 80%</p> |
| Hexavalent Chromium | 7440-47-3 | <p>Objectives: Implement reduction options that consider material or feedstock substitutions and equipment or process modifications</p> <p>Reductions: The facility intends to reduce the use of hexavalent chromium by 50% by December 2020.</p> <p>Comparison to Plan: Implementation of toxics reduction plans scheduled in 2013 are delayed by about 1 year. 50% reduction by 2020 is still achievable.</p> |

Certification by Highest Ranking Employee

As of June 1, 2016, I, Graham Kelly certify that I have read the report on the toxic substance reduction plan for the toxic substance referred to above 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 that Act.