Toxic Substance Reduction Plan
Part I
Toxic Substance Accounting For 2011
(Under The Toxics Reduction Act, 2009)
Public Report

Blount Canada, Ltd.
Oregon Cutting Systems Group
Guelph, Ontario

Last Updated: May 22, 2012

I. Preface

A. Blount Canada Ltd.

Blount Canada Ltd., (Blount) located at 505 Edinburgh Road North (east side), Guelph, Ontario N1H 6L4. The Blount property has a total area of approximately 78,700 m^2 (19.45 Acres) and has one building approximately 26,400 m^2 (284,200-ft^2) in size. Blount currently employs approximately 800 employees. Blount Canada Ltd. is a manufacturer of saw chains, bars and sprockets at the Guelph facility.

B. Report Contacts

Public contact: Les Kuczynski P. Eng., Environmental Engineer, Blount Canada Ltd., 505 Edinburgh Road North, Guelph, Ontario, N1H 6L4, phone: 519-822-6870

II. Reportable Toxic Substances - 2011

Blount Canada Ltd., Guelph, Ontario hast to report the following four Toxic Substances under the provisions of Section 9 (1) and (2) of Ontario Regulation 455/09 of Toxics Reduction Act:

- Item 25, Hexavalent Chromium Compounds – used in manufacturing process of chain cutters,
- Item 26, Hydrochloric Acid (CAS 7647-01-0) - used in manufacturing process of chain cutters, in process water treatment and in wastewater treatment process,
- Item 27, Lead – used as a manufacturing aid in process of manufacturing chain cutters,
- Item 30, Methanol (CAS 67-56-1) - used as a manufacturing aid in process of manufacturing chain cutters and bars,
- Item 203, Sodium Nitrite (CAS 7632-00-0) – used as a manufacturing aid in heat treatment process and coolant in cutter grind,
- Item 169, Nitrate Ion – by product of heat treatment process,
- Item 288, PM10 – non-toxic by product of combustion of natural gas, road dust and numerous activities, and
- Item 287, PM2.5 – non-toxic by product of combustion of natural gas, road dust and numerous activities.

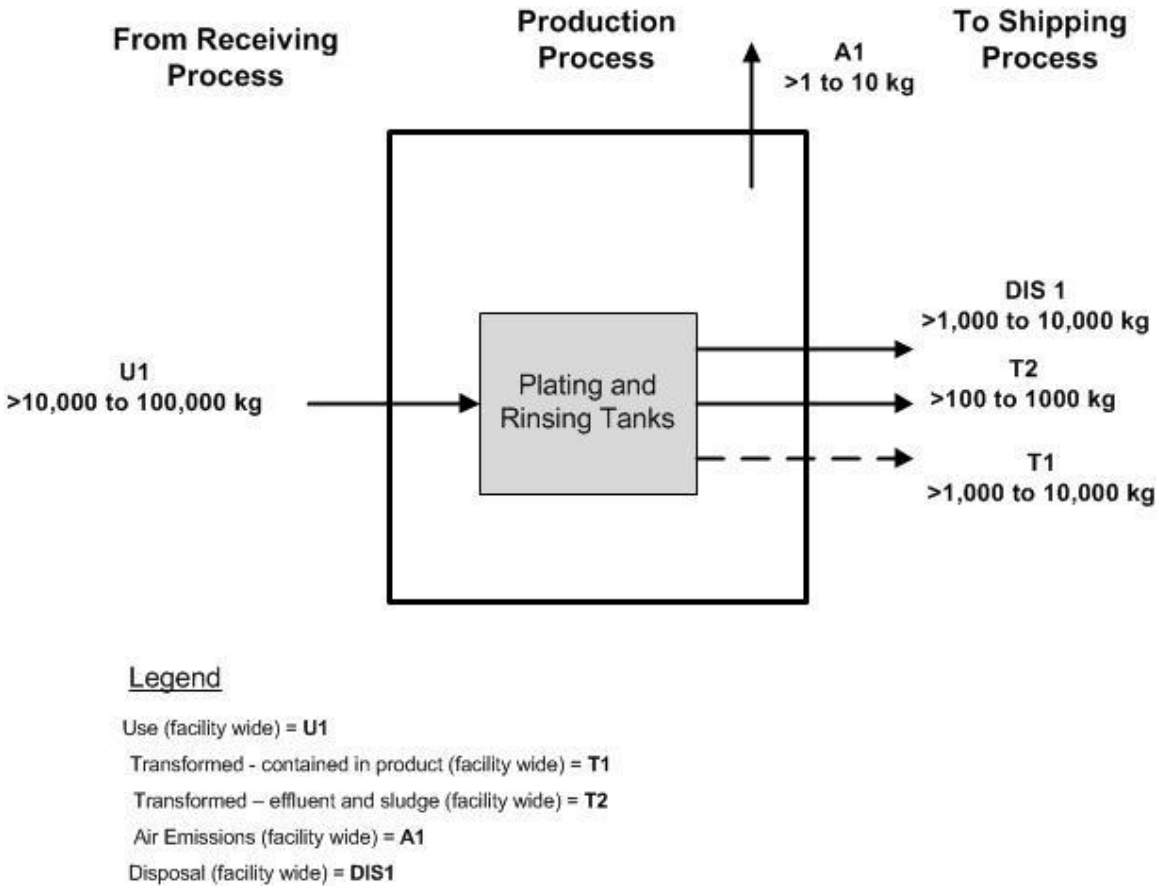
III. Tracing and Quantification of Reportable Toxic Substances

A. Hexavalent Chromium Compounds

This section contains all the components of hexavalent chromium accounting for chain manufacturing operation.

Figure A-1: Facility Wide Flow Diagram of Chain Manufacturing (describing Hexavalent Chromium).

2011



1. Description

At the ***receiving stage***, hexavalent chromium compounds are received in form of liquid plating compound (1135 L totes), dry chrome plating compound (50 kg drum), and chrome plating catalyst (20 L carboys). Chromium compounds (U1) are transferred via forklift to ***plating process*** of the ***production stage.*** The plating process consists of several plating and rinsing tanks where chromium from the compounds is plated onto steel parts.

Chromium compounds are converted to non-hazardous metallic form and permanently attached to metal parts. These parts are incorporated into a cutting chain (T1). The final product (cutting chain) enters the ***shipping process*** of the ***shipping stage***, where it is sent to various customers. Some chromium compounds from the plating process are discharged for treatment to onsite waste treatment facility (T2), or are classified as hazardous wastes and sent to disposal to a waste management facility (DIS1).

The emissions from the plating process are collected in a wet scrubber and treated in the onsite wastewater treatment. Any hexavalent chrome that is not retained by chrome scrubber is released as on-site air emissions. All air emissions are combined at the facility level (A1).

2. Tracing and Quantification

Amount That Enters The Process: U1 (chromium compounds that are entering the plating process from receiving process)

***Quantification Method*:**

Source-specific information (MSDS containing chromium concentration in, specific gravities, chemical formulas of, chromium plating and catalyst compounds).

Inventory records (quantities of chromium plating compounds and chromium catalyst used in 2011).

U1 Total amount of hexavalent chromium that enters the plating process in 2011 (kg): >10,000 to 100,000

Transformed Into Metal and Shipped With Product - T1: (contained in the product)

***Quantification Method*:**

Gravimetric testing of samples plated metal parts.

Production records indicating chain production rates.

T1 Total amount of hexavalent chromium transformed into metal and shipped as a product in 2011 (kg): >1,000 to 10,000

Transformed In Wastewater Treatment Facility To Trivalent Form Discharged With Effluent To Municipal Wastewater Treatment Plant Or Shipped With Sludge For Disposal- T2: (contained in the solids)

***Quantification Method*:**

Site-specific source testing of samples of sludge waste taken and analyzed by waste disposal company using Atomic Absorption Spectrometer.

Manifest records showing volumes of waste sludge shipped off-site.

Site-specific source testing of composite effluent samples taken and analyzed by Blount's Laboratory using Plasma Spectrometer.

Effluent volume records.

T2 Total amount of hexavalent chromium transformed into trivalent chrome and shipped or discharged from Waste Treatment Facility in 2011 (kg): >100 to 1000

Off-site Disposal Of Chrome Waste – DIS1: (facility wide level)

***Quantification Method*:**

Site-specific source testing of samples of bulk liquid hazardous waste taken and analyzed by waste disposal company using Atomic Absorption Spectrometer.

Manifest records showing volumes of waste shipped off-site.

DIS1: Total amount of chromium shipped for disposal in 2011 (kg): >1,000 to 10,000

On-site releases to Air: A1

***Quantification Method*:**

Site-specific source testing of lead in air emissions from scrubbers.

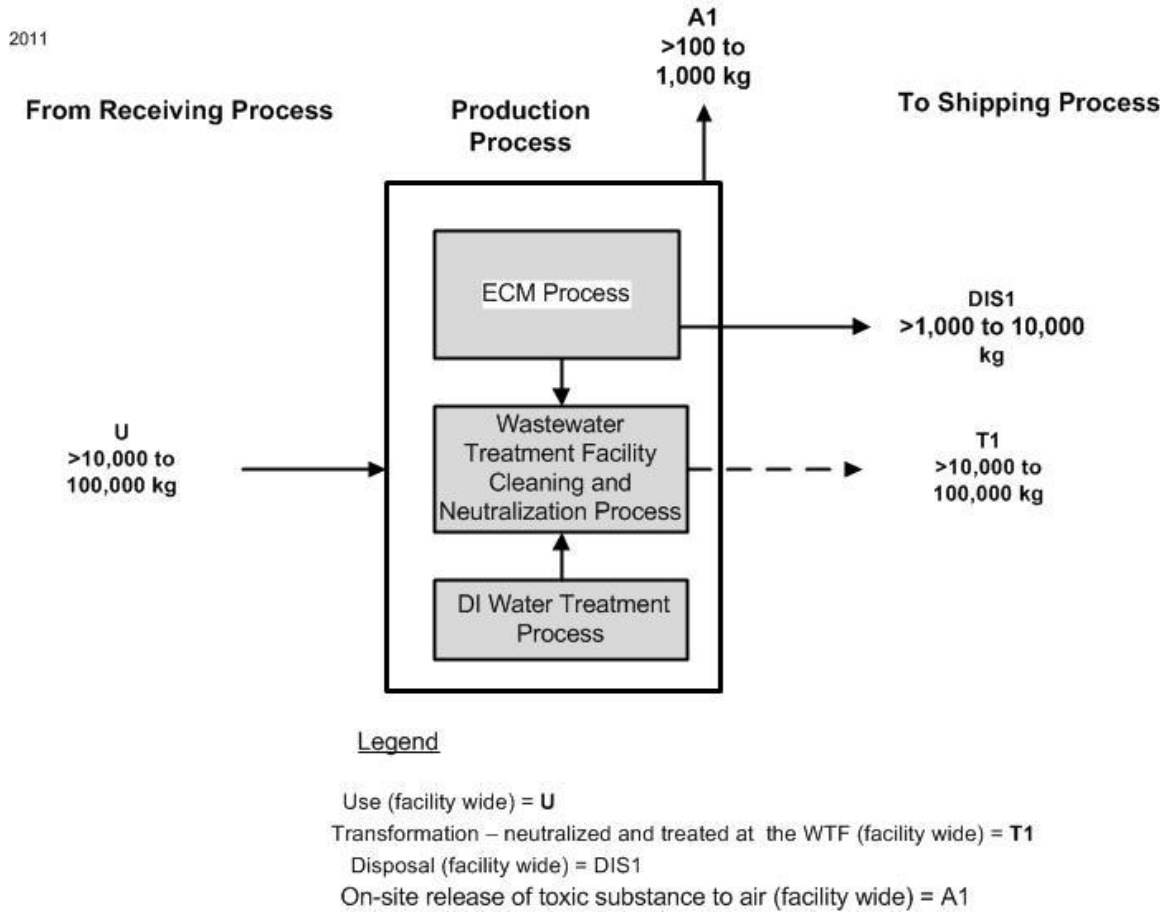
Maintenance records indicating scrubber operating hours.

A1 Total on-site hexavalent chrome emissions: >1 to 10kg

B. Hydrochloric Acid

This section contains all the components of hydrochloric acid accounting for chain manufacturing and plant operations.

Figure B-1: Facility Wide Flow Diagram of Chain Manufacturing and Plant Operations (describing Hydrochloric Acid).



1. Description

At the ***receiving stage***, hydrochloric acid is received in aqueous solution by a tanker and stored in a storage tank. Acid from storage tank is transferred via pipeline to **electro-chemical machining (**ECM) **process** of the **production stage** and to **Wastewater Treatment Facility** (WTF) for **DI water production** and **cleaning** (U).

The **ECM process** of the ***production stage*** consists of several processing and rinsing tanks where metal parts are etched in an acid solution. Effluent from ECM process is shipped to WTF for neutralization. The ECM process was decommissioned and replaced by a drum tumbler in September 2011. The **DI water treatment process** uses hydrochloric acid for regeneration of resin exchange beds. Wastewater from regeneration of ion exchange resins is neutralized in WTF. Small amount of hydrochloric acid is used in WTF for **cleaning and pH adjustment process**.

The emissions from the ECM process are collected in a wet scrubber and treated at the onsite wastewater treatment. Any acid that was not retained by the ECM scrubber is released as on-site air emissions (A1). The ECM scrubber was decommissioned together with the ECM line in September 2011.

At the **wastewater treatment process** of the ***shipping stage,*** neutralized effluent (T1) from Wastewater Treatment Facility is discharged to municipal STP. A small amount of spent hydrochloric acid sludge from the ECM process is disposed of in the shipping process (DIS1).

2. Tracing and Quantification

Amount That Enters The Process: U (hydrochloric acid that enters ECM process, DI water treatment process and WTF cleaning and pH adjustment process)

***Quantification Method*:**

Source-specific information (MSDS and specific gravities,)

Inventory records (quantities of hydrochloric acid used in 2011, equipment specifications and engineering estimates)

U Total amount of hydrochloric acid that enters the production process in 2011 (kg): >10,000 to 100,000

Disposed Off-site As ECM Sludge – DIS1: (contained in liquid hazardous waste - sludge)

***Quantification Method*:**

Site-specific source testing of samples of bulk liquid hazardous waste taken and analyzed by waste disposal company using Atomic Absorption Spectrometer.

Manifest records showing volumes of waste shipped off-site.

DIS1 Total amount of hydrochloric acid waste shipped for disposal in 2010 (kg): >1000 to 10,000

On-site Releases - Amount That is Released to Air: A1 (ECM scrubber stack releases)

***Quantification Method*:**

Site-specific source testing of hydrochloric acid in air emissions from ECM scrubber.

Maintenance records indicating scrubber operating hours.

A1 Total on-site hydrochloric acid emissions to air from ECM scrubber in 2011 (kg): >100 to 1,000

Transformed (neutralized) in Wastewater Treatment Facility To Ionic Form And Discharged With Effluent to Municipal Wastewater Treatment Plant For Disposal-T1: (contained in the effluent)

***Quantification Method*:**

Engineering calculations and mass balances

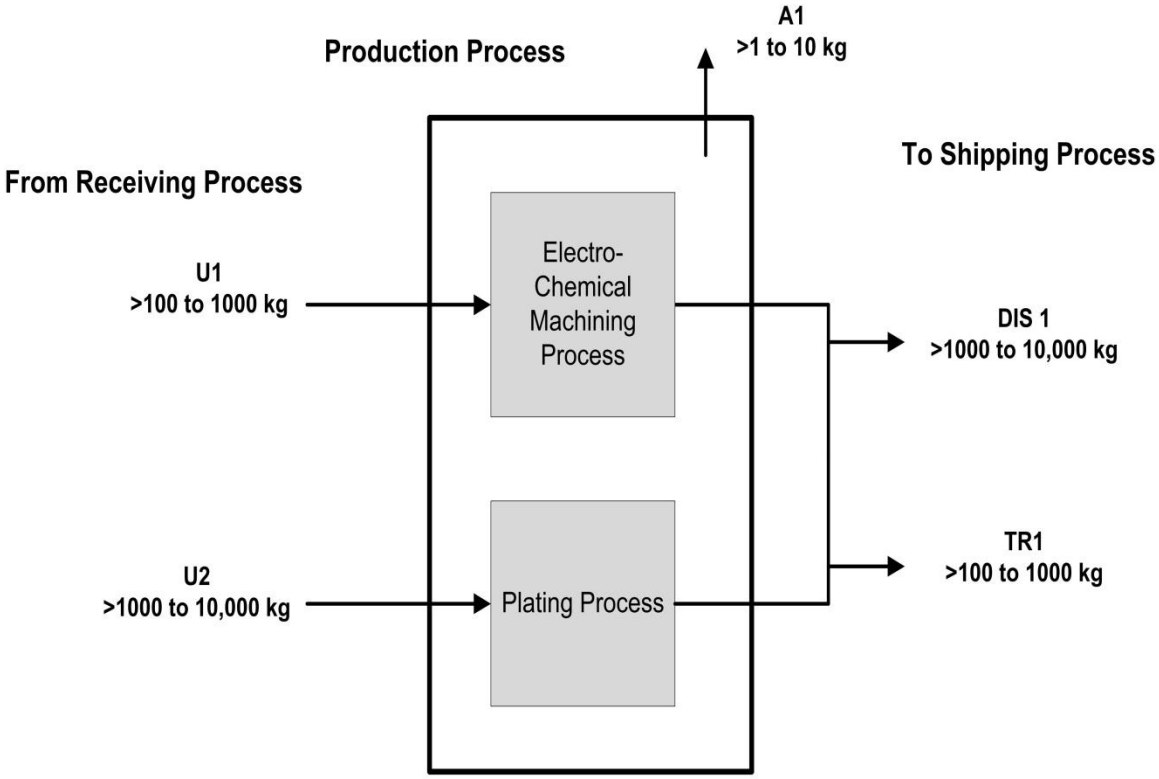
Effluent volume records.

T1 Total amount of hydrochloric acid transformed (neutralized) and discharged with effluent to Municipal Wastewater Treatment Plant in 2011 (kg): >10,000 to 100,000

C. Lead

This section contains all the components of lead accounting for chain manufacturing operation.

Figure C-1: Facility Wide Flow Diagram of Chain Manufacturing (describing Lead).



Legend

Use (facility wide) = **U1, U2**

Disposal (facility wide) = **DIS1**

Air Emissions (facility wide) = **A1**

Off-site Transfer for Recycling (facility wide) = **TR1**

1. Description

At the ***receiving stage***, lead is received in the form of pure metal as Electro-Chemical Machining (ECM) plates and plating anodes. Lead is used primarily in the hard chrome plating operation and **electro-chemical machining** (ECM) operation. Lead plates (U1) and lead anodes (U2) are transferred via forklift to **ECM** and **plating process** of the **production stage.**

The ECM process of the **production stage** consists of several processing and rinsing tanks where metal parts are etched in acid solution. Lead plates are used to transfer electrical current through the bath to the metal parts. The ECM process was decommissioned and replaced by a drum tumbler in September 2011. The plating process of the **production stage** consists of several plating and rinsing tanks where chromium from plating liquid is plated onto steel parts.

Plating anodes are used to transfer electrical current and plate chrome from chrome plating bath to metal parts. Over time, they are slowly dissolved in acid and in chrome solutions. A large portion of the lead is recycled as metal scrap when the anodes no longer function per specifications. (TR1). Lead plates and anodes are process aids not a part of the final product.

The final product (cutting chain) enters the **shipping process** of the **shipping stage**, where it is sent to various customers. The anodes are partially consumed during the process and contaminate the plating and ECM baths. Effluent from these baths is discharged to onsite waste treatment or are classified as hazardous wastes and sent to disposal to a waste management facility: Pb in liquid chrome waste, Pb in wastewater treatment sludge, Pb in effluent to municipal STP and Pb in chrome contaminated solids. All lead disposal streams were combined at the facility level into one stream (DIS1).

The emissions from ECM process and from plating process are collected in wet scrubbers and treated in onsite wastewater treatment. Any lead that was not retained by ECM and chrome scrubber is released as on-site air emissions. In addition, a very small amount of lead present naturally in natural gas is emitted during combustion in heating units and heat treatment equipment (A1).

2. Tracing and Quantification

Amount That Enters The Process: U1 (lead that is entering the ECM from receiving process)

***Quantification Method*:**

Source-specific information (MSDS of plates containing lead, specific gravities, alloy formulas of lead plates)

Inventory records (quantities of ECM lead plates used in 2011)

U1 Total amount of lead that enters the ECM Process in 2011 (kg): >100 to 1000

Amount That Enters The Process: U2 (lead that is entering the plating process from receiving process)

***Quantification Method*:**

Source-specific information (MSDS of plates containing lead, specific gravities, alloy formulas of lead plates)

Inventory records (quantities of Chrome lead plating anodes used in 2011)

U2 Total amount of lead that enters the chrome pure process in 2011 (kg): >1000 to 10,000

On-site Releases To Air: A1

***Quantification Method*:**

Site-specific source testing of lead in air emissions from scrubbers.

Maintenance records indicating scrubber operating hours.

EPA published Emission Factors for stationary equipment burning natural gas. .

Inventory records (quantities of natural gas used in 2011)

A1 Total on-site lead emissions: >1 to 10kg

Off-site Disposal Of Lead Containing Waste – DIS1

Site-specific source testing of samples of bulk liquid hazardous waste taken and analyzed by waste disposal company using Atomic Absorption Spectrometer.

Manifest records showing volumes of waste shipped off-site.

Site-specific source testing of composite effluent samples taken and analyzed by Blount's Laboratory using Plasma Spectrometer.

Effluent volume records.

Site-specific source testing of samples of chrome contaminated solid waste taken and analyzed by commercial lab and waste disposal company using Atomic Absorption Spectrometer. This was supplemented by an engineering estimation of chrome contamination.

DIS1: Total amount of lead in waste shipped for disposal in 2011 (kg): >1000 to 10,000

Off –site Transfer For Recycling - TR1: (for recycling)

***Quantification Method*:**

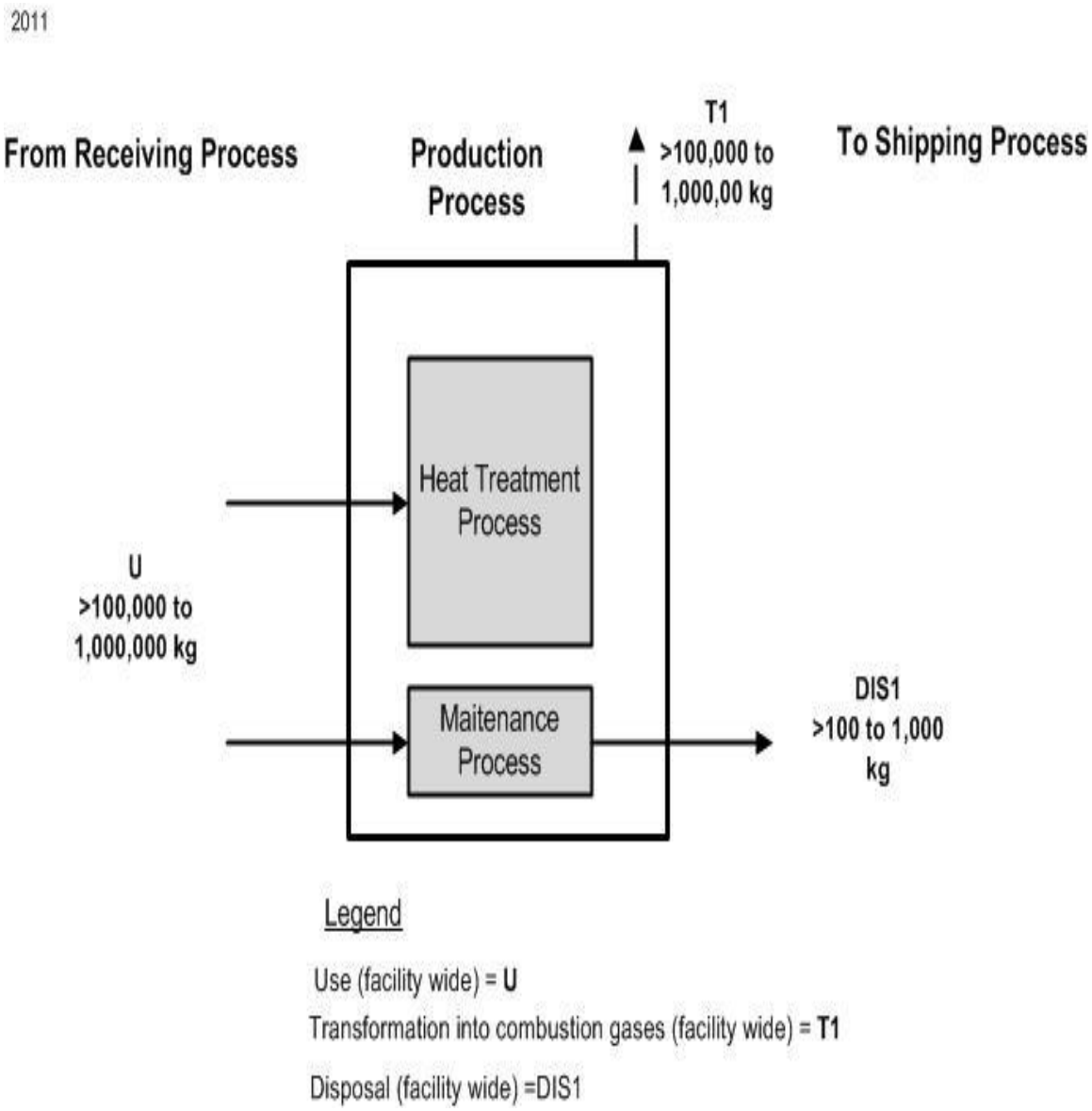
Record showing quantity of lead transferred off-site for recycling.

TR1 Total amount of lead transferred off-site for recycling in 2011 (kg): >100 to 1000

D. Methanol

This section contains all the components of methanol accounting for chain, bars and sprockets manufacturing operations.

Figure D-1: Facility Wide Flow Diagram of Chain, Bars and Sprockets Manufacturing (describing Methanol).



1. Description

At the ***receiving stage***, methanol is received by a tanker in liquid form and stored in a storage tank. Methanol is used together with nitrogen to provide carbon free atmosphere in the heat treatment furnaces. Methanol (U) is transferred via pipeline to heat treatment furnaces of the **production stage.**

At the **production stage** all methanol is consumed in heat treatment process and exhausted with combustion gasses (T1). The heat treatment process includes the following furnaces: Rotary #2, #3, #4 and #5 furnaces, Can-Eng. Furnace, AFC furnace and Holcroft/Selas furnace. Small amounts of methanol may escape into atmosphere during routine maintenance and material handling.

The final product heat treated parts goes for further processing in the **shipping stage**, before it is sent to various customers. There is no waste methanol that needs to be disposed of in the shipping process.

2. Tracing and Quantification

Amount That Enters The Process: U1 (methanol that is entering heat treatment process from receiving process)

***Quantification Method*:**

Source-specific information (MSDS of methanol and specific gravities,)

Inventory records, equipment manufacturer specifications and engineering estimates (quantities of methanol used in 2011)

U1 Total amount of methanol that entered the heat treatment process in 2011 (kg): >100,000 to 1,000,000

Transformed Into Combustion Gases And Exhausted Into Air - T1: (combusted during heat treatment process)

***Quantification Method*:**

Purchasing records and inventory records, equipment manufacturer specifications and engineering estimates (quantities of methanol used in 2011).

T1 Total amount of methanol transformed into combustion gases and exhausted into Air in 2010 (kg): >100,000 to 1,000,000

Off-site Disposal Of Methanol Waste – DIS1: (contained in liquid hazardous waste)

***Quantification Method*:**

Source-specific information (MSDS of methanol and specific gravities,)

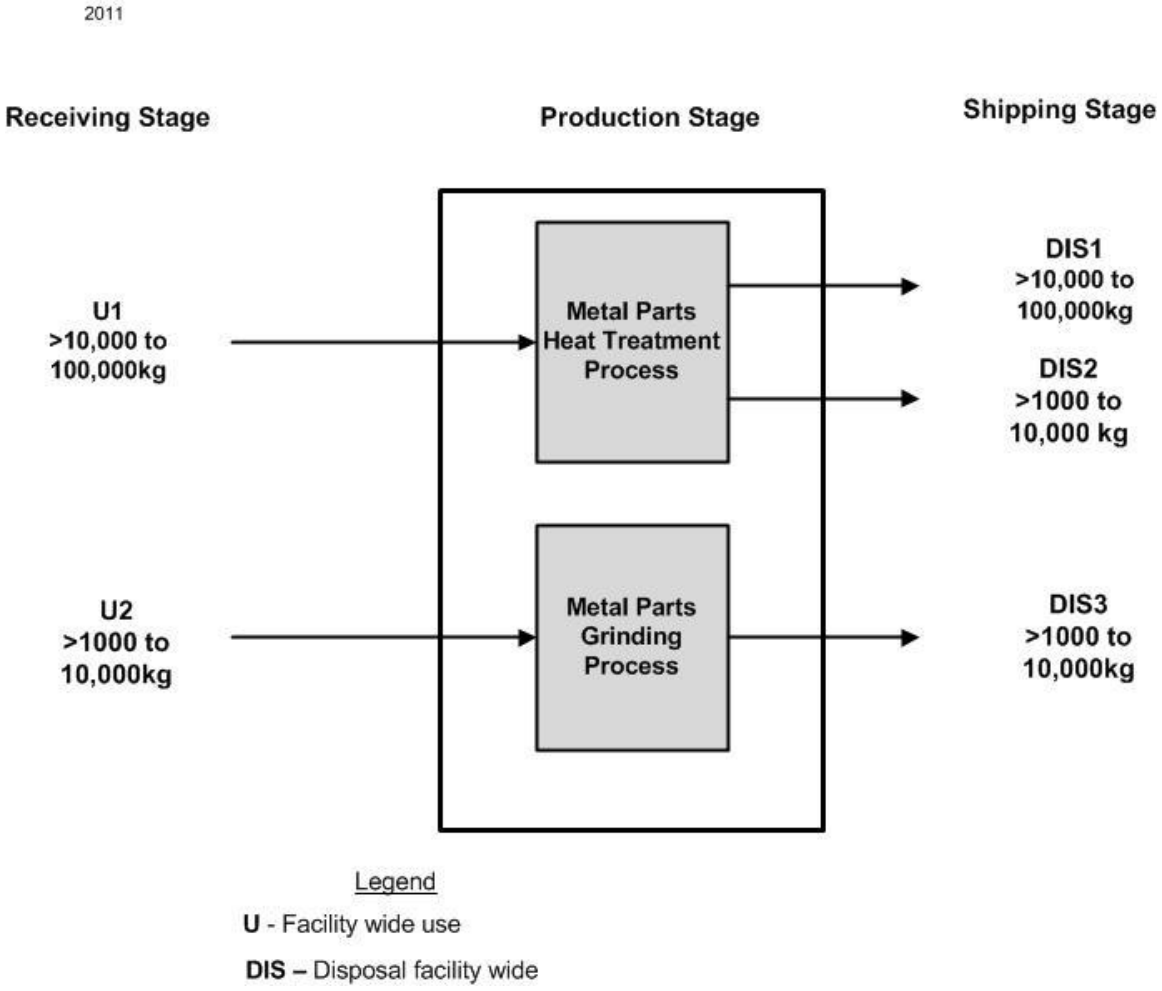
Manifest records showing volumes of waste shipped off-site.

DIS1: Total amount of methanol hazardous waste shipped for disposal in 2011 (kg): >100 to 1,000

E. Sodium Nitrite

This section contains all the components of sodium nitrite accounting for chain and bars manufacturing operations.

Figure E-1: Flow Diagram Showing Stages and Processes of Chain and Bars and Manufacturing (describing Sodium Nitrite).



1. Description

At the ***receiving stage***, sodium nitrite (U) is received by a truck in solid form as a part of formulation of Heat Treat Salt and in liquid form as a part of formulation of grinding coolant. Sodium nitrite in solid form (U1) is used a quench in the heat treatment furnaces

of the **production stage.** Sodium nitrite in liquid form (U2) is diluted with water and used as grinding coolant in cutter grinding operation of the **production stage.**

At the **production stage** most of **sodium nitrite** in Heat Treat Salt is used to quench metal parts and discharged in rinse water (DS1) for treatment at the Guelph Sewage Treatment Plant (STP). Small amount of sodium nitrite is disposed of as solid waste (DS2) at a hazardous waste disposal site. **Sodium nitrite** is also present in liquid form in grinding coolant formulation in cutter grinding operation. Most of sodium nitrite from this process leaved Blount either as a bulk liquid waste (none shipped in 2011) or as residue (DIS3) in the grinding swarf sent to a metal recycler.

The final product heat treated or grinded parts go for further processing in the **shipping stage**, before it is sent to various customers. **Sodium nitrite** in **shipping stage** is discharged in rinse water (DS1), disposed of as solid waste (DS2) or shipped as residue (DIS3) in the grinding swarf sent to a metal recycler.

2. Tracing and Quantification

Amount That Enters The Process: U1 (sodium nitrite that is entering the Heat Treat Process from receiving process)

***Quantification Method*:**

Source-specific information (MSDS of Heat Treat Salts and specific gravities,)

Inventory records, equipment manufacturer specifications and engineering estimates (quantities of Heat Treat Salts used in 2011)

U1 Total amount of sodium nitrite that enters heat treatment process in the in 2011(kg): >10,000 to 100,000

Amount That Enters The Process: U2 (sodium nitrite that is entering cutter grinding from receiving process)

***Quantification Method*:**

Source-specific information (MSDS of coolant and specific gravities,)

Inventory records, equipment manufacturer specifications and engineering estimates (quantities of sodium nitrite used in 2011)

U2 Total amount of sodium nitrite that enters cutter grinding process in 2011 (kg): >1,000 to 10,000

Off-site Disposal of Sodium Nitrite Discharged With Effluent to Municipal Wastewater Treatment Plant For Disposal – DIS1

***Quantification Method*:**

Engineering calculations and mass balances

Effluent volume records.

DIS1 Total amount of sodium nitrite discharged with effluent to Municipal Wastewater Treatment Plant in 2011 (kg): >10,000 to 100,000

Contained In Solidified Salt - Removed from Equipment during Routine Maintenance and Disposed Of At A Hazardous Waste Landfill - DIS2: (contained in the solids)

***Quantification Method*:**

Site-specific source testing of samples of salt waste taken and analyzed by waste disposal company using Atomic Absorption Spectrometer.

Manifest records showing volumes of waste salt shipped off-site.

DIS2 Total amount of sodium nitrite shipped with waste salt in 2011 (kg): 1,000 to 10,000

Contained In Grinding Swarf - Removed from Equipment During Routine Maintenance and Recycled with Scrap Steel – DIS3: (contained in the solids)

***Quantification Method*:**

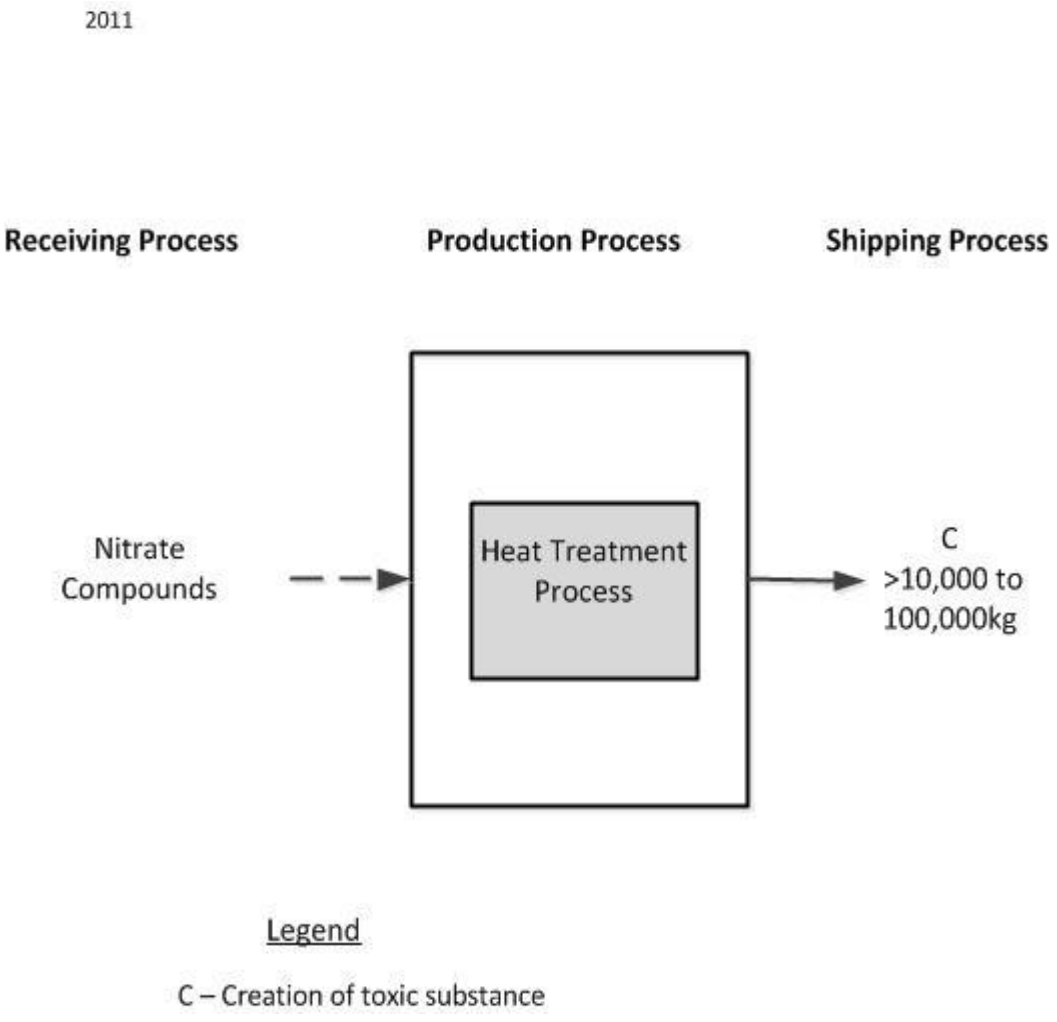
Shipping records showing volumes of swarf shipped off-site.

DIS3 Total amount of sodium nitrite shipped with swarf in 2011 (kg): >1,000 to 10,000

F. Nitrate Ion

This section contains all the components of nitrate ion accounting for chain and bars manufacturing operations.

Figure F-1: Flow Diagram Showing Stages and Processes of Chain and Bars and Manufacturing (describing Nitrate Ion).



1. Description

Nitrate ion is created (C) at the **production stage** during rinsing of Heat Treat salt of the quenched chain parts. The salt used in the quench in chain manufacturing contains

potassium and sodium nitrate. Nitrate ion is discharged in rinse water for treatment at the Guelph Sewage Treatment Plant (STP).

The final product heat treated parts go for further processing in the **shipping stage**, before it is sent to various customers.

2. Tracing and Quantification

Creation and Off-site Disposal of Nitrate Ion – C

***Quantification Method*:**

Engineering calculations and mass balances

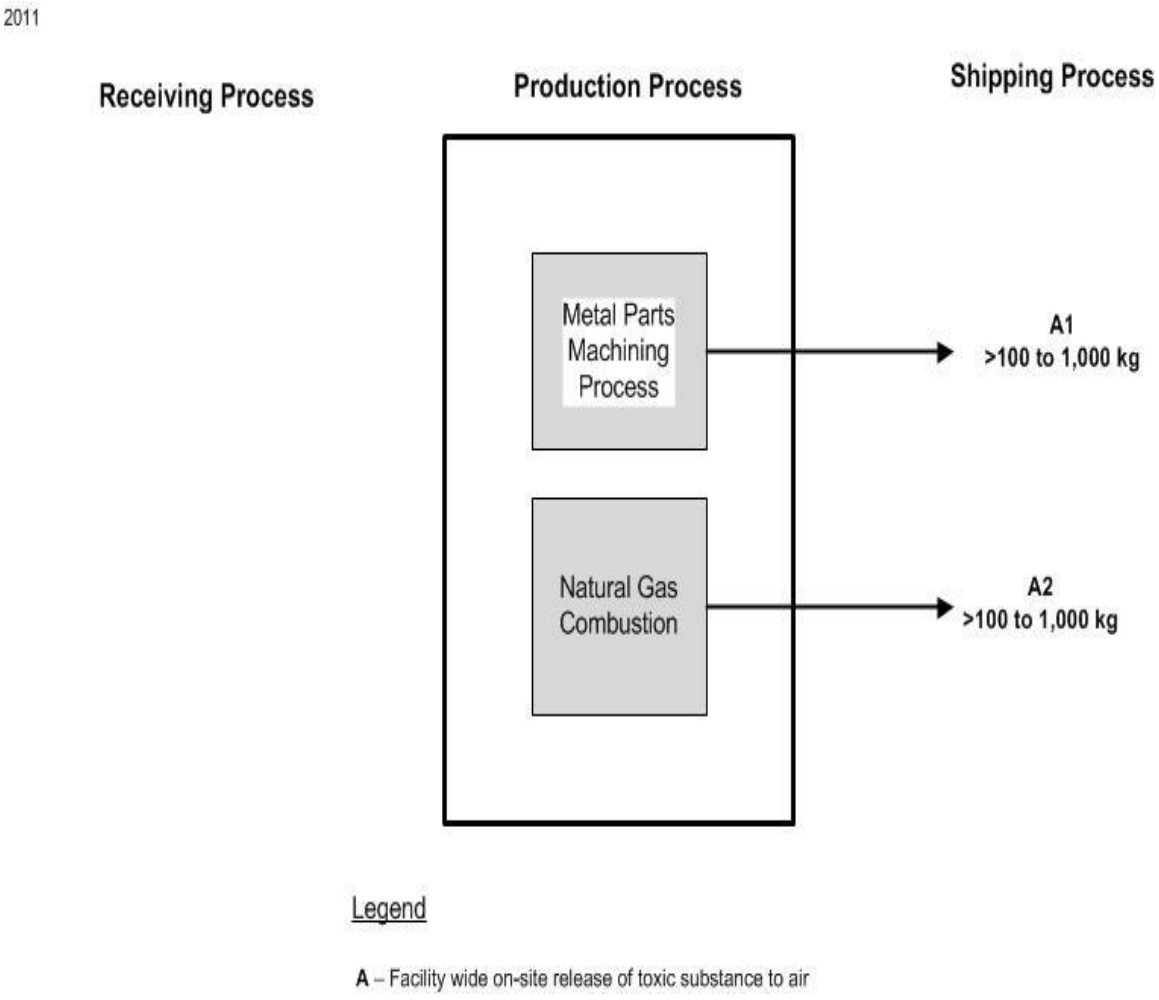
Effluent volume records.

C Total amount of nitrate ion discharged with effluent to Municipal Wastewater Treatment Plant in 2011 (kg): >10,000 to 100,000

G. PM 10

This section contains all the components of PM 10 accounting for building, chain and bars manufacturing operations.

Figure G-1: Flow Diagram Showing Stages and Processes of Chain and Bars and Manufacturing (describing PM 10).



1. Description

PM 10 is created (A1) at the **production stage** during machining of metal parts and combustion of natural gas (A2). Small amounts of PM10 are discharged into air with combustion gases and exhaust from pollution control equipment.

2. Tracing and Quantification

On-site releases - Amount That is Released to Air: A1 (Chrome scrubber and AAF dust collector)

***Quantification Method*:**

Site-specific source testing of PM10 in air emissions from Chrome scrubber and AAF dust collector.

Maintenance records indicating equipment operating hours.

A1 Total on-site PM10 emissions to air from Chrome scrubber and AAF dust collector in 2011 (kg): >100 to 1,000

On-site releases - Amount That is Released to Air: A2 (combustion of natural gas)

***Quantification Method*:**

EPA published Emission Factors for stationary equipment burning natural gas. .

Inventory records (quantities of natural gas used in 2011)

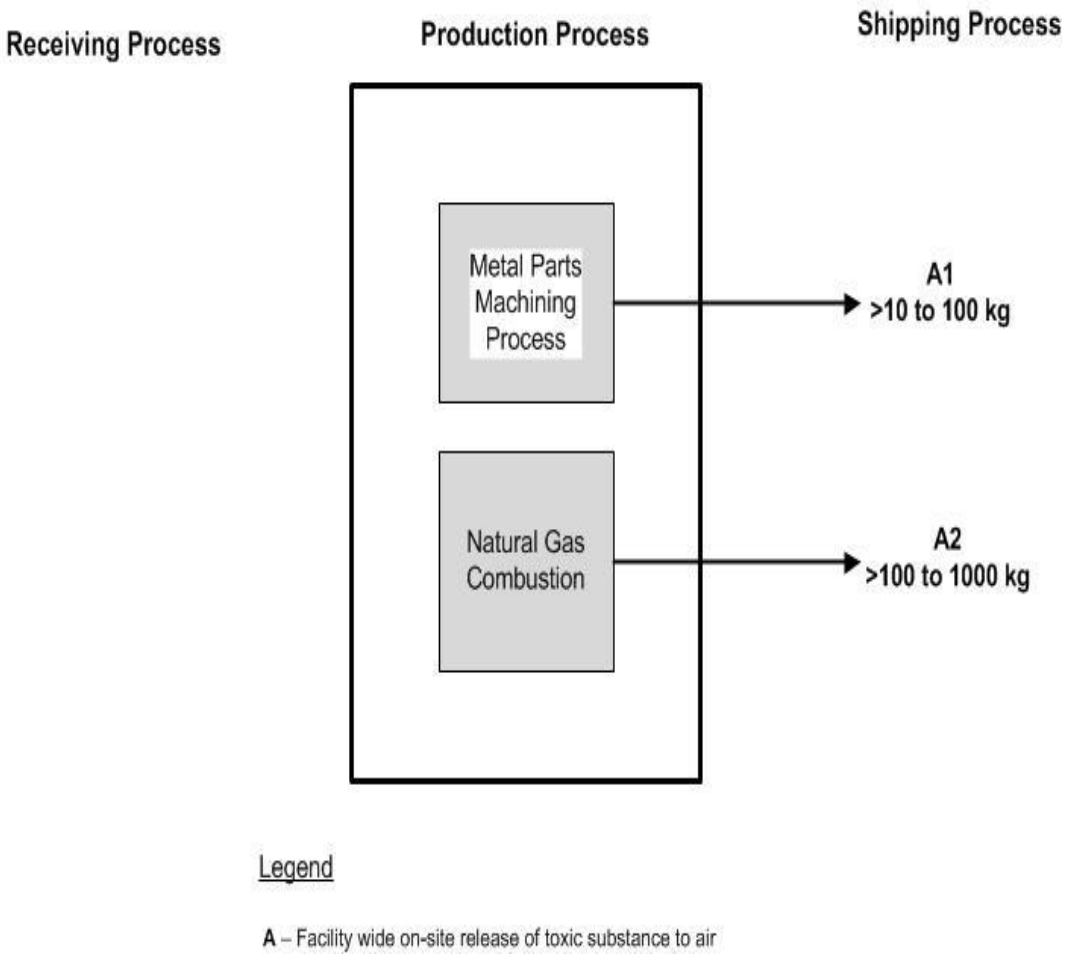
A2 Total on-site PM10 emissions to air from combustion of natural gas in 2011 (kg): >100 to 1,000

H. PM 2.5

This section contains all the components of PM 2.5 accounting for building, chain and bars manufacturing operations.

Figure H-1: Flow Diagram Showing Stages and Processes of Chain and Bars and Manufacturing (describing PM 2.5).

2011



1. Description

PM 2.5 is created (A1) at the **production stage** during machining of metal parts and combustion of natural gas (A2). Small amounts of PM2.5 are discharged into air with combustion gases and exhaust from pollution control equipment.

2. Tracing and Quantification

On-site releases - Amount That is Released to Air: A1 (Chrome scrubber and AAF dust collector)

***Quantification Method*:**

Site-specific source testing of PM10 in air emissions from Chrome scrubber and AAF dust collector.

Maintenance records indicating equipment operating hours.

A1 Total on-site PM2.5 emissions to air from Chrome scrubber and AAF dust collector in 2011 (kg): >10 to 100

On-site releases - Amount That is Released to Air: A2 (combustion of natural gas)

***Quantification Method*:**

EPA published Emission Factors for stationary equipment burning natural gas. .

Inventory records (quantities of natural gas used in 2011)

A2 Total on-site PM2.5 emissions to air from combustion of natural gas in 2011 (kg): >100 to 1,000

IV. Report Certification Statement

As of June ____, 2012, I certify that I have read the report on the toxic substance reduction plans for Hexavalent Chromium Compounds, Hydrochloric Acid, Lead, Methanol, Sodium Nitrite, Nitrate Ion, PM10 and PM2.5 and am familiar with its content and to my knowledge the information contained in the report is factually accurate and the report comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (general) made under the Act.

Edward John Lebrun, GM Blount Canada Ltd. Guelph	Date

Revision History

Revision Name	Revision Date	Description
2011	May 2012	Toxic accounting for 2011 – submitted in 2012