316 Orenda Road
Bramalea, Ontario, Canada
L6T 1G3

Toxic Substance Reduction Plan Summary

Phase I – Chemicals

In compliance with the Toxics Reduction Act (2009) and Ontario Regulation 455/09

INTRODUCTION:

TI Automotive Canada Inc. (TI Automotive) commits its integrated global resources exclusively to enable customers to differentiate their products, be competitive and more effectively meet regulatory requirements for performance, safety and emissions. Our innovative technology, a deep and broad product line, and commitment to the needs of our customers enables us to meet the highest standards for fuel economy, performance, safety and emissions for automotive fluid storage, carrying and delivery systems.

Founded in 1919 as Tube Investments Ltd., in Birmingham, England, TI Automotive has expanded its business steadily through a series of acquisitions and mergers.

Today, the innovative technology, processes and products of leading companies, including Bundy, Walbro and Marwal, are deeply integrated into TI Automotive.

TI Automotive prepared Toxic Substance Reduction Plans (TSRPs) for six Phase I chemicals used at our plant located at 316 Orenda Road, Bramalea, Ontario, based on the criteria set out in the Toxics Reduction Act, 2009 and Ontario Regulation 455/09. These substances are (in alphabetical order): Copper, Hexavalent Chromium, Hydrochloric Acid, Nickel, Sulphuric Acid, and Zinc.

Note: In 2012, Hexavalent Chromium was substituted at TI Automotive with Trivalent Chromium for use in the chrome-plating process. De minimis amounts of other Phase I chemicals were used in 2011, such as Arsenic and Lead in the plating process and Acetone and Acetylene Methyl Alcohol for laboratory testing. However, the amounts of these substances used were less than the threshold amounts required for National Pollutant Release Inventory (NPRI) reporting; therefore, it was not necessary to account and plan for these substances.

The main objective of these TSRPs is to evaluate options for reducing the use and creation of these prescribed toxic substances at the “front end” of the manufacturing process.

TI Automotive

BASIC FACILITY INFORMATION

Facility Identification and Site Address		
Company Name	TI Group Automotive Systems Canada	
Facility Name	TI Automotive Canada Incorporated	
Facility Address	Physical Address:	Mailing Address: (if different)
	316 Orenda Rd. Bramalea, ON, L6T 1G3	Same as physical address
Spatial Coordinates of Facility	Northing: 4839681, Easting: 604431, UTM Zone: 17T	
Number of Employees	72	
NPRI ID	70	
Ontario MOE ID Number	7382-4NPMZD	
Parent Company (PC) Information		
PC Name & Address **Percent Ownership for each PC**	Bain Capital, LLC 200 Clarendon Street Boston, MA 02116 United States 100%	
Business Number for PC		
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code **4 Digit NAICS Code** **6 Digit NAICS Code**	33 - Manufacturing 3363 - Motor Vehicle Parts Manufacturing 336340 - Vehicle Brake System Manufacturing	
Company Contact Information		
Facility Public Contact	Name, Title	Derek McDonald, Plant Manager
	Email	dmcdonald@ca.tiauto.com
	Phone	905 793-7100
	Fax	905 793-3626
Facility Technical Contact	Name, Title	Ajit Potnis, Engineering Manager
	Email	apotnis@ca.tiauto.com
	Phone	905 494-6916
	Fax	905 793-3626
	Name, Title	Ajit Potnis, Engineering Manager

TI Automotive

Company Coordinator Contact		
	Email	apotnis@ca.tiauto.com
	Phone	905 494-6916
	Fax	905 793-3626
Person who Prepared the Plan	Andrew A. Tymec	Dragun Corporation
	atymec@dragun.com	436 Elmstead Rd., RR1
	Phone: (519) 979-7300	Windsor, ON
	Fax: (519) 979-4455	N8N 2L9
Highest Ranking Employee	Name, Title	Derek McDonald, Plant Manager
	email	dmcdonald@ca.tiauto.com
	Phone	905 793-7100
	Fax	905 793-3626
Planner Information		
Planner Responsible for Making Recommendations	Andrew A. Tymec	
	Planner License No.	0220
	atymec@dragun.com	436 Elmstead Rd., RR1
	Phone: (519) 979-7300	Windsor, ON
	Fax: (519) 979-4455	N8N 2L9
Planner Responsible for Certification	Andrew A. Tymec, LTSRP #0220	Contact information if different from Planner Responsible for Making Recommendations
		N/A

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

PLAN SUMMARY - COPPER

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for copper, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of copper in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of copper at this facility. The technical and economical feasibility analyses for potential toxics reduction options for copper usage at TI Automotive resulted in the identification of zero potentially-feasible options at this time.
TI Automotive is, however, committed to ensuring copper is used in the most responsible and efficient manner.

DESCRIPTION OF SUBSTANCE

Inherent concentration of copper is contained in purchased/imported steel used for the manufacture of steel tubes.

TOXIC-SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

To reduce the use of copper in our tube manufacturing processes, TI Automotive has considered many options. However, no additional options could be identified that were both technically and economically-feasible at this time. Therefore, TI Automotive does not intend to reduce the use of copper.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

PLAN SUMMARY – HEXAVALENT CHROMIUM

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for hexavalent chromium, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of hexavalent chromium in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

Our goal is to eliminate:

- 100% of hexavalent chromium-containing solution introduced to the plating process
- 0.7% of hexavalent chromium disposed to hazardous waste
- 0.6% of hexavalent chromium recycled at an off-site facility
- 0.5% of hexavalent chromium from the finished product at our facility

The implementation plan for achieving this reduction goal is in progress.

DESCRIPTION OF SUBSTANCE

Hexavalent chromium is found in purchased steel and is used in a chromate bath on a plating line in the manufacture of steel tubes.

TOXIC-SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

The following option to reduce the use or release of hexavalent chromium has been identified:

- Substitute hexavalent chromium in the plating bath with trivalent chromium.

Hexavalent chromium reductions due to implementing this option are as follows:

Reduction Option: Substitute Hexavalent Chromium with Trivalent Chromium in Plating Bath									
Option(s)	**Used**	**Created**	**On-Site Releases**			**Disposal**		**Transfer Off-site for Recycling**	**Contained in Product**
			Air	**Water**	**Land**	**On-site**	**Off-site***		
Baseline	U_{tp}=1014.4 kg U_p=6.5 kg Total = 1020.9 kg	0 kg	0 kg	0 kg	0 kg	0 kg	MHC: 101.1 kg Wastewater: 0.3 kg	69.7 kg	1058.2 kg
Estimated Reduced Total	U_{tp}=1014.4 kg U_p=0 kg Total = 1014.4 kg	0 kg	0 kg	0 kg	0 kg	0 kg	MHC: 100.4 kg Wastewater: 0.3 kg	69.3 kg	1052.8 kg
Reduction	U_{tp} = 0 kg U_p = 6.5 kg	0 kg	0 kg	0 kg	0 kg	0 kg	MHC: 0.7 kg Wastewater: 0 kg	0.4 kg	6.6 kg
% Reduction	U_{tp} = 0.0% U_p = 100%	0.0%	0.0%	0.0%	0.0%	0.0%	MHC: 0.7% Wastewater: 0%	0.6%	0.5%

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes.
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

It is expected that these reductions are already in progress.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

PLAN SUMMARY – HYDROCHLORIC ACID

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for hydrochloric acid, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of hydrochloric acid in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of hydrochloric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for hydrochloric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at this time. TI Automotive is, however, committed to ensuring hydrochloric acid is used in the most responsible and efficient manner.

DESCRIPTION OF SUBSTANCE

Hydrochloric acid is used for cleaning steel, as a pre-plating step, for the manufacture of steel tubes.

TOXIC SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

To reduce the use of hydrochloric acid in our plating process, TI Automotive has considered many options. However, no additional options could be identified that were both technically and economically-feasible at this time. Therefore, TI Automotive does not intend to reduce the use of hydrochloric acid.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

PLAN SUMMARY - NICKEL

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for nickel, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of nickel in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of nickel at this facility. The technical and economical feasibility analyses for potential toxics reduction options for nickel usage at TI Automotive resulted in the identification of zero potentially-feasible options at this time.
TI Automotive is, however, committed to ensuring nickel is used in the most responsible and efficient manner.

DESCRIPTION OF SUBSTANCE

Inherent concentration of nickel is contained in purchased/imported steel used for the manufacture of steel tubes.

TOXIC-SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

To reduce the use of nickel in our tube manufacturing processes, TI Automotive has considered many options. However, no additional options could be identified that were both technically and economically-feasible at this time. Therefore, TI Automotive does not intend to reduce the use of nickel.

PLAN SUMMARY – SULPHURIC ACID

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for sulphuric acid, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of sulphuric acid in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of sulphuric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for sulphuric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at this time. TI Automotive is, however, committed to ensuring sulphuric acid is used in the most responsible and efficient manner.

DESCRIPTION OF SUBSTANCE

Sulphuric acid is used for cleaning steel, as a pre-plating step, for the manufacture of steel tubes.

TOXIC SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

To reduce the use of sulphuric acid in our plating process, TI Automotive has considered many options. However, no additional options could be identified that were both technically and economically feasible at this time. Therefore, TI Automotive does not intend to reduce the use of sulphuric acid.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

PLAN SUMMARY – ZINC

PLAN SUMMARY STATEMENT

This plan summary accurately reflects the content of the toxic substance reduction plan for zinc, prepared by Dragun Corporation, dated December 23, 2014.

STATEMENT OF INTENT

Commitment to environmental performance and prevention of pollution is reflected in the business objectives and commercial priorities of TI Automotive. TI Automotive encourages the conservation of resources through cooperation with local regulatory authorities and compliance with local regulatory requirements. Whenever feasible, we will eliminate, or reduce the use, creation, and discharge of zinc in full compliance with all Federal and Provincial regulations.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of zinc at this facility. The technical and economical feasibility analyses for potential toxics reduction options for zinc usage at
TI Automotive resulted in the identification of zero potentially-feasible options at this time.
TI Automotive is, however, committed to ensuring zinc is used in the most responsible and efficient manner.

DESCRIPTION OF SUBSTANCE

Zinc is used in an electroplating bath for the manufacture of steel tubes.

TOXIC-SUBSTANCE REDUCTION OPTION TO BE IMPLEMENTED

To reduce the use zinc in our plating process, TI Automotive has considered many options. However, no additional options could be identified that were both technically and economically feasible at this time. Therefore, TI Automotive does not intend to reduce the use of zinc.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

COPY OF CONFIRMATIONS

CONFIRMATION BY HIGHEST RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Copper

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Copper

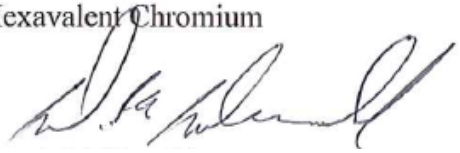
Andrew A. Tymec, Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
Dragun Corporation

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

CONFIRMATION BY HIGHEST-RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Hexavalent Chromium



Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Hexavalent Chromium

Andrew A. Tymec, Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
Dragun Corporation

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

CONFIRMATION BY HIGHEST-RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

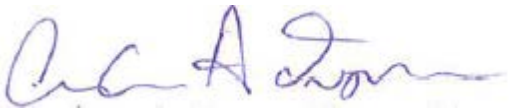
Hydrochloric Acid

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Hydrochloric Acid



Andrew A. Tymec, Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
Dragun Corporation

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

CONFIRMATION BY HIGHEST-RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Nickel

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Nickel

Andrew A. Tymec, Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
Dragun Corporation

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

CONFIRMATION BY HIGHEST-RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Sulphuric Acid

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Sulphuric Acid

Andrew A. Tymec, Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
Dragun Corporation

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

CONFIRMATION BY HIGHEST-RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including our engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, the time required for him to become familiar with our facility's operations was extensive and, in effect, our environmental compliance efforts in this matter were stalled. As of December 23, 2014, I, Derek McDonald, confirm that I have read the toxic substance reduction plan for the toxic substance referred to below and am familiar with its contents, and, to my knowledge, the plan is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Zinc

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

CONFIRMATION BY LICENSED PLANNER

As of December 23, 2014, I, Andrew A. Tymec, confirm that I am familiar with the processes at TI Automotive Canada Inc. that use or create the toxic substance referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv, and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plan dated December 23, 2014, and that, with the exception of the regulatory deadline, the plan complies with that Act and Ontario Regulation 455/09 (General) made under that Act.

Zinc

Andrew A. Tymec,Planner License #0220
Environmental Engineer/Toxic Substance Reduction Planner
The Dragun Corporation

Toxic Substance Reduction – Progress Reports: 2012

Copper

Facility-level quantification data for copper, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 1.

Table 1: Summary - Facility Level Quantifications for Copper		
Form of Involvement	**2011 Amount of Substance (kg)**	**2012 Amount of Substance (kg)**
Enters the facility (use):	235,640.1 kg	120,693 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	Wastewater: 3.73 kg	Wastewater: 21.14 kg
Transferred (for recycling) from the facility:	10,943.1 kg	10,451.0 kg
Contained in product that leaves the facility:	263,519.7 kg	110,221 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 1

The main reason for differences in reported quantities of copper used and contained in product in 2011 in comparison to 2012 is that Dragun was not provided 2012 data regarding steel tube production per process; since the amount of copper-containing materials carried over from 2011, and what remained in storage for use in 2013, was unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2012. The general change in annual production levels from 2011 to 2012 would also account for the variance in these quantities. The copper masses disposed with wastewater and transferred for recycling were within the expected range of variance for 2011 and 2012.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of copper at this facility. The technical and economical feasibility analyses for potential toxics reduction options for copper usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring copper is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for copper in 2012.

Hexavalent Chromium (Hex-Cr)

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hex-Cr, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 2.

Table 2: Summary - Facility Level Quantifications for Hex-Cr

Form of Involvement	2011 Amount of Substance (kg)	2012 Amount of Substance (kg)
Enters the facility (use):	U_{tp} = 1014.4 kg, U_p = 6.5 kg, total = 1020.9 kg	U_{tp} = 815.0 kg, U_p = 3.5 kg, total = 818.9 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	256.0 kg	154.3 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	MHC: 101.1 kg , Wastewater: 0.3 kg	MHC: 201.8 kg , Wastewater: 1.3 kg
Transferred (for recycling) from the facility:	69.7 kg	71.4 kg
Contained in product that leaves the facility:	1058.2 kg	544.4 kg

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

COMPARISON OF THE RESULTS PRESENTED IN TABLE 2

The reduced mass of hex-Cr used in steel strip is attributed to the expected general change in annual production level from 2011 to 2012. The reduced mass of hex-Cr used in the chromium plating bath can be attributed to the scheduled phase out of hex-Cr from plating processes at TI Automotive. The change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, and transferred for recycling were within the expected range of variance for 2011 and 2012. The main reason for

differences in reported quantities of hex-Cr contained in product in 2011 in comparison to 2012 is that Dragun was not provided 2012 data regarding steel tube production per process; since the amount of hex-Cr-containing materials carried over from 2011, and what remained in storage for use in 2013, was unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2012. The general change in annual production levels from 2011 to 2012 would also account for the variance in this quantity.

REDUCTION OBJECTIVES

TI Automotive's goal for Hex-Cr, as outlined in the current TSRP, is to eliminate:

- 100% of hexavalent chromium-containing solution introduced to the plating process
- 0.7% of hexavalent chromium disposed to hazardous waste
- 0.6% of hexavalent chromium recycled at an off-site facility
- 0.5% of hexavalent chromium from the finished product at TI Automotive

As of 2011, the implementation plan for achieving this reduction goal is in progress.

TOXIC-SUBSTANCE REDUCTION OPTION (IMPLEMENTED)

The following option to reduce the use or release of hexavalent chromium was identified in the current TSRP:

- Substitute hexavalent chromium in the plating bath with trivalent chromium

Hexavalent chromium reductions due to implementing this option are outlined in Table 3:

Table 3: Reduction Option - Substitute Hexavalent Chromium with Trivalent Chromium in Plating Bath

Option(s)	Used	Created	On-Site Releases			Disposal		Transfer Off-site for Recycling	Contained in Product
			Air	Water	Land	On-site	Off-site*		
2011 (Baseline)	U_{tp}=1014.4 kg U_p=6.5 kg Total = 1020.9 kg	0 kg	256.0 kg	0 kg	0 kg	0 kg	MHC: 101.1 kg Wastewater: 0.3 kg	69.7 kg	1058.2 kg
2012	U_{tp} = 815.0 kg U_p = 3.5 kg Total = 818.9 kg	0 kg	154.3 kg	0 kg	0 kg	0 kg	MHC: 201.8 kg Wastewater: 1.3 kg	71.4 kg	544.4 kg
Reduction	U_{tp} = -199.4 kg U_p = -3 kg	0 kg	-101.7 kg	0 kg	0 kg	0 kg	MHC: +100.7 kg Wastewater: +1.0 kg	+0.7 kg	-513.8 kg
% Reduction from baseline	U_{tp} = 19.7% U_p = 46%	0.0%	39.7 %	0.0%	0.0%	0.0%	MHC: No reduction Wastewater: No reduction	No reduction	48.6%

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

The current TSRP indicates that the solution containing hex-Cr used in the chromium plating bath would be phased out starting in 2012; this is evidenced by the 46% reduction in the hex-Cr U_p quantity. This reduction, along with the change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, and transferred for recycling were within the expected range of variance for 2011 and 2012. No additional actions were taken in 2012 to reduce the use, creation, discharge to air, land, or water of hex-Cr at TI Automotive. The steps taken in 2012 to reduce hex-Cr at TI Automotive are consistent with those outlined in the current TSRP. No amendments were made to the current toxic substance reduction plan for hex-Cr in 2012.

Hydrochloric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hydrochloric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 4.

Table 4: Summary - Facility Level Quantifications for Hydrochloric acid

Form of Involvement	2011 Amount of Substance (kg)	2012 Amount of Substance (kg)
Enters the facility (use):	11,703.3 kg	17,974.8 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	215.6 kg	277 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	11,487.7 kg	17,697.8 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 4

The general change in annual production levels from 2011 to 2012 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of hydrochloric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for hydrochloric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring hydrochloric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for hydrochloric acid in 2012.

Nickel

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for Nickel, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 5.

Table 5: Summary - Facility Level Quantifications for Nickel

Form of Involvement	2011 Amount of Substance (kg)	2012 Amount of Substance (kg)
Enters the facility (use):	42,708.8 kg	14,399 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	228.3 kg	154.0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	Wastewater: 0.8 kg	Wastewater: 4.0 kg
Transferred (for recycling) from the facility:	752.4 kg	2,150.0 kg
Contained in product that leaves the facility:	42,471.0 kg	12,092.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 5

The main reason for differences in reported quantities of nickel used and contained in product in 2011 in comparison to 2012 is that Dragun was not provided 2012 data regarding steel tube production per process; since the amount of materials containing nickel carried over from 2011, what remained in storage for use in 2013, and the quantities of imported tube for the plating process, were all unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2012. The general change in annual production levels from 2011 to 2012 would also account for the variance in these quantities. The nickel masses released to air and disposed with wastewater were within the expected range of variance for 2011 and 2012. The increased mass of nickel transferred for recycling is attributed to changes in specifications of equipment component longevity.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of nickel at this facility. The technical and economical feasibility analyses for potential toxics reduction options for nickel usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring nickel is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for nickel in 2012.

Sulphuric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for sulphuric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 6.

Table 6: Summary - Facility Level Quantifications for Sulphuric acid

Form of Involvement	2011 Amount of Substance (kg)	2012 Amount of Substance (kg)
Enters the facility (use):	32,510.0 kg	56,977.4 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	797.1 kg	1,024 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	31,712.9 kg	55,953.4 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 6

The general change in annual production levels from 2011 to 2012 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of sulphuric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for sulphuric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring sulphuric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2012.

TI Automotive

Zinc

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2011 and 2012, is outlined in Table 7.

Table 7: Summary - Facility Level Quantifications for Zinc		
Form of Involvement	**2011 Amount of Substance (kg)**	**2012 Amount of Substance (kg)**
Enters the facility (use):	104,407.2 kg	103,015 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	MHC: 10,514.4 kg , Wastewater: 8.5 kg	MHC: 20,983.0 kg , Wastewater: 189.0 kg
Transferred (for recycling) from the facility:	Zn Stubs: 5,670 kg Scrap: 2,764.1 kg	Zn Stubs: 5,922 kg Scrap: 5,901.0 kg
Contained in product that leaves the facility:	208,205.4 kg	70,020.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 7

The zinc masses entering the facility and transferred for recycling were within the expected range of variance for 2011 and 2012. The zinc masses disposed as metal hydroxide cake (MHC) and with wastewater increased due to the general change in annual production levels and minor changes to pollution prevention activities.

The main reason for differences in reported quantities of zinc contained in product in 2011 in comparison to 2012 is that Dragun was not provided 2012 data regarding steel tube production per process; since the amount of zinc-containing materials carried over from 2011, what remained in storage for use in 2013, and the quantities of imported

tube for the plating process, were all unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2012. The general change in annual production levels from 2011 to 2012 would also account for the variance in these quantities.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of zinc at this facility. The technical and economical feasibility analyses for potential toxics reduction options for zinc usage at
TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring zinc is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2012.

CONFIRMATION BY HIGHEST RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of June 1, 2015, I, Derek McDonald, confirm 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 that report and this annual progress report is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Copper, Hexavalent Chromium, Hydrochloric Acid, Nickel, Sulphuric Acid, and Zinc.

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

Toxic Substance Reduction – Progress Reports: 2013

Copper

Facility-level quantification data for copper, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 1.

Table 1: Summary - Facility Level Quantifications for Copper

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	120,693 kg	56,926 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	Wastewater: 21.14 kg	Wastewater: 32.47 kg
Transferred (for recycling) from the facility:	10,451.0 kg	3,467.0 kg
Contained in product that leaves the facility:	110,221 kg	53,452 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 1

The main reason for differences in reported quantities of copper used and contained in product in 2012 in comparison to 2013 is that Dragun was not provided 2012 or 2013 data regarding steel tube production per process; since the amount of materials containing copper carried over from 2012, and what remained in storage for use in 2014, was unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2013. The general change in annual production levels from 2012 to 2013 would also account for the variance in these quantities. The copper masses disposed with waste-

water and transferred for recycling were within the expected range of variance for 2012 and 2013.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of copper at this facility. The technical and economical feasibility analyses for potential toxics reduction options for copper usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring copper is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for copper in 2013.

Hexavalent Chromium (Hex-Cr)

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hex-Cr, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 2.

Table 2: Summary - Facility Level Quantifications for Hex-Cr

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	U_{tp} = 815.0 kg, U_p = 3.5 kg, total = 818.9 kg	U_{tp} = 774.0 kg, U_p = 0 kg, total = 774.0 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	154.3 kg	350.0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	MHC: 201.8 kg , Wastewater: 1.3 kg	MHC: 178.0 kg , Wastewater: 4.9 kg
Transferred (for recycling) from the facility:	71.4 kg	38.6 kg
Contained in product that leaves the facility:	544.4 kg	552.9 kg

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

COMPARISON OF THE RESULTS PRESENTED IN TABLE 2

The reduced mass of hex-Cr used in steel strip is attributed to the expected general change in annual production level from 2012 to 2013. The reduced mass of hex-Cr used in the chromium plating bath can be attributed to the scheduled phase out of hex-Cr from plating processes at TI Automotive. The change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, transferred for recycling, and contained in product were within the expected range of variance for 2012 and 2013. It should be noted that Dragun was not provided 2013 data regarding steel tube production per process; since the amount of hex-Cr-containing materials carried over

from 2012, and what remained in storage for use in 2014, was unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2013.

REDUCTION OBJECTIVES

TI Automotive's goal for Hex-Cr, as outlined in the current TSRP, is to eliminate:

- 100% of hexavalent chromium-containing solution introduced to the plating process
- 0.7% of hexavalent chromium disposed to hazardous waste
- 0.6% of hexavalent chromium recycled at an off-site facility
- 0.5% of hexavalent chromium from the finished product at TI Automotive

As of 2011, the implementation plan for achieving this reduction goal is in progress.

TOXIC-SUBSTANCE REDUCTION OPTION (IMPLEMENTED)

The following option to reduce the use or release of hexavalent chromium was identified in the current TSRP:

- Substitute hexavalent chromium in the plating bath with trivalent chromium

Hexavalent chromium reductions due to implementing this option are outlined in Table 3:

Table 3: Reduction Option - Substitute Hexavalent Chromium with Trivalent Chromium in Plating Bath

Option(s)	Used	Created	On-Site Releases			Disposal		Transfer Off-site for Recycling	Contained in Product
			Air	Water	Land	On-site	Off-site*		
2011 (Baseline)	U_{tp}=1014.4 kg U_p=6.5 kg Total = 1020.9 kg	0 kg	256.0 kg	0 kg	0 kg	0 kg	MHC: 101.1 kg Wastewater: 0.3 kg	69.7 kg	1058.2 kg
2012	U_{tp} = 815.0 kg U_p = 3.5 kg Total = 818.9 kg	0 kg	154.3 kg	0 kg	0 kg	0 kg	MHC: 201.8 kg Wastewater: 1.3 kg	71.4 kg	544.4 kg
2013	U_{tp} = 774.0 kg U_p = 0 kg total = 774.0 kg	0 kg	350.0 kg	0 kg	0 kg	0 kg	MHC: 178.0 kg Wastewater: 4.9 kg	38.6 kg	552.9 kg
Reduction (baseline to 2013)	U_{tp} = -240.4 kg U_p = -6.5 kg	0 kg	+94 kg	0 kg	0 kg	0 kg	MHC: +76.9 kg Wastewater: +4.6 kg	-31.1 kg	-505.3 kg
% Reduction from baseline	U_{tp} = 23.7% U_p = 100%	0%	No reduction	0%	0%	0%	MHC: No reduction Wastewater: No reduction	44.6%	47.8%

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

The current TSRP indicates that the solution containing hex-Cr used in the chromium plating bath would be phased out starting in 2012; in 2013, 100% reduction in the hex-Cr U_p quantity was achieved. This reduction, along with the change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, and transferred for recycling were within the expected range of variance for 2012 and 2013. No additional actions were taken in 2013 to reduce the use, creation, discharge to air, land, or water of hex-Cr at TI Automotive. The steps taken in 2013 to reduce hex-Cr at TI Automotive are consistent with those outlined in the current TSRP. No amendments were made to the current toxic substance reduction plan for hex-Cr in 2013.

Hydrochloric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hydrochloric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 4.

Table 4: Summary - Facility Level Quantifications for Hydrochloric acid

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	17,974.8 kg	15,434.4 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	277 kg	243 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	17,697.8 kg	15,191.4 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 4

The general change in annual production levels from 2012 to 2013 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of hydrochloric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for hydrochloric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring hydrochloric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for hydrochloric acid in 2013

Nickel

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for Nickel, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 5.

Table 5: Summary - Facility Level Quantifications for Nickel

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	14,399 kg	30,853 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	154.0 kg	350.0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	Wastewater: 4.0 kg	Wastewater: 7.0 kg
Transferred (for recycling) from the facility:	2,150.0 kg	2,000.0 kg
Contained in product that leaves the facility:	12,092.0 kg	28,497.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 5

Dragun was not provided 2013 data regarding steel tube production per process; since the amount of materials containing nickel carried over from 2012, what remained in storage for use in 2014, and the quantities of imported tube for the plating process were all unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2013. The general change in annual production levels from 2012 to 2013 accounts for the variance in quantities of nickel used and contained in final product. The nickel masses released to air, disposed with wastewater, and transferred for recycling were within the expected range of variance for 2012 and 2013.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of nickel at this facility. The technical and economical feasibility analyses for potential toxics reduction options for nickel usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring nickel is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for nickel in 2013.

Sulphuric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for sulphuric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 6.

Table 6: Summary - Facility Level Quantifications for Sulphuric acid

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	U: 56,977.4 kg	U: 52,560.8 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	1,024 kg	899 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	55,953.4 kg	51,661.8 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 6

The general change in annual production levels from 2012 to 2013 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of sulphuric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for sulphuric acid usage at TI Automotive resulted in the identification of zero

potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring sulphuric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2013.

TI Automotive

Zinc

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2012 and 2013, is outlined in Table 7.

Table 7: Summary - Facility Level Quantifications for Zinc

Form of Involvement	2012 Amount of Substance (kg)	2013 Amount of Substance (kg)
Enters the facility (use):	U: 103,015 kg	U: 103,015 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	MHC: 20,983.0 kg , Wastewater: 189.0 kg	MHC: 18,511.0 kg , Wastewater: 191.0 kg
Transferred (for recycling) from the facility:	Zn Stubs: 5,922 kg Scrap: 5,901.0 kg	Zn Stubs: 4,561 kg Scrap: 3,117.0 kg
Contained in product that leaves the facility:	P: 70,020.0 kg	P: 76,635.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 7

The zinc masses entering the facility, disposed as metal hydroxide cake (MHC) and with wastewater, transferred for recycling, and contained in product were within the expected range of variance for 2012 and 2013.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of zinc at this facility. The technical and economical feasibility analyses for potential toxics reduction options for zinc usage at TI Automotive resulted in the identification of zero potentially-feasible options at the

time of preparing the TSRP. TI Automotive is, however, committed to ensuring zinc is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2013.

CONFIRMATION BY HIGHEST RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of June 1, 2015, I, Derek McDonald, confirm 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 that report and this annual progress report is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Copper, Hexavalent Chromium, Hydrochloric Acid, Nickel, Sulphuric Acid, and Zinc.

Derek McDonald
Plant Manager
TI Automotive Canada Inc.

316 Orenda Road
Bramalea, Ontario Canada
L6T 1G3

Toxic Substance Reduction – Progress Reports: 2014

Copper

Facility-level quantification data, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 1.

Table 1: Summary - Facility Level Quantifications for Copper

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	U: 56,926 kg	U: 8,940 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	Wastewater: 32.47 kg	Wastewater: 27.0 kg
Transferred (for recycling) from the facility:	TR: 3,467.0 kg	TR: 912 kg
Contained in product that leaves the facility:	P: 53,452 kg	P: 8,002 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 1

Dragun assumed that the total steel tube processed is equal to the total steel purchased in 2014; this assumption may not accurately reflect the total copper actually used in 2014 as the amount of materials containing copper carried over from 2013, and what remained in storage for use in 2015, was unknown to Dragun at the time of writing this progress report. TI Automotive attributed the general change in annual production levels from 2013 to 2014 for the variance in the quantities presented in Table 1. The copper masses disposed with waste water, transferred for recycling, and contained in final product were within the expected range of variance for 2013 and 2014.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of copper at this facility. The technical and economical feasibility analyses for potential toxics reduction options for copper usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring copper is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for copper in 2014.

Hexavalent Chromium (Hex-Cr)

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hex-Cr, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 2.

Table 2: Summary - Facility Level Quantifications for Hex-Cr

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	Utp = 774.0 kg, Up = 0 kg, total = 774.0 kg	Utp = 423.0 kg, Up = 0 kg, total = 774.0 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	350.0 kg	326.0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	MHC: 178.0 kg, Wastewater: 4.9 kg	MHC: 219.0 kg, Wastewater: 3.0 kg
Transferred (for recycling) from the facility:	38.6 kg	33.0 kg
Contained in product that leaves the facility:	P: 552.9 kg	P: 167.7 kg

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

COMPARISON OF THE RESULTS PRESENTED IN TABLE 2

The reduced mass of hex-Cr used in steel strip is attributed to the expected general change in annual production level from 2013 to 2014. The reduced mass of hex-Cr used in the chromium plating bath can be attributed to the scheduled phase out of hex-Cr from plating processes at TI Automotive. The change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, transferred for recycling, and contained in product were within the expected range of variance for 2013 and 2014. It should be noted that Dragun was not provided 2014 data regarding steel tube

production per process; since the amount of materials containing hex-Cr carried over from 2013, and what remained in storage for use in 2015, was unknown to Dragun at the time of writing this progress report, Dragun assumes that the total steel tube processed is equal to the total steel purchased in 2014.

REDUCTION OBJECTIVES

TI Automotive's goal for Hex-Cr, as outlined in the current TSRP, is to eliminate:

- 100% of hexavalent chromium-containing solution introduced to the plating process
- 0.7% of hexavalent chromium disposed to hazardous waste
- 0.6% of hexavalent chromium recycled at an off-site facility
- 0.5% of hexavalent chromium from the finished product at TI Automotive

As of 2011, the implementation plan for achieving this reduction goal is in progress.

TOXIC-SUBSTANCE REDUCTION OPTION (IMPLEMENTED)

The following option to reduce the use or release of hexavalent chromium was identified in the current TSRP:

- Substitute hexavalent chromium in the plating bath with trivalent chromium

Hexavalent chromium reductions due to implementing this option are outlined in Table 3:

Table 3: Reduction Option - Substitute Hexavalent Chromium with Trivalent Chromium in Plating Bath

Option(s)	Used	Created	On-Site Releases			Disposal		Transfer Off-site for Recycling	Contained in Product
			Air	Water	Land	On-site	Off-site*		
2011 (Baseline)	U_{tp}=1014.4 kg U_p=6.5 kg Total = 1020.9 kg	0 kg	256.0 kg	0 kg	0 kg	0 kg	MHC: 101.1 kg Wastewater: 0.3 kg	69.7 kg	1058.2 kg
2012	U_{tp} = 815.0 kg U_p = 3.5 kg Total = 818.9 kg	0 kg	154.3 kg	0 kg	0 kg	0 kg	MHC: 201.8 kg Wastewater: 1.3 kg	71.4 kg	544.4 kg
2013	U_{tp} = 774.0 kg U_p = 0 kg total = 774.0 kg	0 kg	350.0 kg	0 kg	0 kg	0 kg	MHC: 178.0 kg Wastewater: 4.9 kg	38.6 kg	552.9 kg
Reduction (baseline to 2013)	U_{tp} = -240.4 kg U_p = -6.5 kg	0 kg	+94 kg	0 kg	0 kg	0 kg	MHC: +76.9 kg Wastewater: +4.6 kg	-31.1 kg	-505.3 kg
% Reduction from baseline	U_{tp} = 23.7% U_p = 100%	0%	No reduction	0%	0%	0%	MHC: No reduction Wastewater: No reduction	44.6%	47.8%

Table Notes: U_{tp} = Used steel strip and steel tube with hexavalent chromium within the six Tube-Production Processes
U_p = Used hexavalent chrome in a chromium plating bath within the Plating Process
MHC = Metal Hydroxide Cake (waste generated from on-site wastewater treatment process)
kg = kilograms

The current TSRP indicates that the solution containing hex-Cr used in the chromium plating bath would be phased out starting in 2012; in 2014, 100% reduction in the hex-Cr U_p quantity was achieved. This reduction, along with the change in masses of hex-Cr released to air, disposed at an off-site landfill and with wastewater, and transferred for recycling were within the expected range of variance for 2013 and 2014. No additional actions were taken in 2014 to reduce the use, creation, discharge to air, land, or water of hex-Cr at TI Automotive. The steps taken in 2014 to reduce hex-Cr at TI Automotive are consistent with those outlined in the current TSRP. No amendments were made to the current toxic substance reduction plan for hex-Cr in 2014.

Hydrochloric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for hydrochloric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 4.

Table 4: Summary - Facility Level Quantifications for Hydrochloric acid

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	U: 15,434.4 kg	U: 15,287.4 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	243 kg	283 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed (on site) by the facility:	0 kg	0 kg
Disposed (off site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	15,191.4 kg	15,004.4 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 4

The general change in annual production levels from 2013 to 2014 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of hydrochloric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for hydrochloric acid usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring hydrochloric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for hydrochloric acid in 2014.

Nickel

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for Nickel, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 5.

Table 5: Summary - Facility Level Quantifications for Nickel

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	U: 30,853 kg	U: 23,434 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	350.0 kg	326.0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	Wastewater: 7.0 kg	Wastewater: 5.0 kg
Transferred (for recycling) from the facility:	2,000.0 kg	1,889.0 kg
Contained in product that leaves the facility:	P: 28,497.0 kg	P: 21,215.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 5

Dragun assumed that the total steel tube processed is equal to the total steel purchased in 2014; this assumption may not accurately reflect the total nickel actually used in 2014 as the amount of materials containing nickel carried over from 2013, and what remained in storage for use in 2015, was unknown to Dragun at the time of writing this progress report. TI Automotive attributed the general change in annual production levels from 2013 to 2014 for the variance in the quantities presented in Table 1. The nickel masses disposed with waste water, transferred for recycling, and contained in final product were within the expected range of variance for 2013 and 2014.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of nickel at this facility. The technical and economical feasibility analyses for potential toxics reduction options for nickel usage at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring nickel is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for nickel in 2014.

Sulphuric Acid

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data for sulphuric acid, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 6.

Table 6: Summary - Facility Level Quantifications for Sulphuric acid

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	U: 52,560.8 kg	U: 59,922.7 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	899 kg	1,045 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	0 kg	0 kg
Transferred (for recycling) from the facility:	0 kg	0 kg
Contained in product that leaves the facility:	0 kg	0 kg
Destroyed by process(es) at the facility	51,661.8 kg	58,877.7 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 6

The general change in annual production levels from 2013 to 2014 accounts for the variance in the quantities used, released to air, and destroyed by processes at the facility.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of sulphuric acid used at this facility. The technical and economical feasibility analyses for potential toxics reduction options for sulphuric acid usage at TI Automotive resulted in the identification of zero

potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring sulphuric acid is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2014.

TI Automotive

Zinc

FACILITY-WIDE ACCOUNTING INFORMATION

Facility-level quantification data, determined as a result of the toxics substance accounting performed at TI Automotive for the years 2013 and 2014, is outlined in Table 7.

Table 7: Summary - Facility Level Quantifications for Zinc

Form of Involvement	2013 Amount of Substance (kg)	2014 Amount of Substance (kg)
Enters the facility (use):	U: 103,015.0 kg	U: 156,073.0 kg
Created at the facility:	0 kg	0 kg
Released (air) from the facility:	0 kg	0 kg
Released (land) from the facility:	0 kg	0 kg
Released (water) from the facility:	0 kg	0 kg
Disposed of (on-site) by the facility:	0 kg	0 kg
Disposed of (off-site) by the facility:	MHC: 18,511.0 kg, Wastewater: 191.0 kg	MHC: 22,817.0 kg, Wastewater: 197.0 kg
Transferred (for recycling) from the facility:	Zn Stubs: 4,561.0 kg Scrap: 3,117.0 kg	Zn Stubs: 1,336.0 kg Scrap: 2,458.0 kg
Contained in product that leaves the facility:	P: 76,635.0 kg	P: 129,265.0 kg

COMPARISON OF THE RESULTS PRESENTED IN TABLE 7

TI Automotive attributed the general change in annual production levels from 2013 to 2014 for the increased quantities of Zinc entering the facility and contained in product, as presented in Table 1. The zinc masses disposed as metal hydroxide cake (MHC), disposed with waste water, and transferred for recycling were within the expected range of variance for 2013 and 2014.

REDUCTION OBJECTIVES

TI Automotive does not intend to reduce the amount of zinc at this facility. The technical and economical feasibility analyses for potential toxics reduction options for zinc usage

at TI Automotive resulted in the identification of zero potentially-feasible options at the time of preparing the TSRP. TI Automotive is, however, committed to ensuring zinc is used in the most responsible and efficient manner. No amendments were made to the current toxic substance reduction plan for sulphuric acid in 2013.

CONFIRMATION BY HIGHEST RANKING EMPLOYEE

In August 2012, we at TI Automotive experienced a significant turnover in personnel, including the engineering manager responsible for our compliance efforts to meet the deadlines set out in the Toxics Reduction Act and Ontario Regulation 455/09. TI Automotive has since replaced the engineering manager; however, he required time to become familiar with our facility's operations and, as a result, our environmental compliance efforts in this matter were stalled. As of January 15, 2016, I, Derek McDonald, confirm 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 that report and this annual progress report is factually accurate and, with the exception of the regulatory deadline, complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

Copper, Hexavalent Chromium, Hydrochloric Acid, Nickel, Sulphuric Acid, and Zinc.

Derek McDonald
Plant Manager
TI Automotive Canada Inc.