

REPORT ON TOXIC SUBSTANCE REDUCTION PLANS (JUNE 2014)

This Report on Toxic Substance Reduction Plans has been prepared in accordance with, and satisfies the requirements of Section 10 of the *Toxics Reduction Act* (TRA) and Section 27 of Ontario Regulation (O.Reg.) 455/09 for all TRA toxic substances for which Toxic Substance Reduction Plans have been prepared to date.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number, if any	This Report on Toxic Substance Reduction Plans applies to the Toxic Substance Reduction Plans for the following prescribed Toxic Substances: Chromium, Copper, Lead, Manganese, Nickel, Zinc⁽¹⁾ (Per O.Reg.455/09; "no single CAS numbers apply to these substances")
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 011434 O.Reg.127/01 ID: N/A
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Cam Tran Co. Ltd. 203 & 209 Purdy Road P.O. Box 866 Colborne, ON K0K 1S0
The number of full time employee equivalents at the facility	140
North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	33 - Manufacturing 3262 - Electrical Equipment Manufacturing 335311 – Power, Distribution and Specialty Transformers Manufacturing
Public contact	Dave Reinhardus Director of Mechanical and Industrial Engineering Cam Tran Co. Ltd. 203 & 209 Purdy Road P.O. Box 866 Colborne, ON K0K 1S0 905-355-3224 x506
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 271117 E 4879371 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Chromium*

Copper*

Lead*

Manganese*

Nickel*

Zinc^{*(1)}

*Per O.Reg. 455/09, “no single CAS numbers apply to these substances”

⁽¹⁾ The TRA plan for zinc was completed retroactively in 2016.

Toxic Substance Accounting Information

Refer to Appendix A: TRA Toxic Substance Quantification and Accounting Summary for the information required under s.12(1) of O.Reg.455/09.

Comparison of Toxic Substance Accounting to the Previous Calendar Year

Refer to Appendix B: Comparison of Toxic Substance Quantification and Accounting to the Previous Calendar Year for the information required by s.26(2) of O.Reg.455/09.

Changes in Quantification Methods

There were no changes made to any quantification methods since the preparation of the Toxic Substance accounting information for the previous calendar year and therefore no changes outlined in the above comparison occurred due to changes in quantification methods.

Objectives of Toxic Substance Reduction Plans

Refer to Appendix C: Plan Summaries which contains objectives of the respective Toxic Substance Reduction Plans covered by this Report, as required by s.26(2)3 of O.Reg. 455/09.

Toxic Substance Reduction Options Identified in Toxic Substance Reduction Plans

As outlined in the Plan Summaries attached in Appendix C, Facility personnel had arrived at two options in the ‘product design or reformulation’ category. The Facility intended to implement both these options between January and December of 2013.

However, during 2013 the Facility had little progress with Option 1 and Option 2, due to restrictions with existing customer contracts and delays with software development.

Therefore, the Facility intends to introduce Option 2 in the following year (2014) and compare it with existing design methods to determine accuracy.

As a result, there were no significant reductions due to the implementation of reduction options during the 2013 reporting year.

Amendments to Toxic Substance Reduction Plans

No Amendments have been made to any Toxic Substance Reduction Plans.

Confirmation Statement

As of April 5 2016 I confirm that I have read the Report on the toxic substance reduction plans for the substances listed below and am familiar with its content and to my knowledge the information contained in the Report is factually accurate and the Report complies with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under the Act.

Chromium*

Copper*


Lead*

Manganese*

Nickel*

Zinc*

*Per O.Reg. 455/09, "no single CAS numbers apply to these substances"



Kyle Campbell
President

April 5 2016

date

APPENDIX A: TRA TOXIC SUBSTANCE QUANTIFICATION AND ACCOUNTING SUMMARY

TRA Toxic Substance Quantification and Accounting Summary

Toxic Substance	CAS No.	Public Reportable Values			
		Unit	Use	Creation	Contained in Product
Chromium	NA-4	tonnes	>10 to 100	>0 to 1	>10 to 100
Copper	NA-6	tonnes	>100 to 1,000	>0 to 1	>100 to 1,000
Lead	NA-8	kg	>1,000 to 10,000	>0 to 1	>1,000 to 10,000
Manganese	NA-9	tonnes	>10 to 100	>0 to 1	>10 to 100
Nickel	NA-10	tonnes	>10 to 100	>0 to 1	>10 to 100
Zinc	NA-14	tonnes	>10 to 100	>0 to 1	>10 to 100

**APPENDIX B: COMPARISON OF TOXIC SUBSTANCE QUANTIFICATION AND ACCOUNTING TO
THE PREVIOUS CALENDAR YEAR**

TRA Quantification, Accounting and Reporting Comparison

The table below provides a comparison between the three TRA reportable activity quantities for each substance (Use, Creation, Contained in Product) for the current and previous year. The TRA requires a comment in the SWIM report for increases or decreases in these activities as compared to the previous year and therefore the comment provided on the column on the far right of each table should be provided within SWIM.

USE

Toxic Substance	CAS	Reporting Units	Change in Reported Value from the Previous Year	% Change	Comment if Change +/- 10%
Chromium	NA-4	tonnes	6.436	23%	Increased usage of steel and stainless steel
Copper	NA-6	tonnes	-637.912	-49%	Large reduction in usage of copper alloys
Lead	NA-8	kg	-42,523.643	-87%	Large reduction in usage of copper alloys (9% lead) and aluminum alloys (0.7% lead)
Manganese	NA-9	tonnes	7.383	18%	New manganese-containing product with high usage (aluminium rolls), and inclusion of carbon steel welding wire in estimation (had not been included in previous year)
Nickel	NA-10	tonnes	-134.933	-75%	Reduced usage of nickel-containing copper and aluminium alloys and stainless steel
Zinc	NA-14	tonnes	-154.629	-85%	Large reduction in usage of copper alloys (34% zinc) and aluminum alloys (8% zinc)

CREATION

Toxic Substance	CAS*	Reporting Units	Change in Reported Value from the Previous Year	% Change	Comment if Change +/- 10%
Chromium	NA-4	tonnes	0.000	—	—
Copper	NA-6	tonnes	0.000	—	—
Lead	NA-8	kg	0.000	—	—
Manganese	NA-9	tonnes	0.000	—	—
Nickel	NA-10	tonnes	0.000	—	—
Zinc	NA-14	tonnes	-163.260	-100%	Zinc is not created at the Facility. The quantity reported in the previous year is the amount contained in products, which was erroneously reported as a "creation".

CONTAINED IN PRODUCT

Toxic Substance	CAS*	Reporting Units	Change in Reported Value from the Previous Year	% Change	Comment if Change +/- 10%
Chromium	NA-4	tonnes	5.041	22%	Increased usage of steel and stainless steel
Copper	NA-6	tonnes	-653.055	-52%	Large reduction in usage of copper alloys
Lead	NA-8	kg	-38,432.259	-88%	Large reduction in usage of copper alloys (9% lead) and aluminum alloys (0.7% lead)
Manganese	NA-9	tonnes	5.686	17%	New manganese-containing product with high usage (aluminium rolls), and inclusion of carbon steel welding wire in estimation (had not been included in previous year)
Nickel	NA-10	tonnes	-122.370	-77%	Reduced usage of nickel-containing copper and aluminium alloys and stainless steel
Zinc	NA-14	tonnes	-139.724	-86%	Large reduction in usage of copper alloys (34% zinc) and aluminum alloys (8% zinc)

APPENDIX C: PLAN SUMMARIES

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the Toxics Reduction Act and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation 455/09. This plan summary accurately reflects the content of the plans for chromium, copper, lead, manganese, and nickel.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number, if any	This Plan Summary applies to the following prescribed toxic substances: Chromium, Copper, Lead, Manganese, Nickel [Per O.Reg. 455/09; "no single CAS numbers apply to these substances"]
NPRI and O.Reg.127/01 Identification Numbers	NPRI ID: 011434 O.Reg.127/01 ID: N/A
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Cam Tran Co. Ltd. 203 & 209 Purdy Road, P.O. Box 866 Colborne, ON K0K 1S0
The number of full time employee equivalents at the facility	90
NAICS codes and the six-digit NAICS Canada code	33 – Manufacturing 3262 – Electrical Equipment Manufacturing 335311 - Power, Distribution and Specialty Transformers Manufacturing
Public contact	Dave Reinhardus Director of Mechanical and Industrial Engineering Cam Tran Co. Ltd. - 203 & 209 Purdy Road, P.O. Box 866 Colborne, ON, K0K 1S0 905-355-3224 x506
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 18T 268040 E, 4878370 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Chromium*
Copper*
Lead*
Manganese*
Nickel*

*Per O.Reg. 455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

Cam Tran's goal is to provide quality products with industry leading service and lead times. In doing so, Cam Tran also strives to set an example for environmental leadership by offering customers opportunities to reduce waste by reusing and recycling major transformer and switchgear components. Previously manufactured components may be able to be refurbished and returned to operable states which reduces waste to landfills and increases the efficiency of materials usage.

The objectives of the Toxics Reduction Act align well with Cam Tran's commitment to minimize the impact of operations and products on the environment. Cam Tran intends to reduce the use of toxic materials proportional to production (i.e. on a per-unit basis) at the Facility through the implementation of measures that are technically and economically feasible and do not compromise the ability for Cam Tran to sustainably provide the goods and services required by clients.

Objectives of the Toxic Substance Reduction Plan

The Objectives of the Plan are as follows:

- To evaluate potential options for the reduction in use of toxic materials currently found at the Facility and establish a path forward that includes at least one feasible reduction option;
- To identify technological or financial roadblocks preventing further toxics reduction which may be overcome in the future; and,
- Document how the Facility has fulfilled the applicable requirements under the TRA and O. Reg. 455/09 with respect to each Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

Raw materials containing toxics that are used at the Facility include copper wire and bars (containing copper), mild steel (containing chromium, copper, lead, manganese and nickel), stainless steel (containing chromium, copper, manganese and nickel), aluminum alloys (containing chromium, copper, lead, manganese and nickel), and steel shot (containing manganese). Every toxic material is contained within the structure of the raw materials and is considered integral to the desired physical properties of the raw materials.

Steel and stainless steel are the main components used to manufacture transformer tanks due to their strength and durability. Aluminum and copper wire and bars are utilized as conductors and manufactured to form the coils (wound wire) and conducting plates (bars for electrical connections) in the transformers. The physical properties of these materials, including their strength and/or conductivity are essential to the performance of the final products.

No toxic substances are created at the Facility.

Description of Toxic Substance Reduction Options to be Implemented

Facility personnel have considered each of the seven categories for toxic substance reduction options and have arrived at two options in the 'product design or reformulation' category that will be implemented.

Facility production and management staff have identified potential efficiency gains related to the reduction of steel in large transformer tanks and the reduction of copper or aluminum wire in transformer coils. Each of these options require the implementation of new technology to allow for the redesign of large transformers and transformer coils and the implementation of the new designs in production.

It is estimated that the implementation of product redesign efforts around large transformers will result in an annual decrease of toxic substances contained in final products of the following amounts:

Toxic Material	Mass of Toxic Reduction	Percentage Toxics Reduction
Chromium	0.207 tonnes	0.9%
Copper	0.122 tonnes	0.03%
Lead	42.7 kg	0.9%
Manganese	0.268 tonnes	0.5%
Nickel	0.256 tonnes	0.9%

Similarly, the annual decrease in the amount of toxic substances contained in final products resulting from the implementation of product redesign efforts around transformer coils are estimated to be the following:

Toxic Material	Mass of Toxic Reduction	Percentage Toxic Reduction
Chromium	0.0268 tonnes	0.1%
Copper	16.215 tonnes	3.5%
Lead	26.8 kg	0.5%
Manganese	0.0268 tonnes	0.05%
Nickel	0.0268 tonnes	0.09%

These values are specific to production levels and customer requirements in 2011 only, however are considered to be the best available estimates of expected toxics reduction resulting from the implementation of the reduction options.

It is expected that the implementation of these toxics reduction options will occur between January and December, 2013, with the estimated toxics reduction being first wholly realized (for a full year of operation after the implementation of the options) in December 2014.

Planner License Number

As required by s.18(2) of O. Reg. 455/09 (as amended by s. 9(2) of O. Reg. 214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Jonathan Michael Fabro
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0189

Copies of the Certification

Certification statements are provided in the following page.

TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the Toxics Reduction Act and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation 455/09. This plan summary accurately reflects the content of the plan for Zinc.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number, if any	This Plan Summary applies to the following prescribed toxic substances: Zinc [Per O.Reg. 455/09; "no single CAS numbers apply to this substance"]
NPRI and O.Reg.127/01 Identification Numbers	NPRI ID: 011434
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Cam Tran Co. Ltd. 203 & 209 Purdy Road, P.O. Box 866 Colborne, ON K0K 1S0
The number of full time employee equivalents at the facility	110
NAICS codes and the six-digit NAICS Canada code	33 – Manufacturing 3262 – Electrical Equipment Manufacturing 335311 - Power, Distribution and Specialty Transformers Manufacturing
Public contact	Craig Hoskin OEE Leader Cam Tran Co. Ltd. – 203 & 209 Purdy Road, P.O. Box 866 Colborne, ON K0K 1S0 905-355-3224 x562
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 18T 268040 E, 4878370 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared an additional Toxic Substance Reduction Plan for the following prescribed Toxic Substance as first time reporting was completed in 2012:

Zinc*

This is in addition the previously prepared plans for:

Chromium*

Copper*

Lead*

Manganese*

Nickel*

*Per O.Reg. 455/09, "no single CAS numbers apply to these substances"

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement.

A statement of the Facility's intent to reduce the "use" of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance cannot be "created" in the Facility process and therefore no statement with respect to intent to reduce the creation of the Toxic Substance is required.

The activity that has been classified as a "use" of the Toxic Substance for the purpose of the required TRA Quantification, Accounting and Reporting exercise for the Toxic Substance is the use of copper wire and bars, and use of aluminum alloys which contain the Toxic Substance. The Toxic Substance is contained within the structure of these raw materials and is considered integral to the desired physical properties of the raw materials. Therefore the use of the Toxic Substance can only be reduced by reducing the Facility's usage of these raw materials.

Cam Tran has already reduced the use of raw materials containing toxic substances (which includes zinc, in addition to chromium, copper, lead, manganese and nickel) proportional to production (i.e. on a per-unit basis) at the Facility through the implementation of reduction options, which are described in detail in the Facility's Master Document Supporting Various Toxic Substance Reduction Plans, Version 1.0, December 2012 (Master Plan), Sections 8.0 and 9.0. Briefly, these options included:

- Manufacturing custom-sized tanks as opposed to using stock sizes; and
- Utilizing new design software to create more efficient transformer coils.

Therefore, the Facility is of the opinion that it has previously optimized its control of the use and subsequent release of the Toxic Substance to the greatest extent that can reasonably be expected, and therefore a statement of the Facility's intent to reduce "use" of the Toxic Substance has not been included as part of this Plan.

Objectives of the Toxic Substance Reduction Plan

This Toxics Substance Reduction Plan (Plan) has three objectives:

- provide the reader with information on measures already implemented at the Facility which control the "use" and subsequent release of the Toxic Substance;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how the Facility has fulfilled the applicable requirements under the TRA and O. Reg. 455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

The processes at the Facility are organized into stages beginning with materials receiving, manufacturing of transformer tanks (Preparation Stage), cleaning and painting of tanks (Production Stage 1), manufacture of coils and transformer assembly (Production Stage 2), and a shipping stage. Raw materials containing the Toxic Substance that are used at the Facility include copper and aluminum alloy bars. The Toxic Substance is contained within the structure of the raw materials and is considered integral to the desired physical properties of the raw materials.

All raw materials are received from suppliers and stored indoors. Aluminum and copper alloys are utilized as conductors and manufactured (through cutting and welding) to form the conducting plates (bars for electrical connections) in the transformers. The physical properties of these materials, including their strength and/or conductivity are essential to the performance of the final products.

Steel shot is used in the painting preparation stage to scarify the surface of metals to improve paint adhesion and long term paint performance. The welding of steel and stainless steel creates an oxide layer which cannot be effectively chemically pre-treated to increase paint adhesion, so the mechanical shot blasting method is used instead.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O. Reg. 455/09 (as amended by s.9(3) of O. Reg. 214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

In light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no additional toxic substance reduction options can be identified in any of the seven toxic substance reduction categories. The Facility is of the opinion that it has previously optimized its control of the use and subsequent release of the Toxic Substance to the greatest extent that can reasonably be expected.

Therefore, the rationale for not implementing toxic substance reduction options is that no additional toxic substance reduction options could be identified.

Planner License Number

As required by s.18(2) of O. Reg. 455/09 (as amended by s. 9(2) of O. Reg. 214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

James McEvoy, P.Eng.
Air Quality Engineer
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0288

Copies of the Certification

As required by s.4(2) of the Toxics Reduction Act (TRA), Toxic Substance Reduction Plans must contain a certification, signed by the highest ranking employee at the Facility who has management responsibilities relating to the Facility. As per Ministry of the Environment and Climate Change guidance, in the event that Plans are submitted after the regulatory deadline, a modified statement mirroring the standard certification statement but acknowledging the lack of compliance with the regulatory deadline must be included.

The Confirmation Statements fulfilling these requirements are provided on the next page.