



GUIDE TO REPORTING TO THE TOXICS REDUCTION ACT, 2009 AND ITS REGULATIONS

OFIEC members include:



This project is an initiative of Growing Forward, a federal-provincial-territorial initiative.



DISCLAIMER:

While determined efforts have been made to ensure the accuracy of this Guide, the information and recommendations presented herein are based on simplified interpretation of the intent of the complex regulatory requirements made pursuant to the Toxics Reduction Act, 2009 and its Regulations. Consequently, the Alliance of Ontario Food Processors, the Ontario Food Industry Environmental Coalition, and AMEC Earth & Environmental cannot assume any responsibility for the omissions, errors or changes of its contents and/or consequences whatsoever arising from the use of this Guide. The Alliance of Ontario Food Processors, the Ontario Food Industry Environmental Coalition, and AMEC Earth & Environmental expressly disclaim the making of any representation, express or implied, with respect to the information published herein. In all cases, any person involved with reporting to the Toxics Reduction Act, 2009 and its Regulations is solely responsible to ensure compliance with the Act and its Regulations and should refer to the full text of the Act and Regulations.

Prepared and written by:



For technical assistance, please contact: Ms. Connie Lum, AMEC Earth & Environmental
900 Maple Grove Road, Unit 10, Cambridge, Ontario N3H 4R7, Tel: 519.650.7136 Fax: 519.653.6554 connie.lum@amec.com

INTRODUCTION

This guide aims to help you understand your responsibilities under the new Toxics Reduction Act and its regulation (Ontario Regulation 455/09, referred as “the regulation” in this guide) within the food and beverage processing and primary input supply industries. This guide aims to help you determine if you must prepare a Toxic Substance Reduction Plan and, if so, what you need to track, quantify, and report to the provincial government. You will also find references to useful tools and resources throughout this guide.

Step 1: Determine if the regulation applies to your facility.

Step 2: Tracking and quantifying regulated substances.

Step 3: Develop a Toxic Substance Reduction Plan for each substance.

Step 4: Requirements of summaries of Toxic Reduction Plan(s).

What is the Toxics Reduction Act, 2009?

The provincial government introduced the Toxics Reduction Act in 2009 and the regulation in January 2010. The goal is to help protect our health and environment by reducing toxic substances in the air, land, water, and consumer products.

How does the regulation affect the food and beverage processors and primary input suppliers in Ontario?

All manufacturing facilities in the food/beverage processing industry and input supply sector under the North American Industry Classification System (NAICS) code starting with “311” and “312” need to determine if they meet the criteria to report. The same criteria are used for Environment Canada’s National Pollutant Release Inventory (NPRI), as well as from the Ontario Environmental Protection Act’s Ontario Regulation 127/01 (O.Reg 127) for Acetone.

Which toxic substances are regulated under the regulation?

All of the 347 substances listed on the federal National Pollutant Release Inventory (NPRI) are identified in the regulation. In addition to the NPRI substances, acetone is also identified as a toxic substance reportable under O.Reg. 127. For a complete list of the NPRI substances, check out [Environment Canada’s NPRI website](#).

The regulation is coming into effect in phases. Out of the 347 substances, 47 are considered as **Phase 1 Priority Substances**. The priority substances are listed in [Table A](#) of the regulation. The remainder of the substances listed on the NPRI, plus acetone are identified as toxic substances for Phase 2, with tracking and quantification requirements starting in 2012.



Track and quantify the toxic substances that you use and create to develop plans to reduce these substances.

What are the requirements?

Beginning in 2010, manufacturers of food or beverage products and primary input suppliers are required to:

- ❖ Track and quantify the toxic substances that are used, created, contained in product, released, disposed of, and/or transferred;
- ❖ Develop plans to reduce the toxic substances that are used or created; and
- ❖ Write a summary for each reduction plan and make available to the public.

The [regulation](#) outlines the rules for tracking, quantifying, planning and reporting, as well as the timelines for these activities.

When are the reports due?

The government is extending the deadline to submit plan summaries for the priority substances by one year from the original deadline of December 31, 2011 to December 31, 2012. The June 1st accounting report date remains unchanged. The specific submission requirements are listed below.

Phase 1	Deadlines
<i>Tracking & Quantification of 47 Priority Substances</i>	Jan. 1-Dec. 31, 2010
<i>First Toxics Reduction Report (2010 data)</i>	Annual, beginning June 1, 2011
<i>Toxic Substance Reduction Plans & Plan Summaries</i>	December 31, 2012*
Phase 2	
<i>Tracking & Quantification of 347 Substances</i>	Jan. 1-Dec. 31, 2012
<i>Toxics Reduction Report (2012 data)</i>	Annual, beginning June 1, 2013
<i>Toxic Substance Reduction Plans & Plan Summaries</i>	December 31, 2013*
Review of Plans	
<i>First Review of ALL Plans</i>	2018
<i>Reviews of Plans</i>	Every 5 years after 2018
<i>* Requires to be completed one time with review/update of plan every 5 years</i>	

Who can certify the Toxic Substance Reduction Plans?

The qualification requirement for the licensed toxic substance planner is still under review. It's been proposed that only a person licensed by the government would be allowed to certify a Toxic Substance Reduction Plan. Licences would be required for renewal every 5 years. Licensed planners would be required to make recommendations and provide rationale for those recommendations. The highest ranking employee at your facility is also required to confirm knowledge of the toxic substance plan by certifying the plan. While a facility employee could become a licensed planner, this employee cannot also be the highest ranking employee.

STEP 1: IS YOUR FACILITY REQUIRED TO REPORT?

The regulation uses the same reporting criteria as the NPRI. If you reported to the NPRI in previous years, the requirement to track, report, and develop toxic reduction plans apply to your facility.

You can do a quick check using the criteria checklist on the right to determine if your facility is required to track, quantify, and report. It is your responsibility to review that all criteria are met. Refer to the [Guide for Reporting to the National Pollutant Release Inventory \(NPRI\) 2009](#). Substances listed in Parts 1, 4, and, 5 of the NPRI substance list typically apply to food and beverage manufacturers. However, Part 4 substances are not listed as priority substances and therefore, tracking and quantifying these substances are not required until Phase 2 comes into effect.

Acetone must be reported if more than 3 tonnes are used and employees worked 20,000 hours per year (equivalent to approximately 10 full-time employees). Again, it is your responsibility to review that the criteria are met. Refer to [Ontario Regulation 127/01, Airborne Contaminant Discharge Monitoring and Reporting](#) for more details.

If your facility meets the reporting criteria, but does not use or create any of the 47 substances listed as a priority substance, then your facility is not required to track, quantify and report for the year 2010. If your facility uses or creates any of the 347 NPRI substances, then your facility will be expected to

✓ QUICK CRITERIA CHECK

Do you meet any of the following criteria?

	Yes	No
<i>Did employees at your facility work a total of 20,000 hours or more in the calendar year?</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Is a toxic substance from the priority substance list used or created at your facility?</i>	<input type="checkbox"/>	<input type="checkbox"/>
For substances listed in NPRI Part 1:		
<i>Is the total concentration of a substance $\geq 1\%$?</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Is the total quantity of a substance ≥ 10 tonnes?</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Are any of the toxic substances used as a by-product at any concentration ≥ 10 tonnes?</i>	<input type="checkbox"/>	<input type="checkbox"/>
For substances listed in NPRI Part 5:		
<i>Were total VOC releases to air ≥ 10 tonnes?</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Were any individual VOC species released in a quantity ≥ 1 tonne?</i>	<input type="checkbox"/>	<input type="checkbox"/>

If you answered yes to all of the above, then your facility is required to track, quantify, and prepare (a) toxic substance reduction plan(s) for each priority substance used or created at your facility. Proceed to Step 2 of this guide.

track, quantify and report for toxic substances used beginning in 2012 with reporting deadlines in 2013.

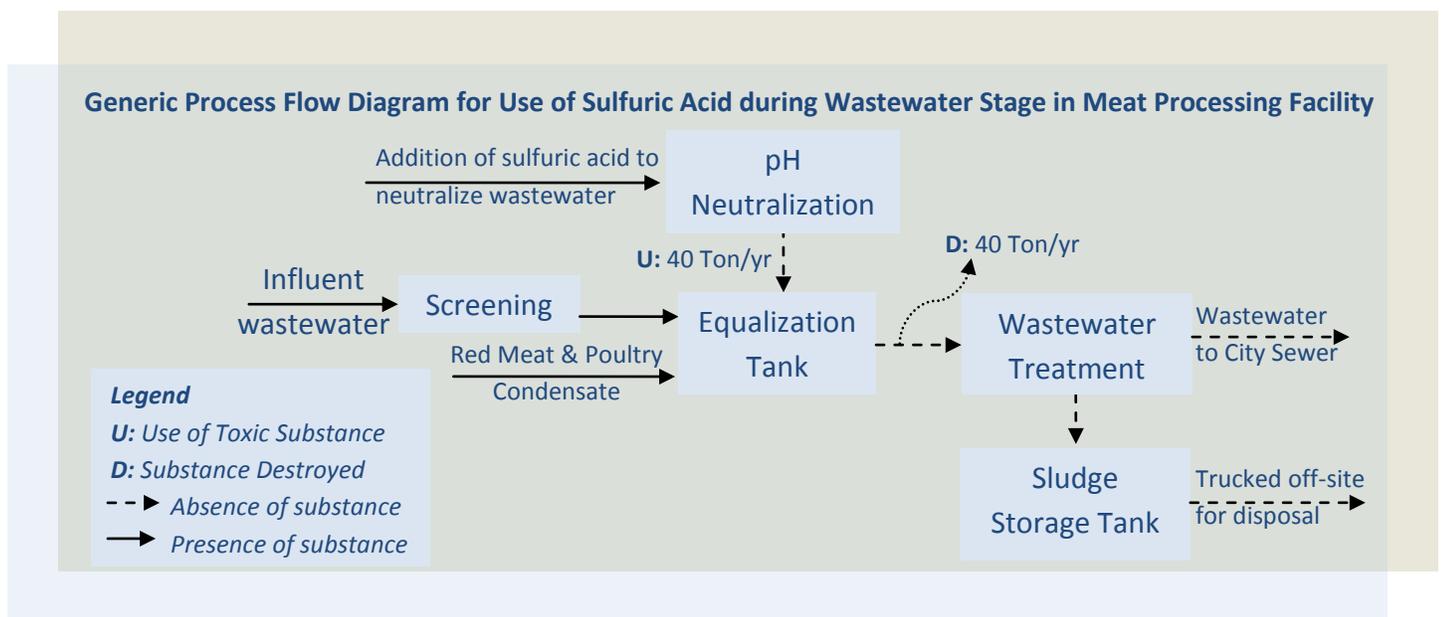
STEP 2: WHAT ARE THE TOXIC SUBSTANCE ACCOUNTING REQUIREMENTS?

Tracking, quantifying and reporting

After identifying that the criteria in Step 1 are met, you are required to annually report the results of amount of substances used, created, contained in product, released, disposed of, and/or transferred;

What is the purpose of annual toxic substance accounting?

Toxic substance accounting is a method of tracking and quantifying substances to identify the inputs and outputs of substances at your facility.



Tracking Toxic Substances

You are required to track toxic substances by identifying your facility's processes and developing process flow diagrams. A process flow diagram helps to identify how a substance enters the process, what happens to it during the process, how it leaves the process, and what happens to it after it leaves the process. Your facility is required to keep a record of the process flow diagrams by including the diagrams in the Toxic Substance Reduction Plan. Submission to the government is not required. An example of a process flow involving sulfuric acid destroyed during meat processing is provided below to illustrate the information required in a process flow diagram. The actual process may involve additional stages and processes. Additional detailed processes of a

toxic substance may include but not limited to emissions to air, creation during process, discharge into wastewater, and/or disposal as waste.

Quantifying toxic substances

The exemptions and calculation rules for quantifying substances for NPRI also applies to the Toxic Substance Reduction Plans. Use the best available method or combination of methods for each process. You can refer to several guides available such as the [Step by Step Guideline for Emission Calculation, Record Keeping, and Reporting For Airborne Contaminant Discharge](#), and the Guide for Reporting to NPRI 2009, for best available accounting methods. The regulation outlines several considerations for facilities when selecting the best available method, such as:

- ❖ How the substance enters/leaves the process, and what happens to the substance during/after the process;
- ❖ Industry standards;
- ❖ Economic achievability;
- ❖ Established and recognized methods, i.e. continuous monitoring, published emission factors); and
- ❖ Methods required by other laws.

Provide an explanation for each process if the sum of inputs is not approximately equal to sum of outputs for each substance. You may need to go back and review estimation methods, or the fate of a substance may have been overlooked. There may be another reason the inputs/outputs are not equal and an explanation is required.

Annual reports on Toxic Substance Reduction Plans

Much like reporting to NPRI, beginning on June 1st, 2011 and every year after this date, your facility must submit data to the government through the One Window to National Environmental Reporting System (OWNERS) website. The report will inform the government and the public your facility's progress in implementing the reduction plans and reducing toxic substances.

STEP 3: DEVELOPING TOXIC SUBSTANCE REDUCTION PLAN

Prepare a Toxic Substance Reduction Plan for each substance used or created at your facility and ensure a copy of each plan is kept on site. While the preparation of Toxic Substance Reduction Plans is mandatory, implementation is voluntary.

Why do you need to develop Toxic Substance Reduction Plans?

The government requires your facility to plan for the reduction of toxic substance use and creation. Toxic substance reduction planning is a method to identify and plan for the implementation of reduction options. The reduction plan should be designed to:

- ❖ Identify costs associated with the use of a toxic substance;
- ❖ Identify and evaluate options to reduce toxics and related costs; and
- ❖ Determine best options/practices and lay out a timeline for implementing these options.

What are the steps to develop a toxic substance reduction plan?

1. Establishing a team is not mandatory, but is recommended as best practice as the first step in developing a plan.
2. Estimate the direct/indirect annual costs related to EACH toxic substance. Costs may be related to disposal of wastes created, regulatory compliance, liability, purchasing, and/or health & safety.
3. Identify at least ONE toxic substance reduction option for each **category** (see list below), or explain why no option could be identified, by reviewing the process flow diagrams and quantification data.
 - ❖ Materials or feedstock substitution
 - ❖ Product design or reformulation
 - ❖ Equipment or process modifications
 - ❖ Spill and leak prevention
 - ❖ On-site reuse or recycling
 - ❖ Improved inventory management or purchasing techniques
 - ❖ Training or improved operating practices
4. Analyze each reduction option identified in Step 3 by estimating the reduction in the facility's use, creation and discharge, and the reduction in the amount contained in the product. Determine which options are suitable for your facility. i.e. Is the option available to facility? Is the option applicable to facility?
5. Once a suitable option is identified, analyze the costs/benefits as well. Include calculations of anticipated savings and payback period as a result from implementing an option. An option must be determined to be BOTH suitable and cost-effective.
6. Estimate the amount of toxic substance for the suitable and cost-effective options. The estimation would be based on the substance used, created, discharged and contained in product, and applies only to substances listed in Parts 1, 2 or 3 of the NPRI. Include a description of the implementation steps and create a timetable for implementing the options. Also include anticipated timelines for achieving estimated reductions of the use and creation of substance. Substances listed in NPRI Parts 4 & 5 and are contained in products do not require reduction estimates.
7. The plan must be certified by the highest ranking employee with management responsibilities at the facility.

8. The Plan must be certified by a person with prescribed qualifications (Licensed Toxics Planner). The highest ranking employee and the person with prescribed qualifications cannot be the same person.

These steps to develop a Toxic Substance Reduction Plan must be repeated for each toxic substance used or created at the facility. Plans may be combined in a single document. The information listed below must be included to meet the requirement of Section 4 in the Toxics Reduction Act.

Contents of Toxic Substance Reduction Plan	Description
Basic facility information	<i>Refer to Section 18(2) of regulation.</i>
Statement of intent	<i>Indicate intent to reduce the use/creation of substance or reasons for not including one.</i>
Objectives and targets	<i>Objectives and targets for reducing use/creation of toxic substance.</i>
Description of process	<i>Describe method(s) chosen to track/quantify the substance in each process and provide reason why the method was selected. Describe how, when, why, and where the substance is used/created in each process. Use Process Flow Diagrams.</i>
Toxic substance accounting info	<i>Describe quantifications used to prepare plan.</i>
Reduction options considered	<i>Consider the 7 NPRI pollution prevention categories or explain why no option identified. Identify technical and economic feasibility options.</i>
Reduction options to be implemented	<i>Include description of implementation steps and schedule. Include summary of estimated reduction and timeline for reduction achievement.</i>
Certifications	<i>Original certification by highest ranking employee and proposed planner</i>
<i>Due: December 31st, 2012 for first Plan, but submission not required.</i>	

Plans must be completed by December 31, 2012 for Phase 1 substances, using 2010 toxic substance accounting data; however submission to the government is not required. Plans for Phase 2 substances are to be completed by December 31, 2013 and are developed using 2012 toxic substance accounting data. Implementation of plans is voluntary at this time.

Review of Plans

All Plans are to be reviewed by the year 2018 and every 5 years after that. More frequent reviews are required if there is a significant process change at the facility. No review is required if the new process is a result of implementing a toxic substance reduction option or a notice has been given to the provincial government indicating that the facility no longer uses or creates toxic substances.

A process change is considered significant if:



- ❖ A new process is added at the facility and the process uses or creates a toxic substance; or
- ❖ The process change results in an increase in the use or creation of the substance by at least 15% from the total identified in the current plan.

An increase in production using existing processes is not considered a process change, even if it resulted in the increased use or creation of substances.

The purpose of the review is to conduct the necessary research to identify new options, undertake the corresponding technical and economic analyses, conduct calculations to determine new estimates of reduction and develop an implementation timetable.

STEP 4: TOXIC SUBSTANCE REDUCTION PLAN SUMMARY

In addition to the annual accounting report due on June 1st, a summary of each toxic substance reduction plan must be submitted to the government by December 31st of the year a plan is first developed. Changes made to the first plan will require an updated summary to be submitted 30 days after the revised plan is prepared, or by December 31 if the revised plan is a result of the 5-yr review. The summary is the source for communicating to the public why, how and the extent to which your facility is using or creating a toxic substance. It will also indicate to the public your facility's intent to reduce the use or creation of a toxic substance.

Prepare a summary for each toxic substance reduction plan and submit to the government by December 31st, 2012.

Contents of Plan Summary	Description
Basic Facility Information	<i>Refer to Section 18(2) of the regulation for list of required information.</i>
List of Toxic Substances	<i>List substances at the facility that requires a plan.</i>
Objectives and any targets	<i>Include copy of statement of intent to reduce or reasons for not including one.</i>
Description of Reduction Options	<i>Description of options to be implemented or statement that no option is to be implemented.</i>
Statement	<i>Indicate summary accurately reflects current version of the plan.</i>
Optional Content	<i>Actions take but to reduce toxic, but not included in plan.</i>
Copies of Certifications	<i>Certifications of Reduction Plans</i>
Submit electronically by December 31st 2012 for first Plan	

Document Retention

Your facility is required to keep a file of documents and records related to the development of the plans and reports, including the Toxic Substance Reduction Plans, for seven years.

USEFUL TOOLS AND RESOURCES

Listing of National Pollutant Release Inventory Substances website

<http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=8B14094D>

Ontario Regulation 455/09

http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090455_e.htm

Table A: List of Priority Substances, Ontario Regulation 455/09

http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_090455_e.htm#BK39

Guide for Reporting to the National Pollutant Release Inventory (NPRI) 2009

<http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=C33ABEE5-1>

Step by Step Guideline for Emission Calculation, Record Keeping and Reporting For Airborne Contaminant Discharge

<http://www.ene.gov.on.ca/publications/4099e04.pdf>

Online MOE Technical Training Session

<http://events.digitalmedia.telus.com/ontarioenvironment/062110/index.php>

Online Presentation from MOE Compliance Information Session

<http://www.ene.gov.on.ca/en/toxics/infoSessionOReg455-09.pdf>



For more information about OFIEC visit www.ofiec.ca