



Toxic Substance Reduction Plan Summaries

IGPC Ethanol Inc.

December 19, 2012



BASIC FACILITY INFORMATION		
Substances Included in the Plan		
<ul style="list-style-type: none"> ▪ Sulphuric Acid (CAS No. 7664-93-9) ▪ Benzene (CAS No. 71-43-2) ▪ Methanol (CAS No. 67-56-1) ▪ Toluene (CAS No. 108-88-3) 		
Facility Identification and Site Address		
Company Name	Integrated Grain Processors Co-operative Inc. (IGPC Ethanol Inc.)	
Facility Name	IGPC Ethanol Inc. – Aylmer Plant	
Facility Address	Physical Address:	Mailing Address:
	89 Progress Drive, Aylmer, ON N5H 2R9	P.O. Box 205, Aylmer, ON N5H 2R9
Spatial Coordinates of Facility	Easting: 502005 m, Northing: 4736654 m (Zone 17, NAD 83 Datum)	
Number of Employees	47 (full-time employee equivalents)	
NPRI ID	11696	
Parent Company (PC) Information		
PC Name & Address	Integrated Grain Processors Co-operative Incorporated	89 Progress Drive, Aylmer, ON N5H 2R9
Primary North American Industrial Classification System Code (NAICS)		
2 Digit NAICS Code	32 - Manufacturing	
4 Digit NAICS Code	3251 – Basic Chemical Manufacturing	
6 Digit NAICS Code	325190 – Other Basic Organic Chemical Manufacturing	
Facility and Planner Contact Information		
Facility Public Contact	Jim Grey, <i>CEO</i>	IGPC Ethanol Inc.
	Email: jgrey@igpc.ca	Same as facility address
	Phone: (519) 765-2575	
Planner Responsible for Making Recommendations and Certification	Mark Vanderheyden	RWDI AIR Inc.
	Planner License No.: TSRP0241	650 Woodlawn Road West, Guelph, ON N1K 1B8
	Email: Mark.Vanderheyden@rwdi.com	
	Phone: (519) 823-1311	



SULPHURIC ACID (CAS NO. 7664-93-9)	
Statement of Intent	
Beyond the existing process modification initiative that is currently in a trial phase involving the use of an alternative enzyme that functions in a less restrictive range of pH during the fermentation process, thereby reducing the amounts of sulphuric acid and anhydrous ammonia usage, IGPC Ethanol Inc. does not intend to reduce its use of sulphuric acid because no technically and economically feasible options were identified to do so.	
Objectives	
IGPC Ethanol Inc. does not currently release sulphuric acid to the environment as it is entirely used up in the processes and chemically transformed to non-TRA substances. In addition, no spills or leaks of sulphuric acid have occurred on-site. It is the objective of IGPC Ethanol Inc. to maintain these two standards with 0% releases to environment and 0 spills or leaks per year.	
Description of Used Substance	
Sulphuric acid (H ₂ SO ₄) is added in the Mash Cooking Process to adjust the pH of the liquid mash to levels that are optimal for yeast productivity during the subsequent Fermentation Process. Sulphuric acid is also added to the cooling tower's cooling water in order to maintain a suitable pH or alkalinity such that scale formation does not occur.	
Rationale for No Option(s) to be Implemented	
None of the identified use/creation reduction options are suitable for implementation at this time based on technical and economic feasibility assessments.	

This plan summary accurately reflects the Toxic Reduction Plan that has been prepared by RWDI AIR Inc. and IGPC Ethanol Inc., dated December 19, 2012.



METHANOL (CAS NO. 67-56-1)	
Statement of Intent	
<p>IGPC Ethanol Inc. intends to implement option B3.5.1 - Installation of Ethanol Vapour Recovery System. This option will not result in reduced creation of methanol, but will result in significant decreases in air emissions of methanol. None of the other identified use/creation reduction options are suitable for implementation at this time based on technical and economic feasibility assessments.</p>	
Objectives	
<p>It is the objective of IGPC Ethanol Inc. to reduce annual methanol emissions to air by 98% or 4.3 tonnes based on the installation of the Ethanol Vapour Recovery System.</p>	
Description of Use/Creation of Substance	
<p>This substance is used as a formulation component at the facility. It is an ingredient of a corrosion inhibitor additive that is introduced during the denaturing process in order to meet fuel product specifications.</p> <p>Also, this substance is created as a by-product when yeast metabolize sugar in an low oxygen environment during the fermentation process.</p>	
Description Option(s) to be Implemented	
<p>Institute recirculation with a process: The Ethanol Vapour Recovery System captures vapours at the CO₂ scrubber outlet for re-introduction to the distillation process. This would not reduce the creation of methanol but would significantly reduce air emissions from the process. Any vapours not captured by the Recovery System would be sent through the thermal oxidizer. This option was found to be technically and economically feasible with a positive impact on the facility's bottom line.</p>	

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BENZENE (CAS NO. 71-43-2)	
Statement of Intent	
IGPC Ethanol Inc. is committed to minimizing its use of benzene-containing denaturant products due to the economic and environmental benefits of doing so. As a result, no further options to reduce usage that are both technically and economically feasible were identified at this time. Therefore, IGPC Ethanol Inc. does not intend to reduce its use of benzene-containing denaturant at this time.	
Objectives	
It is the objective of IGPC Ethanol Inc. to minimize the use of benzene-containing denaturants within product specification limits and to maintain a record of 0 spills or leaks per year.	
Description of Use of Substance	
This substance is used as a formulation component at the facility. It is contained in gasoline which is used as a denaturant additive to the produced ethanol in order to meet Canadian and American ethanol fuel specifications. In Canada this is required in accordance with the "Regulations Amending the Denatured and Specially Denatured Alcohol Regulations" under the Excise Act, 2001.	
Description Option(s) to be Implemented	
None of the identified usage reduction options are suitable for implementation at this time based on technical and economic feasibility assessments.	

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TOLUENE (CAS NO. 108-88-3)

Statement of Intent

IGPC Ethanol Inc. is committed to minimizing its use of toluene-containing denaturant products due to the economic and environmental benefits of doing so. As a result, no further options to reduce usage that are both technically and economically feasible were identified at this time. Therefore, IGPC Ethanol Inc. does not intend to reduce its use of toluene-containing denaturant at this time.

Objectives

It is the objective of IGPC Ethanol Inc. to minimize the use of toluene-containing denaturants within product specification limits and to maintain a record of 0 spills or leaks per year.

Description of Use of Substance

This substance is used as a formulation component at the facility. It is contained in gasoline which is used as a denaturant additive to the produced ethanol in order to meet Canadian and American ethanol fuel specifications. In Canada this is required in accordance with the "Regulations Amending the Denatured and Specially Denatured Alcohol Regulations" under the Excise Act, 2001.

Description Option(s) to be Implemented

None of the identified usage reduction options are suitable for implementation at this time based on technical and economic feasibility assessments.

This plan summary accurately reflects the Toxic Reduction Plan that has been prepared by RWDI AIR Inc. and IGPC Ethanol Inc., dated December 19, 2012.



Certification by Highest Ranking Employee

As of December 19, 2012, I, Jim Grey , certify that I have read the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the plans are factually accurate and comply with the *Toxics Reduction Act, 2009* and Ontario Regulation 455/09 (General) made under that Act.

- Sulphuric Acid (CAS No. 7664-93-9)
- Benzene (CAS No. 71-43-2)
- Methanol (CAS No. 67-56-1)
- Toluene (CAS No. 108-88-3)

Original signed copies are retained on-site.

Jim Grey
CEO
IGPC Ethanol Inc.



Certification by Licensed Planner

As of December 19, 2012, I, Mark Vanderheyden, certify that I am familiar with the processes at IGPC Ethanol Inc. that use or create the toxic substances 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 toxic substance reduction plans referred to below for the toxic substances and that the plans comply with the Act and Ontario Regulation 455/09 (General) made under that Act.

<u>Substance</u>	<u>Date of Certified Plan</u>
▪ Sulphuric Acid (CAS No. 7664-93-9)	December 19, 2012
▪ Methanol (CAS No. 67-56-1)	December 19, 2012
▪ Benzene (CAS No. 71-43-2)	December 19, 2012
▪ Toluene (CAS No. 108-88-3)	December 19, 2012

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Mark Vanderheyden, Planner License # TSRP0241
Project Director / Toxic Substance Reduction Planner
RWDI AIR Inc.