

Recochem Inc. Milton Ontario facility

**Toxic reduction plan prepared under the Toxics
Reduction Act O. Reg 455-09**

Using the 2011 data (Methanol)

Toxics reduction plan (Methanol)

Recochem Inc:

Recochem has been operating in Ontario since 1965 it is primarily a blender and packager of consumer chemicals such as windshield washer fluid, paint thinner and automotive antifreeze.

Recochem has an extensive health and safety and environmental program; which includes procedures, regular training of its employees, and regular audits of its systems to ensure Health & Safety and environmental compliance.

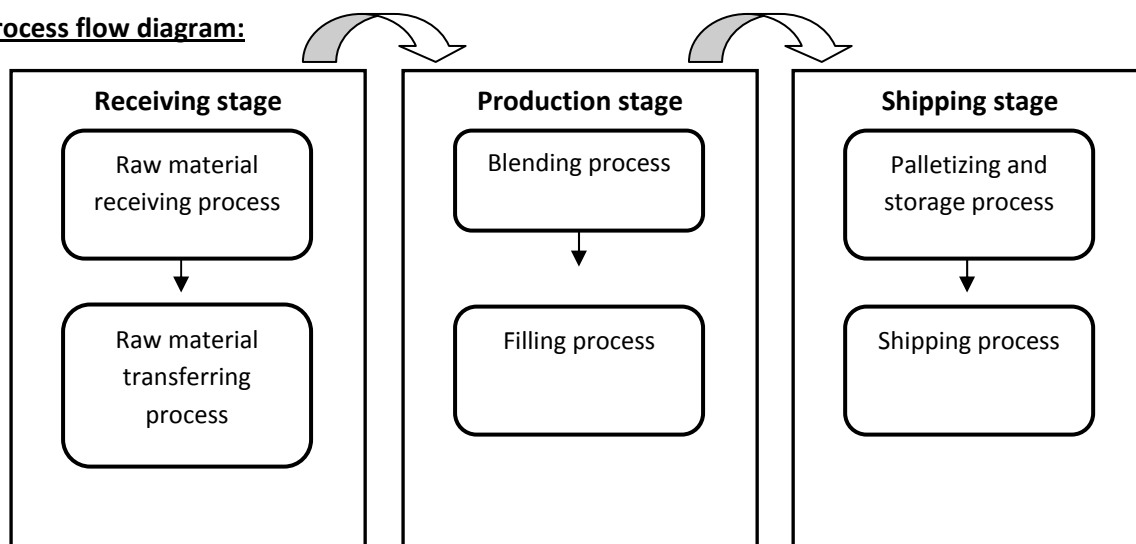
Recochem handles methanol which has been designated under the Toxics Reduction Plan Act in Ontario. One of our main products, windshield washer fluid winter formulation, contains 45% to 49% methanol. The methanol's freeze protection and fast evaporating action are what makes windshield washer a necessary safety product while driving in winter conditions in Canada.

Process Flow Description :

Methanol is received in railcars. The methanol is then transferred by pumping into the exterior storage tanks. During this operation there is some evaporation lost to the atmosphere from the tank (this is what is reported to NPRI) as the methanol fills the empty tank and the air in the tank escapes to make place to the liquid. Once empty, some residual methanol stays in the railcars as they returned to the supplier. We have estimated that an empty railcar still has about 10 litres of methanol inside.

From the storage tank, the methanol is pumped to the Automatic Blending Unit (ABU) where it is mixed with water, surfactant, and dye to create windshield washer fluid. Based on the ABU manufacturer the unit has a calculated error of approximately 0.25% (we assumed ½ that error in our calculation). As the bottles are filled through the filler, there is a certain amount of evaporation released to the air in the filling room. A cap is then applied to the bottle and they are then packaged in cartons and ready to be shipped. The only waste generated relates to regular change over process, during which the process pipes and hoses are rinsed with water to flush the windshield washer fluid. All the clean flush water is retained and reused in other batch of windshield washer fluid. Any dirty methanol containing flush water is stored in drums and sent for disposal through a licensed waste recycler.

Process flow diagram:



Process flow Legend descriptions

A	outside release of methanol vapours to air
U	input of methanol into the process
P	product "methanol" moving to the next process
DIS	disposal through secured recycler
DQL	Data Quality Level (H-high, AA- above average, A-average, U-uncertain)

High quality data:

- Continuous monitoring of toxic substances, according to an approach that has been validated by a regulatory agency.
- Comprehensive and validated source testing over a range of operating conditions.
- Quantifications that are derived from comprehensive-specific testing.
- Mass balance for processes where 100% of the materials balance is accounted for and the toxic substance will not undergo a chemical transformation.

Above Average quality data:

- Source testing at one specific operating condition
- Quantifications that are developed from tests on a moderate to large number of industry sources where the source category population is sufficiently specific to minimize variability.
- Engineering calculation/judgment: quantifications derived from fundamental scientific and engineering principles.

Average quality data:

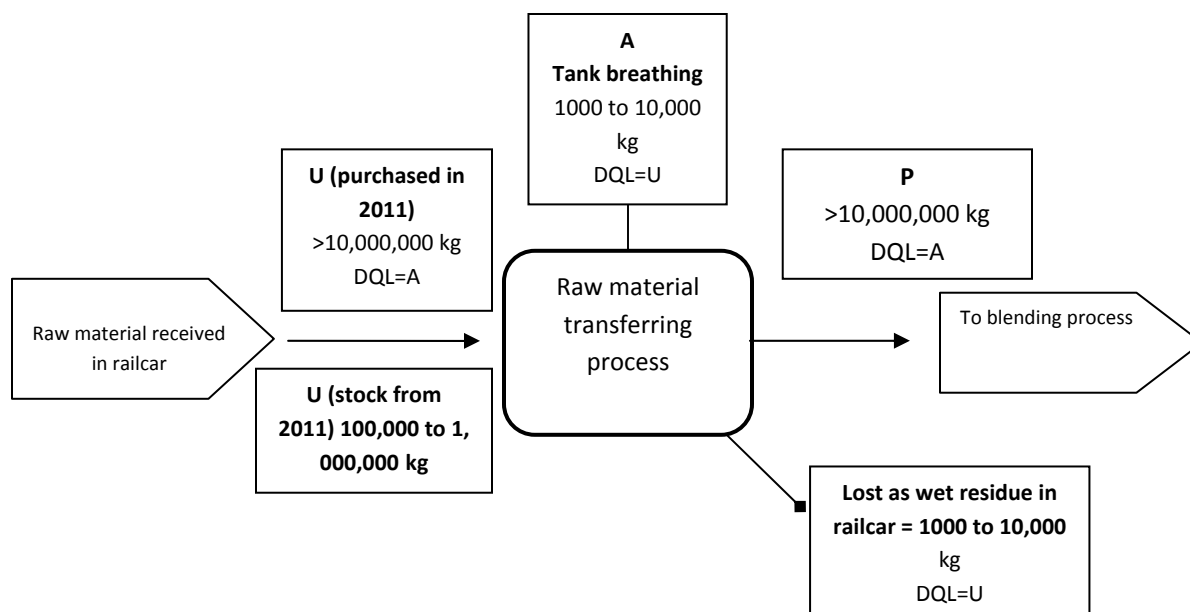
- Quantifications that are developed from test on reasonable number of facilities where the source category population is sufficiently specific to minimize variability.
- Engineering calculation/judgment quantifications derived from fundamental scientific and engineering principles and/or relevant data.
- Partially validated source testing where the testing has only been partially validated at a specific operating condition.

Uncertain quality data:

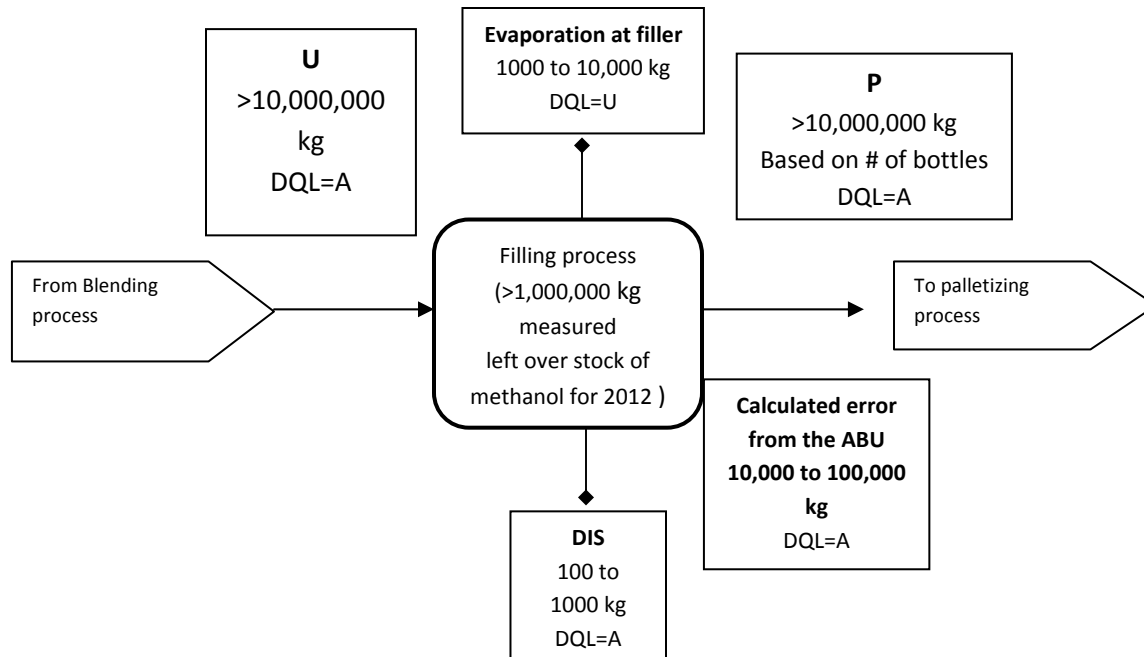
- Un-validated source testing at one operating condition: emission rate estimates that are from un-validated source testing.
- Quantifications that are developed from test on only small number of facilities where there is evidence of variability within the source category population.
- Calculation/judgment quantifications derived from calculations where the scientific/technical integrity of the approach is uncertain are considered to have uncertain data quality.

Methanol Mass balance 2011 data (all values in kilogram)

	Kg
Methanol used	>10,000,000
Methanol created	none
Methanol in contained in product	>10,000,000



- Purchased methanol is tracked using the weight of each railcar indicated on the invoice for the manufacturer.
- Tank breathing is estimated using the calculated volume of air displaced in the tank and the number of times the tank is filled over the year.
- Lost as wet residue in the railcar is estimated



- Quantity produced is tracked through our inventory and production records.
- Evaporation at filler is calculated using the volume of a bottle, the number of bottles filled in a year.
- Disposed methanol is calculated
- Calculated error from ABU is based on the manufacturers data

7 categories for reducing toxics use

1. Material or feedstock substitution

Replace methanol by ethanol

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. >10,000,000 kg
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 1000 to 10,000 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility.
>10,000,000 kg

Technically feasibility: not feasible, ethanol is not available in large enough quantity on the market to replace the entire methanol used for the production.

Economic feasibility: no, ethanol is significantly more expensive than methanol, (Windshield washer fluid is our finished product and the product could not command a higher selling price). Recochem offered for a few years an ethanol WW and we had to pull it off the market because its higher price was cost prohibitive.

2. Product design or reformulation

Using something else than alcohol to manufacture WW

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. >10,000,000 kg
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 1000 to 10,000 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility.
>10,000,000 kg

Technically feasibility: feasible, but impractical. Our research has shown that there is no other chemical available that performs like methanol for a windshield washer fluid. All other options require to use more chemical to achieve the same freeze protection to perform in Canadian weather.

Economic feasibility: no, all other known substances that could be used are more expensive. (Windshield washer fluid is our finished product and the product could not command a higher selling price).

3. Equipment or process modification

Using fillers with vapour recovery system

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. 1000 to 10,000 kg
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 1000 to 10,000 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility. 0 kg

Technically feasibility: Feasible

Economic feasibility: no

4. Spill and leak prevention

Using check valves on all hoses

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. 100 to 1000 Kg collected to waste
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 100 to 1000 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility. 0 kg

Technically feasibility: feasible

Economic feasibility: no

5. On-site reuse or recycling

On-site reuse or recycling

This activity is already practiced, all methanol collected outside the normal filling process (pipe rinse, rework, spills etc) of good quality is reused into the production

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. 0 kg,
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 0 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility. 0 kg

Technically feasibility: feasible already done (no gain)

Economic feasibility: feasible, already done, no cost since the equipment is already in use.

6. Improved inventory management or purchasing techniques

More accurate inventory management including metering of raw material, installing a meter to monitor the volume received by railcars

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. 0 kg
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 0 kg to the air.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility. 0 kg

Technically feasibility: feasible (no gain) it would only help us get slightly better accuracy for our inventory of raw material.

Economic feasibility: no

7. Training or improved operating practices

Review training of blending employees and Production employees to emphasize spill prevention

- i. estimates of the amount by which the use of the substance at the facility will be reduced, if the substance is used at the facility. 0 Kg
- ii. estimates of the amount by which the creation of the substance at the facility will be reduced, if the substance is created at the facility. Not applicable
- iii. estimates of the amount by which the discharges of the substance to air, land or water will be reduced, if the substance is discharged to air, land or water. 100 to 1000 kg to the air. To this one has to add potential accidental spill which cannot be calculated but are certainly costly to the company.
- iv. estimates of the amount of the substance contained in product leaving the facility that will be reduced, if the substance is a NPRI substance other than a substance that is identified as a criteria air contaminant or a volatile organic compound in the NPRI Notice and is contained in product that leaves the facility. 0 kg

Technically feasibility: feasible (no gain)

Economic feasibility: feasible (already done)

Training at Recochem Inc. is regarded as extremely important for all employees handling hazardous material. Recochem has developed an extensive training program that deals with Health and Safety as well as environmental issues like spills prevention and management.

List of the options that have been determined to be technically feasible

- ✓ Using check valves on all hoses.
- ✓ On-site reuse or recycling.
- ✓ More accurate inventory management including metering of raw material.
- ✓ Review training of blending employees and Production employees to emphasize spill prevention.

List of the options that have been determined to be both technically and economically feasible.

- ✓ On-site reuse or recycling

This option is already in place, the technology allows us to recuperate the maximum amount of methanol. Wastes generated by this process, is less than 0.01 percent, which is acceptable.

This option will not reduce the amount of methanol contained in product leaving the facility. The reduction of methanol contained in product leaving our facility is not an option in our plan.

- ✓ Review training of blending employees and Production employees to emphasize spill prevention.

This option is already in place, has been for several years, the training program is ongoing annually to ensure employees do not forget and to introduce changes when necessary Wastes generated by this process, that cannot be re-used, is less than 1/10th of a percent, which is acceptable. Training is in place to help prevent large spills which would have a negative impact on our environmental program.

This option will not reduce the amount of methanol contained in product leaving the facility. The reduction of methanol contained in product leaving our facility is not an option in our plan.

Facility Information:

Facility	Recochem Inc. 8725 Holgate Crescent, Milton Ontario, L9T 5G7 905-878-5544
Substance identified under the Toxic Reduction Plan	Methanol
C.A.S. registry number	67-56-1
Public contact	Robin Le Sage, Compliance & Technical Information Manager, 905-878-5544
Highest ranking employee	General Manager, 905-878-5544
Toxic substance reduction planner License number regarding section 18.2	Jim Anderson, M.Eng., P.Eng., TSRP0127
Toxic substance reduction planner License number regarding section 19.1	Jim Anderson, M.Eng., P.Eng., TSRP0127
spatial coordinates of the facility expressed in UTM	Zone: 17 Easting: 587990 Northing: 4821311
Canadian parent company	Recochem Inc.
Address of parent company	850 Montée de Liesse, Montréal, Québec, H4T 1P4

TSP Statements:

Substances for which plans have been prepared at facility	Methanol, CAS 67-56-1
Statement of Intent to Reduce	Recochem Inc. does not intend to reduce the use of methanol because reducing use of this compound would limit production.
Objectives of the Plan	Recochem Inc. does not intend to reduce the use of methanol.
Plan Summary Statement	This plan summary accurately reflects the content of the toxic substance reduction plan for methanol, prepared by Recochem Inc. for their facility located in Milton, Ontario, Canada, dated March 30, 2013.
Reduction Objectives	Recochem Inc. does not intend to reduce the use of methanol.
Description of Substance	Methanol is the main ingredient in windshield washer formulated by Recochem Inc.
Toxic Substance Reduction Option to be Implemented	None
Planner Recommendations and Rationale	<p>Draft TRSP:</p> <ul style="list-style-type: none">• Accounting items and approach are reasonable with the mass balance.• After itemizing 7 categories of reductions, need to show (a) technical feasibility, (b) if technically feasible, economic feasibility. Summarize the actual quantity of reduction in use/release/contained in product from those 7 items. (the draft document shows percentages mainly for only use and releases, and should relate back to accounted quantities).• If technically feasible, and you do economic feasibility, you should provide some numbers for economics – eg. actual costs of substitute materials, costs of new equipment, costs to train personnel, etc.• Economic analysis must provide a payback analysis.• Have you ever considered compressed air to clean pipes or rinse pipes and re-use that material?• Certification statements to be prepared for Methanol – need plan summary statements, statements of intent, reduction objectives, toxic substances reduction option to be implemented. <p>Final TRSP:</p> <ul style="list-style-type: none">• Certification statements to be prepared for Methanol – need plan summary statements, statements of intent, reduction objectives, toxic substances reduction option to be implemented.

Certification by highest ranking employee

As of March 30, 2013 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.

Methanol CAS# 67-56-1



Mike Wilson
General Manager

6/13/13

Date

Certification by toxic substance reduction planner

As of March 30, 2013, I, Jim Anderson, M.Eng., P.Eng. certify that I am familiar with the processes at Recochem 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 that Act and Ontario Regulation 455/09 (General) made under that Act.

Methanol CAS# 67-56-1



Jim Anderson, M.Eng., P.Eng.
Toxic Substance Reduction Planner 0127
MBN Environmental Engineering Inc.

30 March 2013

Date

Recochem Inc. position regarding the Toxics Reduction Plan

Recochem appreciates the effort from the Ministry of the Environment to inform and guide Ontario company in their attempts to reduce their use and emission of targeted “toxic” products.

In the case of methanol, Recochem handles methanol as a primary raw material and as such, does not intend to reduce its annual volume. Recochem has 60 years of experience in handling methanol in a safe manner for its employees and the environment. After investigating potential alternatives to methanol for windshield washer fluid, it was determined that our direct and indirect costs would remain the same since all available alternatives products are flammable so the infrastructure, the maintenance, the regulatory aspect and the health & Safety aspect would remain the same more or less.

Furthermore, all alternatives investigated are more expensive and in some cases less effective than methanol in windshield washer fluid. Therefore Recochem will not make any changes to its process in the immediate future, but continue to investigate new raw material and new processes that are developed and that could improve our process and benefit the environment, with minimal compromise to the quality, efficacy and security offered by our product.