Plan Summary Preview

Company Details

Company Legal Name:
Air Products Canada Ltd.

Company Address:
989 Derry Road, Mississauga (Ontario)

Report Details

Facility:
Corunna Hydrogen Facility

Facility Address:
150 St. Clair Parkway Parkway, Corunna (Ontario)

Update Comments:

Activities

Select the Facility Contacts

Contacts

Public Contact:* Bryan Jacques

Highest Ranking Employee:
Bryan Jacques

Person responsible for Toxic Substance Reduction Plan preparation:
Wasef Jamil

Organization Validation

Company and Parent Company Information

Company Details

Company Legal Name:* Air Products Canada Ltd.

Company Trade Name:* Air Products Canada Ltd
Environment Canada

Business Number:* 877788000

Mailing Address

Delivery Mode: General Delivery
PO Box or Rural Route Number: 
Address Line 1: 102 - 989 Derry Road East
City: Mississauga
Province/Territory: Ontario
Postal Code: L5T2J8

Physical Address

Address Line 1: 102 - 989 Derry Road
City: Mississauga
Province/Territory: Ontario
Postal Code: L5T2J8

Parent Companies

Air Products Canada Ltd

Company Legal Name:* Air Products Canada Ltd
Percentage owned:* 100.00
Business Number:* 877788000

Mailing Address

Delivery Mode:
PO Box or Rural Route Number: 
Address Line 1: 989 Derry Road East
<table>
<thead>
<tr>
<th><strong>City:</strong></th>
<th>Mississauga</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Province/Territory:</strong></td>
<td>Ontario</td>
</tr>
<tr>
<td><strong>Postal Code:</strong></td>
<td>ONL5T2J8</td>
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**Physical Address**

<table>
<thead>
<tr>
<th><strong>Address Line 1:</strong></th>
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**Mailing Address**

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<tr>
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<tbody>
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<td><strong>Address Line 1:</strong></td>
<td>7201 Hamilton Blvd. Boulevard</td>
</tr>
<tr>
<td><strong>City:</strong></td>
<td>Allentown</td>
</tr>
<tr>
<td><strong>Province/Territory:</strong></td>
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</tr>
<tr>
<td><strong>Postal Code:</strong></td>
<td>18195</td>
</tr>
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**Physical Address**

| **Address Line 1:** | 7201 Hamilton Boulevard |
| **City:** | Allentown |
| **Province/Territory:** | Pennsylvania |
| **Postal Code:** | 18195 |
| **Additional Information:** |  |
| **Land Survey Description:** |  |
| **National Topographical Description:** |  |

**AIR PRODUCTS CANADA**

| **Company Legal Name:** | AIR PRODUCTS CANADA |
| **Percentage owned:** | 50.00 |
| **Business Number:** | 877788000 |

**Mailing Address**

| **Delivery Mode:** |  |
| **PO Box or Rural Route Number:** |  |
| **Address Line 1:** | 7201 Hamilton Boulevard |
| **City:** | Allentown |
| **Province/Territory:** | Pennsylvania |
| **Postal Code:** | 18195 |

**Physical Address**

| **Address Line 1:** | 7201 Hamilton |
| **City:** | Allentown |
| **Province/Territory:** | Pennsylvania |
| **Postal Code:** | 18195-1501 |
| **Additional Information:** |  |
| **Land Survey Description:** |  |
Facility Validation

Facility Information

Facility:* Corunna Hydrogen Facility

NAICS Id:* 325120

NPRI Id:* 11489

ON Reg 127/01 Id:

Mailing Address

Delivery Mode: Post Office Box

PO Box or Rural Route Number: 608

Address Line 1: 150 St. Clair Parkway

City: Corunna

Province/Territory: Ontario

Postal Code: N0N1G0

Physical Address

Address Line 1: 150 St. Clair Parkway Parkway

City: Corunna

Province/Territory: Ontario

Postal Code: N0N1G0

UTM Zone: 17

UTM Easting: 381776

UTM Northing: 4750852

Latitude: 42.90110

Longitude: -82.44610
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<tbody>
<tr>
<td>First Name:*</td>
<td>Bryan</td>
</tr>
<tr>
<td>Last Name:*</td>
<td>Jacques</td>
</tr>
<tr>
<td>Position:*</td>
<td>Plant Manager</td>
</tr>
<tr>
<td>Telephone:*</td>
<td>5198624243</td>
</tr>
<tr>
<td>Ext:</td>
<td></td>
</tr>
<tr>
<td>Fax:</td>
<td>5198624673</td>
</tr>
<tr>
<td>Email:*</td>
<td><a href="mailto:jacqueb@airproducts.com">jacqueb@airproducts.com</a></td>
</tr>
<tr>
<td>Delivery Mode:</td>
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<td>608</td>
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<tr>
<td>First Name:*</td>
<td>Bryan</td>
</tr>
<tr>
<td>Last Name:*</td>
<td>Jacques</td>
</tr>
<tr>
<td>Position:*</td>
<td>Plant Manager</td>
</tr>
</tbody>
</table>
Mailing Address

Person responsible for the Toxic Substance Reduction Plan preparation:

First Name:* Wasef
Last Name:* Jamil
Position:* Environmental Engineer
Telephone:* 6472021755
Ext:
Fax:
Email:* wasef.jamil@urs.com

Mailing Address

Delivery Mode: Post Office Box
PO Box or Rural Route Number: 608
Address Line 1: 150 St. Clair Parkway Parkway
City: Corunna
Province/Territory: Ontario
Postal Code: N0N1G0
Province/Territory: Ontario
Postal Code: L4B 4N4

Employees
Number of Full-time Employees:* 10

Substances
67-56-1, Methanol

Substances Section Data
Statement of Intent
Use
Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*
No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:**

If ‘no’, reason in the facility's TRA Plan for no intent to reduce the use of the toxic substance at the facility:**
Methanol is not used at the Facility

Creation
Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*
No

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility's TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**
APC is committed to playing a leadership role in environmental sustainability and its stewardship. Methanol is currently produced as a by-product by APC during the manufacturing of hydrogen using the SMR process. APC currently closely monitors and evaluates the performance of the manufacturing process. Since, the Facility does not intentionally create methanol, this plan will not address reducing its creation. As part of the responsibilities towards the better of the environment and the society, given the current process conditions APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of methanol while being in compliant with the applicable Federal and Provincial Regulations

Objectives, Targets and Description

Objectives

Objectives in plan:* 

APC intends to monitor new methods and investigate emerging technologies to reduce or eliminate the creation of methanol. At this time, no reduction objective has been set; but APC will closely evaluate the production process in order to reduce the creation of methanol at the Facility.

Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>No quantity target</td>
<td>or</td>
</tr>
</tbody>
</table>

What is the targeted timeframe for this reduction?*

| No timeline target | or years |

Description of targets:

Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

<table>
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<tr>
<td>No quantity target</td>
<td>or</td>
</tr>
</tbody>
</table>

What is the targeted timeframe for this reduction?*

| No timeline target | or years |

Description of targets:
Reasons for Use

Why is the toxic substance used at the facility?:

This substance is not used at the facility

Summarize why the toxic substance is used at the facility:

Reasons for Creation

Why is the toxic substance created at the facility?:

As a by-product

Summarize why the toxic substance is created at the facility:

Methanol is produced at the HTS reactor where the water gas shift reaction occurs. Methanol is produced from a reaction between hydrogen and carbon monoxide, one of the impurities in the syngas stream.

Toxic Reduction Options for Implementation

Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.

Explanation of the reasons why no option will be implemented:

Methanol is created as a by-product in the HTS reactor where the water gas shift reaction occurs. Methanol is produced from a reaction between hydrogen and carbon monoxide, one of the impurities in the syngas stream. The Toxic Substance Reduction Plan addressed the MOE prescribed option categories which included materials or feedstock substitution, product design or reformulation, equipment or process modification, spill or leak prevention, on-site re-use, recycling or recovery, improved inventory management or purchasing techniques and good operator practice or training. None of the options were beneficial for the Facility at this particular time and the review did not identify any reduction option for the creation of methanol at the Facility. As part of their perceived social and environmental responsibilities, given the current process conditions APC intends to monitor the SMR process to optimize the efficiency of the system in order to find possible means for reducing the creation of methanol while being in compliant with the applicable Federal and Provincial Regulations.

Materials or feedstock substitution
Equipment or process modifications
Spill or leak prevention
On-site reuse, recycling or recovery
Improved inventory management or purchasing techniques
Good operator practice or training

Rationale for why the listed options were chosen for implementation:
General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0134

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0134

What version of the plan is this summary based on?:*

New Plan

NA - 19, Hexavalent chromium (and its compounds)

Substances Section Data

Statement of Intent

Use

Is there a statement that the owner or operator of the facility intends to reduce the use of the toxic substance at the facility?:*

Yes

If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the use of the toxic substance at the facility:***

APC is committed to playing a leadership role in environmental sustainability and its stewardship by responsibly managing their environmental footprint, drive improvements and set and achieve environmental reduction goals for energy, greenhouse gases, waste and emissions, and water. Hexavalent chromium is a residual constituent in the High-Temperature Shift Catalysts. Whenever feasible, APC will eliminate, or reduce the use and discharge of hexavalent chromium in full compliance with all Federal and Provincial Regulations.

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the use of the toxic substance at the facility:***

Creation

Is there a statement that the owner or operator of the facility intends to reduce the creation of the toxic substance at the facility?:*

No
If ‘yes’, exact statement of the intent that is included in the facility’s TRA Plan to reduce the creation of the toxic substance at the facility:**

If ‘no’, reason in the facility’s TRA Plan for no intent to reduce the creation of the toxic substance at the facility:**

Hexavalent Chromium is not created at the Facility

Objectives, Targets and Description

Objectives

Objectives in plan:*  
APC intends to monitor new methods and investigate ways to reduce or eliminate the use of hexavalent chromium. At this time, a reduction target is not set forward but APC will eliminate or reduce the use of hexavalent chromium at the Facility, whenever feasible.

Use Targets

What is the targeted reduction in use of the toxic substance at the facility?*

<table>
<thead>
<tr>
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What is the targeted timeframe for this reduction?*

<table>
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Description of targets:

Creation Targets

What is the targeted reduction in creation of the toxic substance at the facility?*

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</table>

Description of targets:
Reasons for Use

Why is the toxic substance used at the facility?:*

As a physical or chemical processing aid

Summarize why the toxic substance is used at the facility:**

Hexavalent Chromium (Cr(VI)) is a residual constituent in the High-Temperature Shift Catalysts, Katalco 71-5M and Katalco 71-6M. Cr(VI) acts as a structural promoter, reducing the thermal sintering of iron oxide, a constituent of the catalysts, from Haematite (Fe2O3) to Magnetite (Fe3O4) form without appreciably changing the specific activity of the HTS catalyst. This reduction of iron oxide is required for the successful operation of the HTS catalyst over the life cycle.

Reasons for Creation

Why is the toxic substance created at the facility?:*

This substance is not created at the facility

Summarize why the toxic substance is created at the facility:**

Toxic Reduction Options for Implementation

Description of the toxic reduction option(s) to be implemented:

Is there a statement that no option will be implemented?:*

Yes

If you answered “No” to this question, please add the option(s) under the appropriate Toxic Substance Reduction Categories (e.g. Materials or feedstock substitution, Product design or reformulation, etc.). If you answered “Yes” please provide an explanation below why your facility is not implementing an option.

Explanation of the reasons why no option will be implemented:**

There are three options that are identified in this TSRP for the potential reduction of Cr(VI) use at the Facility - Material Substitution (Future), Process Modification (Future), Inventory/Purchasing. Potential reductions were estimated based on each of the three reductions. All the three identified options are very Facility-specific and are meant for future purposes when the life of the catalysts is closer to their maturity date or when scheduled for replacement during maintenance outage, i.e. in the next 5 to 6 years. Hence, the technical analyses are Facility-specific as well and are beyond the expertise of the Planner at this particular time. These analyses can be undertaken by APC’s process engineers, the facility manager and the catalysts suppliers during the half-yearly meetings when catalysts performances are monitored and evaluated closer to their replacement cycles.

Materials or feedstock substitution

Product design or reformulation

Equipment or process modifications

Spill or leak prevention

On-site reuse, recycling or recovery

Improved inventory management or purchasing techniques
Good operator practice or training

Rationale for why the listed options were chosen for implementation:

General description of any actions undertaken by the owner and operator of the facility to reduce the use and creation of the toxic substance at the facility that are outside of the plan:

Manufacturing hydrogen using the SMR process is one of the core businesses of APC. Within APC Corporation there are designated internal teams comprising of personnel with background and expertise in material and process engineering. These teams spend exhaustive efforts to strive for the most efficient possible means to produce hydrogen for their customers using the SMR process. They work closely with the chemicals suppliers to obtain the best possible raw materials and catalysts present in the existing market for manufacturing hydrogen in the best possible way. Management of the Corunna Facility is built upon a similar culture, where APC’s process engineers, facility manager and the catalysts suppliers meet every half-year, to monitor and evaluate the performance of the catalysts to best estimate the efficiency of the SMR process. During these meetings, detailed attention is paid to the existing condition of the catalysts that are in the reactors, estimate the remaining life of the existing catalysts and finally evaluating the suitability of any alternatives catalysts that are currently available in the market that would help maintain and achieve a better efficient manufacturing process. All these evaluations and decisions are made while ensuring compliance with the Federal and Provincial regulatory requirements.

License Number of the toxic substance reduction planner who made recommendations in the toxic substance reduction plan for this substance (format TSRPXXXX):*

TSRP0134

License Number of the toxic substance reduction planner who has certified the toxic substance reduction plan for this substance (format TSRPXXXX):*

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