

Annual Report on Toxic Substances

*2019 Reporting Year
Public Report*

NOVA Chemicals
Corunna, Moore, and St. Clair River Sites

Table of Contents

Introduction.....	1
Corunna Site.....	3
Facility and Company Information	3
TRA Applicable Substances	4
Annual Certification Statement	14
Moore Site	15
Facility and Company Information	15
TRA Applicable Substances	16
Annual Certification Statement	21
St. Clair River Site	22
Facility and Company Information	22
TRA Applicable Substances	23
Annual Certification Statement	27

Introduction

NOVA Chemicals develops and manufactures chemicals, plastic resins and end-products that make everyday life safer, healthier and easier. NOVA Chemicals believes that sound environmental stewardship and the careful management of our natural resources -- such as air, land and water -- simply make good business sense. We have established companywide systems and procedures to ensure that we continuously improve our environmental performance and protect the well-being of our communities.

NOVA Chemicals is a member of the Chemistry Industry Association of Canada (CIAC) (<http://www.canadianchemistry.ca/>) and as such follows the association's [Responsible Care®](#) initiative. Responsible Care was developed in Canada in 1985 as a program to collectively improve the environmental, health and safety performance of member companies. Responsible Care has been very successful in this regard and has expanded into a global movement, now practiced in more than 60 countries around the world, and overseen by the International Council of Chemical Associations (<https://www.icca-chem.org>).

Responsible Care® is the chemistry industry's commitment to sustainability – the betterment of society, the environment, and the economy. Through Responsible Care®, CIAC member-companies strive to “do the right thing and be seen to do the right thing.”

The principles of Responsible Care® have been applied throughout our processes and facilities. We continually innovate for safer and greener products and processes, and work to continuously improve our environmental, health and safety performance.

Responsible Care® covers all aspects of the company's business, over the entire life cycle of our products. In addition, NOVA Chemicals must annually reaffirm our commitment to the [Ethic and Principles for Sustainability](#), and the [Codes of Practice](#), and undergo a regular third-party verification process that allows independent experts and members of the public to verify that we are living up to the standards set by Responsible Care®.

NOVA Chemicals has three sites located in Sarnia-Lambton: one petrochemical manufacturing site (Corunna Site), and two polyethylene manufacturing sites (Moore Site and St. Clair River Site). These three sites are subject to the Toxics Reduction Program, implemented by the Ontario Ministry of the Environment, Conservation and Parks (MECP) in 2009.

The Toxics Reduction Act (2009) (the Act) and its associated Ontario Regulation 455/09 (the Regulation) aim to protect the health of people and the environment by reducing the use and emission of toxic substances. The Act requires regulated facilities to:

- Track and quantify the toxic substances used and created
- Develop plans to reduce the use and creation of these substances

- Make summary information available to the public

The Act and Regulation have been introduced in two phases. Phase I requires that 47 priority substances be included in the initial regulatory requirements for the 2010 and 2011 reporting years. Phase II, which includes all substances on the NPRI list, requires facilities to conduct reporting and planning for these substances in the 2012 reporting year. This annual toxic substance accounting report has been prepared as specified in section 10 of the Act and in accordance with Section 27(1) of the Regulation. For more information on the Toxics Reduction Act (2009) and Ontario Regulation 455/09, please visit: <https://www.ontario.ca/laws/statute/09t19>

For the purposes of maintaining confidentiality, NOVA Chemicals has reported 'Use', 'Created' and 'Contained in Product' quantities in the ranges prescribed by the MECP as follows:

- >0 to 1
- >1 to 10
- >10 to 100
- >100 to 1,000
- >1,000 to 10,000
- >10,000 to 100,000
- >100,000 to 1,000,000

Corunna Site

Facility and Company Information

Industrial Classification Codes

NPRI Code: 001776

CDN SIC Code: 3712 (Industrial Organic Chemical Inds)

U.S. SIC Code: 2869 (Industrial Organic Chemicals)

NAICS Code: 325110 (Petrochemical Mfg.)

Facility Information

NOVA CHEMICALS - Corunna Site

Street address:

785 Petrolia Line

Corunna, ON

N0N 1G0

Mailing address:

P.O Box 3060

Sarnia, ON

N7T 8C7

Spatial Coordinates

Latitude: 42.882500°

Longitude: -82.404400°

Number of employees: 463

Parent Company

Parent Company Name: NOVA Chemicals Corporation

Percentage Ownership: 100

Street address:

1000 7th Avenue SW

Calgary, AB

T2P 5L5

Mailing address:

P.O. Box 2518, Station M

Calgary, AB

T2P 5C6

Facility Contact

Name: Meaghan Lawrence

Position: Communications & Stakeholder Relations

Telephone Number: 519-481-2248

TRA Applicable Substances

Benzene, 1,3-butadiene, xylene (all isomers), toluene, ethyl benzene, naphthalene, sulphuric acid, phenol (and its salts), ammonia (total), nitrate ion (pH>6), 1,2,4-trimethylbenzene, cyclohexane, dicyclopentadiene, ethylene, isoprene, n-hexane, propylene, styrene, hydrogen sulphide, total reduced sulphur, butane (all isomers), butene (all isomers), carbon monoxide, decane (all isomers), heptane (all isomers), hexane (all isomers except n-), hexene (all isomers), nitrogen oxides, nonane (all isomers), octane (all isomers), particulate matter (10 microns), particulate matter (2.5 microns), total particulate matter, pentane (all isomers), pentene (all isomers), propane, sulphur dioxide and cycloheptanes met the criteria specified in Ontario Regulation 455/09 under the Toxics Reduction Act for the 2019 reporting year. There were no changes made to the process or tracking and quantification methods for these toxic substances during the 2019 reporting year. Substances were compared to the values reported for the 2018 reporting year. Differences in these values were primarily caused by changes in the various feeds and production levels.

The objective of the plans developed in 2012 for phase one substances and 2013 for phase two substances is for NOVA chemicals to continue to ensure that toxic substances are used and created in a responsible and efficient manner. Plans developed for phase one and phase two substances were not amended during the 2019 reporting year.

Benzene (71-43-2)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	-9%
Created	1,000 - 10,000 tonnes	846%
Contained in Product	10,000 - 100,000 tonnes	2%
Released to Air	12.649 tonnes	50%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	3.894 tonnes	39%
Transferred Offsite for Recycling	0 tonnes	0%

1,3-Butadiene (106-99-0)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	-19%
Created	10,000 - 100,000 tonnes	-4%
Contained in Product	10,000 - 100,000 tonnes	-15%
Released to Air	9.843 tonnes	-12%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Ethylbenzene (100-41-4)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	-8%
Created	1,000 - 10,000 tonnes	7%
Contained in Product	1,000 - 10,000 tonnes	5%
Released to Air	0.438 tonnes	-18%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	1.939 tonnes	2524%
Transferred Offsite for Recycling	0 tonnes	0%

Xylenes (1330-20-7)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
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Used	100 - 1,000 tonnes	23%
Created	10 - 100 tonnes	-82%
Contained in Product	1,000 - 10,000 tonnes	-18%
Released to Air	1.3 tonnes	-8%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	7.695 tonnes	1936%
Transferred Offsite for Recycling	0 tonnes	0%

Toluene (108-88-3)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	0%
Created	100 - 1,000 tonnes	-43%
Contained in Product	10,000 - 100,000 tonnes	-3%
Released to Air	2.507 tonnes	-4%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	6.391 tonnes	30333%
Transferred Offsite for Recycling	0 tonnes	0%

Naphthalene (91-20-3)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	-1%
Created	0 tonnes	0%
Contained in Product	100 - 1,000 tonnes	-30%
Released to Air	0.797 tonnes	100%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0.165 tonnes	-92%
Transferred Offsite for Recycling	0 tonnes	0%

Sulphuric Acid (7664-93-9)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	0%
Created	0 tonnes	0%

Contained in Product	0 tonnes	0%
Released to Air	38.653 tonnes	-19%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Phenol (and its salts) (108-95-2)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	4.942 tonnes	0%
Released To Water	0.022 tonnes	10%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Nitrate Ion (PH>=6)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	0 tonnes	-100%
Contained in Product	0 tonnes	0%
Released to Air	0 tonnes	0%
Released To Water	0 tonnes	-100%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Ammonia (Total)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	0 tonnes	-100%
Contained in Product	0 tonnes	0%
Released to Air	0 tonnes	0%

Released To Water	0 tonnes	-100%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

1,2,4-Trimethylbenzene (95-63-6)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	0 tonnes	-100%
Contained in Product	0 tonnes	-100%
Released to Air	0 tonnes	0%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0.0196 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Cyclohexane (110-82-7)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	467%
Created	1,000 - 10,000 tonnes	54%
Contained in Product	1,000 - 10,000 tonnes	54%
Released to Air	0.72 tonnes	-28%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Dicyclopentadiene (77-73-6)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	-5%
Created	0 tonnes	0%
Contained in Product	1,000 - 10,000 tonnes	16%
Released to Air	0.233 tonnes	-70%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%

Disposed Onsite	0 tonnes	0%
Disposed Offsite	0.429 tonnes	-73%
Transferred Offsite for Recycling	0 tonnes	0%

Ethylene (74-85-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	19%
Created	100,000 - 1,000,000 tonnes	3%
Contained in Product	100,000 - 1,000,000 tonnes	3%
Released to Air	22.235 tonnes	-27%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Isoprene (78-79-5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	>1,000,000 kg	9%
Created	100,000 - 1,000,000 kg	-34%
Contained in Product	>1,000,000 kg	-8%
Released to Air	0.266 kg	100%
Released To Water	0 kg	0%
Released to Land	0 kg	0%
Disposed Onsite	0 kg	0%
Disposed Offsite	0 kg	0%
Transferred Offsite for Recycling	0 kg	0%

n-Hexane (110-54-3)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	0%
Created	1,000 - 10,000 tonnes	58%
Contained in Product	1,000 - 10,000 tonnes	38%
Released to Air	27.354 tonnes	56%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%

Transferred Offsite for Recycling	0 tonnes	0%
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Propylene (115-07-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	-8%
Created	10,000 - 100,000 tonnes	-38%
Contained in Product	10,000 - 100,000 tonnes	-18%
Released to Air	55.18 tonnes	62%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Styrene (10-42-5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-9%
Created	0 tonnes	0%
Contained in Product	1 - 10 tonnes	100%
Released to Air	0.08 tonnes	100%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0.016 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Hydrogen Sulphide (7783-06-4)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 - 1 tonnes	1040%
Created	0 tonnes	0%
Contained in Product	0 - 1 tonnes	10%
Released to Air	0 tonnes	0%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Total Reduced Sulphur

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	-15%
Created	0 tonnes	0%
Contained in Product	0 - 1 tonnes	-7%
Released to Air	3.55 tonnes	9%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Butane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-81%
Created	1,000 - 10,000 tonnes	100%
Released to Air	20.197 tonnes	2%

Butene (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10,000 - 100,000 tonnes	-19%
Created	1,000 - 10,000 tonnes	-26%
Released to Air	2.806 tonnes	-30%

Carbon Monoxide (630-08-0)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	100 - 1,000 tonnes	4%
Released to Air	706.795 tonnes	4%

Decane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	964%
Created	100 - 1,000 tonnes	-20%
Released to Air	1.48 tonnes	-3%

Heptane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	48%
Created	100 - 1,000 tonnes	100%
Released to Air	4.053 tonnes	-21%

Hexane (all isomers except n-)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	339%
Created	100 - 1,000 tonnes	-14%
Released to Air	0 tonnes	-100%

Hexene (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-7%
Created	0 tonnes	0%
Released to Air	0 tonnes	0%

Nitrogen oxides (11104-93-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1,000 - 10,000 tonnes	0%
Released to Air	1622.047 tonnes	0%

Nonane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	-45%
Created	100 - 1,000 tonnes	24%
Released to Air	0.554 tonnes	100%

Octane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	-37%
Created	100 - 1,000 tonnes	-49%
Released to Air	0.789 tonnes	100%

Particulate Matter (10)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
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Used	0 tonnes	0%
Created	10 - 100 tonnes	-31%
Released to Air	42.374 tonnes	-31%

Particulate Matter (2.5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	-27%
Released to Air	36.413 tonnes	-27%

Total Particulate Matter

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	-35%
Released to Air	49.821 tonnes	-35%

Pentane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	-38%
Created	0 tonnes	0%
Released to Air	162.882 tonnes	175%

Pentene (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-17%
Created	0 tonnes	0%
Released to Air	0.3 tonnes	538%

Propane (74-98-6)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-83%
Created	0 tonnes	0%
Released to Air	22.238 tonnes	100%

Sulphur dioxide (7446-09-5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	100 - 1,000 tonnes	-32%

Released to Air	716.477 tonnes	-32%
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Cycloheptane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	-10%
Created	100 - 1,000 tonnes	100%
Released to Air	0 tonnes	0%

Note: disposed off-site includes off-site disposal and off-site treatment prior to final disposal

Annual Certification Statement

In accordance with s.19 of O. Reg. 455/09, the highest-ranking employee at the facility electronically certified the toxic substance plan. A copy of the electronic certification is provided in Attachment 1.

Moore Site

Facility and Company Information

Industrial Classification Codes

NPRI Code: 001788

CDN SIC Code: 3731 (Plastic and Synthetic Resins Inds)

U.S. SIC Code: 2821 (Plastic Materials and Resins)

NAICS Code: 325210 (Resin and Synthetic Rubber)

Facility Information

NOVA CHEMICALS - Moore Site

Street address:

510 Moore Line

Mooretown, ON

N0N 1M0

Mailing address:

P.O Box 3042

Sarnia, ON

N7T 8C9

Spatial Coordinates

Latitude: 42.848900°

Longitude: -82.424400°

Number of employees: 205

Parent Company

Parent Company Name: NOVA Chemicals Corporation

Percentage Ownership: 100

Street address:

1000 7th Avenue SW

Calgary, AB

T2P 5L5

Mailing address:

P.O. Box 2518, Station M

Calgary, AB

T2P 5C6

Facility Contact

Name: Meaghan Lawrence

Position: Communications & Stakeholder Relations

Telephone Number: 519-481-2248

TRA Applicable Substances

Sulphuric acid, naphthalene, hexavalent chromium (and its compounds), acetone, carbon monoxide, ethylene, hexane (all isomers), isopropyl alcohol, nitrogen oxides, nonylphenol, particulate matter (10 microns), particulate matter (2.5 microns), total particulate matter, pentene (all isomers), propylene and sulphur dioxide met the criteria specified in Ontario Regulation 455/09 under the Toxics Reduction Act for the 2019 reporting year. There were no changes made to the process or tracking and quantification methods for these toxic substances during the 2019 reporting year. Substances were compared to the values reported for the 2018 reporting year. Differences in these values arose from changes in usage of chemicals, quality of combusted materials, and production level.

The objective of the plans developed in 2012 for phase one substances and in 2013 for phase two substances was for NOVA chemicals to continue to ensure that toxic substances are used and created in a responsible and efficient manner. Plans developed for phase one and two substances were not amended during the 2019 reporting year.

Sulphuric Acid (7664-93-9)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	-26%
Created	0 - 1 tonnes	-89%
Contained in Product	0 tonnes	0%
Released to Air	0.014 tonnes	-89%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Naphthalene (91-20-3)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 - 1 tonnes	-100%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	0.00018 tonnes	38%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Hexavalent Chromium*

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 kg	17%
Created	0 kg	0%
Contained in Product	0 kg	0%
Released to Air	0 kg	-100%
Released To Water	0 kg	0%
Released to Land	0 kg	0%
Disposed Onsite	0 kg	0%
Disposed Offsite	0-1 kg	-77%
Transferred Offsite for Recycling	0 kg	0%

Acetone (67-64-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	39%

Contained in Product	0 tonnes	0%
Released to Air	0 tonnes	0%

Ethylene (74-85-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100,000 - 1,000,000 tonnes	8%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	182.511 tonnes	-28%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Isopropyl Alcohol (67-63-0)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	36%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	2.742 tonnes	-88%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	633.524 tonnes	33%
Transferred Offsite for Recycling	0 tonnes	0%

Propylene (15-07-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	-14%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	1.053 tonnes	-85%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Nonylphenol* (and its ethoxylates)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100,000 - 1,000,000 kg	16%
Created	0 kg	0%
Contained in Product	0 kg	0%
Released to Air	0 kg	0%
Released To Water	0 kg	0%
Released to Land	0 kg	0%
Disposed Onsite	0 kg	0%
Disposed Offsite	0.116 kg	-98%
Transferred Offsite for Recycling	0 kg	0%

Carbon Monoxide (630-08-0)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	25%
Released to Air	63.263 tonnes	25%

Nitrogen Oxides (11104-93-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	5%
Released to Air	92.359 tonnes	5%

Sulphur Dioxide (7446-09-5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	0 - 1 tonnes	-95%
Released to Air	0.235 tonnes	-95%

Particulate Matter (10)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	1%
Released to Air	7.251 tonnes	1%

Particulate Matter (2.5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
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Used	0 tonnes	0%
Created	1 - 10 tonnes	3%
Released to Air	7.251 tonnes	3%

Total Particulate Matter

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	0%
Released to Air	7.251 tonnes	0%

Hexene (all isomers) (25264-93-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	1%
Created	0 tonnes	0%
Released to Air	1.615 tonnes	-51%

Pentane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100 - 1,000 tonnes	28%
Created	0 tonnes	0%
Released to Air	10.661 tonnes	633%

Note: disposed off-site includes off-site disposal and off-site treatment prior to final disposal

Annual Certification Statement

In accordance with s.19 of O. Reg. 455/09, the highest-ranking employee at the facility electronically certified the toxic substance plan. A copy of the electronic certification is provided in Attachment 2.

St. Clair River Site

Facility and Company Information

Industrial Classification Codes

NPRI Code: 004700

CDN SIC Code: 3731 (Plastic and Synthetic Resins Inds)

U.S. SIC Code: 2821 (Plastic Materials and Resins)

NAICS Code: 325210 (Resin and Synthetic Rubber)

Facility Information

NOVA CHEMICALS - St. Clair River Site

Street address:

285 Albert Street

Corunna, ON

N0N 1G0

Mailing address:

P.O Box 3081

Sarnia, ON

N7T 8C1

Spatial Coordinates

Latitude: 42.897100°

Longitude: -82.439900°

Number of employees: 135

Parent Company

Parent Company Name: NOVA Chemicals Corporation

Percentage Ownership: 100

Street address:

1000 7th Avenue SW

Calgary, AB

T2P 5L5

Mailing address:

P.O. Box 2518, Station M

Calgary, AB

T2P 5C6

Facility Contact

Name: Meaghan Lawrence

Position: Communications & Stakeholder Relations

Telephone Number: 519-481-2248

TRA Applicable Substances

Sulphuric acid, biphenyl, butene (all isomers), carbon monoxide, cyclohexane, ethylene, nitrogen oxides, particulate matter (10 microns), particulate matter (2.5 microns), total particulate matter, pentane (all isomers) and acetone met the criteria specified in Ontario Regulation 455/09 under the Toxics Reduction Act for the 2019 reporting year. There were no changes made to the process or tracking and quantification methods for these toxic substances during the 2019 reporting year. Differences from 2018 to 2019 were primarily attributed to changes in usage of chemicals and production level.

The objective of the plans developed in 2012 for phase one substances and 2013 for phase two substances is for NOVA chemicals to continue to ensure that toxic substances are used and created in a responsible and efficient manner. Plans developed for phase one substances were not amended during the 2019 reporting year.

Sulphuric Acid (7664-93-9)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	10 - 100 tonnes	-4%
Created	0 - 1 tonnes	-9%
Contained in Product	0 tonnes	0%
Released to Air	0.02 tonnes	100%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Biphenyl (92-52-4)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1 - 10 tonnes	-100%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	1.181 tonnes	-90%
Released To Water	0 tonnes	-100%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0.15 tonnes	100%
Transferred Offsite for Recycling	0 tonnes	0%

Cyclohexane (110-82-7)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	-99%
Created	0 tonnes	0%
Contained in Product	10 - 100 tonnes	-100%
Released to Air	221.904 tonnes	2339%
Released To Water	0.086 tonnes	100%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	156.515 tonnes	100%
Transferred Offsite for Recycling	0 tonnes	0%

Ethylene (74-85-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	100,000 - 1,000,000 tonnes	100%
Created	0 tonnes	-100%
Contained in Product	10,000 - 100,000 tonnes	100%
Released to Air	13.076 tonnes	-86%
Released To Water	0 tonnes	0%
Released to Land	0 tonnes	0%
Disposed Onsite	0 tonnes	0%
Disposed Offsite	0 tonnes	0%
Transferred Offsite for Recycling	0 tonnes	0%

Acetone (67-64-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	0 tonnes	0%
Contained in Product	0 tonnes	0%
Released to Air	0 tonnes	0%

Nitrogen Oxides (11104-93-1)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	2473%
Released to Air	89.706 tonnes	2473%

Carbon Monoxide (630-08-0)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	-100%
Created	10 - 100 tonnes	100%
Released to Air	44.37 tonnes	-82%

Particulate Matter (10)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	22%
Released to Air	3.254 tonnes	22%



Particulate Matter (2.5)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	-76%
Released to Air	2.467 tonnes	-76%

Total Particulate Matter

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	10 - 100 tonnes	770%
Released to Air	10.411 tonnes	770%

Butene (all isomers) (25167-67-3)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	1,000 - 10,000 tonnes	100%
Created	0 tonnes	-100%
Released to Air	11.21 tonnes	-79%

Pentane (all isomers)

Tracking and Quantification	2019 Reporting Year	Change From 2018 Reporting Year
Used	0 tonnes	0%
Created	1 - 10 tonnes	-98%
Released to Air	1.122 tonnes	100%

Note: disposed off-site includes off-site disposal and off-site treatment prior to final disposal

Annual Certification Statement

In accordance with s.19 of O. Reg. 455/09, the highest-ranking employee at the facility electronically certified the toxic substance plan. A copy of the electronic certification is provided in Attachment 3.

Attachment 1: Copy of Electronic Certification for Corunna Site

facility(ies) identified below are accurate, based on reasonable estimates using available data. The data for the facility(ies) that I represent are hereby submitted to the programs identified below using the Single Window Reporting Application.

I also acknowledge that the data will be made public.

Note: Only the person identified as the Certifying Official or the authorized delegate should submit the report(s) identified below.

Company Name

NOVA Chemicals (Canada) Ltd.

Certifying Official (or authorized delegate)

Rob Thompson

Report Submitted by

Rob Thompson

I, the Certifying Official or authorized delegate, agree with the statements above and acknowledge that by pressing the "Submit Report(s)" button, I am electronically certifying and submitting the facility report(s) for the identified company to its affiliated programs.

ON MECP TRA - Electronic Certification Statement

Annual Report Certification Statement

As of 2020-07-27, I, Rob Thompson, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

TRA Substance List*

CAS RN	Substance Name
106-99-0	1,3-Butadiene
71-43-2	Benzene
NA - 24	Butane (all isomers)
25167-67-3	Butene (all isomers)
630-08-0	Carbon monoxide
NA - 25	Cycloheptane (all isomers)
110-82-7	Cyclohexane
NA - 28	Decane (all isomers)
77-73-6	Dicyclopentadiene
100-41-4	Ethylbenzene
74-85-1	Ethylene
NA - 31	Heptane (all isomers)
NA - 32	Hexane (all isomers excluding n-hexane)
25264-93-1	Hexene (all isomers)
78-79-5	Isoprene
91-20-3	Naphthalene
110-54-3	n-Hexane
11104-93-1	Nitrogen oxides (expressed as NO2)
NA - 33	Nonane (all isomers)
NA - 34	Octane (all isomers)
NA - 35	Pentane (all isomers)
NA - 36	Pentene (all isomers)
108-95-2	Phenol (and its salts)
NA - M09	PM10 - Particulate Matter <= 10 Microns
NA - M10	PM2.5 - Particulate Matter <= 2.5 Microns
74-98-6	Propane
115-07-1	Propylene (propene)

100-42-5	Styrene
7446-09-5	Sulphur dioxide
7664-93-9	Sulphuric acid
108-88-3	Toluene
NA - M08	Total Particulate Matter
NA - M14	Total reduced sulphur (expressed as hydrogen sulphide)
1330-20-7	Xylene (mixed isomers)

Company Name

NOVA Chemicals (Canada) Ltd.

Highest Ranking Employee

Rob Thompson

Report Submitted by

Rob Thompson

Website address

I, the highest ranking employee, agree with the certification statement(s) above and acknowledge that by checking the box I am electronically signing the statement(s). I also acknowledge that by pressing the 'Submit Report(s)' button I am submitting the facility record(s)/report(s) for the identified facility to the Director under the Toxics Reduction Act, 2009. I also acknowledge that the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 provide the authority to the Director under the Act to make certain information as specified in subsection 27(5) of Ontario Regulation 455/09 available to the public.

Submitted Report

Period	Submission Date	Facility Name	Province	City	Programs
2019	2020-07-27	Corunna Site	Ontario	Corunna	NPRI, ON MECP TRA, NERM

Note: If there is a change in the contact information for the facility, a change in the owner or operator of the facility, if operations at the facility are terminated, or if information submitted for any previous year was mistaken or inaccurate, please update this information through SWIM or by contacting the National Pollutant Release Inventory directly.

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Attachment 2: Copy of Electronic Certification for Moore Site

CAS RN	Substance Name	Were any amendments made to the toxic substance reduction plan during the reporting period	Description any amendments that were made to the toxic substance reduction plan during the reporting period	Provide a public summary of the description of any amendments that were made to the toxic substance reduction plan during the reporting period
7664-93-9	Sulphuric acid	No		
NA - M08	Total Particulate Matter	No		

Feedback

Comments on the Reporting System

Satisfied. Few technical issues and they were easily resolved.

Report Submission and Electronic Certification

NPRI - Electronic Statement of Certification

Specify the language of correspondence

English

Comments (optional)

I hereby certify that I have exercised due diligence to ensure that the submitted information is true and complete. The amounts and values for the facility(ies) identified below are accurate, based on reasonable estimates using available data. The data for the facility(ies) that I represent are hereby submitted to the programs identified below using the Single Window Reporting Application.

I also acknowledge that the data will be made public.

Note: Only the person identified as the Certifying Official or the authorized delegate should submit the report(s) identified below.

Company Name

NOVA Chemicals (Canada) Ltd.

Certifying Official (or authorized delegate)

Rob Thompson

Report Submitted by

Rob Thompson

I, the Certifying Official or authorized delegate, agree with the statements above and acknowledge that by pressing the "Submit Report(s)" button, I am electronically certifying and submitting the facility report(s) for the identified company to its affiliated programs.

ON MECP TRA - Electronic Certification Statement

Annual Report Certification Statement

As of 2020-07-27, I, Rob Thompson, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

TRA Substance List*

CAS RN	Substance Name
630-08-0	Carbon monoxide
74-85-1	Ethylene
NA - 19	Hexavalent chromium (and its compounds)
25264-93-1	Hexene (all isomers)
67-63-0	Isopropyl alcohol (Isopropanol)
11104-93-1	Nitrogen oxides (expressed as NO2)
NA - 20	Nonylphenol and its ethoxylates
NA - 35	Pentane (all isomers)
NA - M09	PM10 - Particulate Matter <= 10 Microns
NA - M10	PM2.5 - Particulate Matter <= 2.5 Microns
115-07-1	Propylene (propene)
7446-09-5	Sulphur dioxide
7664-93-9	Sulphuric acid

Company Name

NOVA Chemicals (Canada) Ltd.

Highest Ranking Employee

Rob Thompson

Report Submitted by

Rob Thompson

Website address

www.novachemicals.com

I, the highest ranking employee, agree with the certification statement(s) above and acknowledge that by checking the box I am electronically signing the statement(s). I also acknowledge that by pressing the 'Submit Report(s)' button I am submitting the facility record(s)/report(s) for the identified facility to the Director under the Toxics Reduction Act, 2009. I also acknowledge that the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 provide the authority to the Director under the Act to make certain information as specified in subsection 27(5) of Ontario Regulation 455/09 available to the public.

Submitted Report

Period	Submission Date	Facility Name	Province	City	Programs
2019	2020-07-27	Moore Site	Ontario	Mooretown	NPRI,ON MECP TRA,NERM

Note: If there is a change in the contact information for the facility, a change in the owner or operator of the facility, if operations at the facility are terminated, or if information submitted for any previous year was mistaken or inaccurate, please update this information through SWIM or by contacting the National Pollutant Release Inventory directly.

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Attachment 3: Copy of Electronic Certification for St. Clair River Site



Note: Only the person identified as the Certifying Official or the authorized delegate should submit the report(s) identified below.

Company Name

NOVA Chemicals Corporation

Certifying Official (or authorized delegate)

Rob Thompson

Report Submitted by

Rob Thompson

I, the Certifying Official or authorized delegate, agree with the statements above and acknowledge that by pressing the "Submit Report(s)" button, I am electronically certifying and submitting the facility report(s) for the identified company to its affiliated programs.

ON MECP TRA - Electronic Certification Statement

Annual Report Certification Statement

As of 2020-07-27, I, Rob Thompson, certify that I have read the reports on the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the information contained in the reports is factually accurate and the reports comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

TRA Substance List*

CAS RN	Substance Name
67-64-1	Acetone
92-52-4	Biphenyl
25167-67-3	Butene (all isomers)
630-08-0	Carbon monoxide
110-82-7	Cyclohexane
74-85-1	Ethylene
11104-93-1	Nitrogen oxides (expressed as NO2)
NA - 35	Pentane (all isomers)
NA - M09	PM10 - Particulate Matter <= 10 Microns
NA - M10	PM2.5 - Particulate Matter <= 2.5 Microns
7446-09-5	Sulphur dioxide
7664-93-9	Sulphuric acid
NA - M08	Total Particulate Matter

Company Name

NOVA Chemicals Corporation

Highest Ranking Employee

Rob Thompson

Report Submitted by

Rob Thompson

Website address

www.novachemicals.com

I, the highest ranking employee, agree with the certification statement(s) above and acknowledge that by checking the box I am electronically signing the statement(s). I also acknowledge that by pressing the 'Submit Report(s)' button I am submitting the facility record(s)/report(s) for the identified facility to the Director under the Toxics Reduction Act, 2009. I also acknowledge that the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 provide the authority to the Director under the Act to make certain information as specified in subsection 27(5) of Ontario Regulation 455/09 available to the public.

Submitted Report

Period	Submission Date	Facility Name	Province	City	Programs
2019	2020-07-27	St. Clair River Site	Ontario	Corunna	NPRI, ON MECP TRA, NERM

Note: If there is a change in the contact information for the facility, a change in the owner or operator of the facility, if operations at the facility are terminated, or if information submitted for any previous year was mistaken or inaccurate, please update this information through SWIM or by contacting the National Pollutant Release Inventory directly.

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