



Accelerating Customer Success

Through Ingenuity
& Collaboration

WHO IS NOVA CHEMICALS?

NOVA Chemicals is a leading supplier of polyethylene resins.

- > Canadian company
- > 2,400 Employees worldwide
- > \$3.6 billion USD annual sales, 2019
- > Vertically integrated, 100% natural gas/light feedstocks
- > Ethylene production in Alberta, Ontario and Louisiana

Our Purpose

To help shape a world where the plastic products vital to our health and happiness are even better tomorrow than they are today.

Our Mission

To be the leader in innovation that enables our customers to deliver plastic products that make everyday life healthier, easier and safer.



WHY NOVA CHEMICALS?

We only succeed when our customers succeed in their businesses. And that can only be achieved through value chain collaboration. How do we do it?

Our people

- > Deep resin, structures, and applications expertise
- > Market focus team structure
- > Passionate dedication

Proprietary polyethylene technology

- > Advanced SCLAIRTECH™ dual-reactor octene technology

State-of-the-art facilities

- > Centre for Applied Research
- > Centre for Performance Applications
- > World-scale production assets

Peace of mind

- > Protection of IP through NDAs & JDAs



“ We only succeed when our customers succeed in their businesses ”

TECHNICAL CAPABILITIES

Our goal is to help our customers bring better-designed, better-performing products to market more quickly.

CENTRE FOR PERFORMANCE APPLICATIONS

87,000 square foot facility in Calgary, Alberta dedicated to polyethylene applications development.



- 1 Customer Collaboration Hub
- 2 Six Film Extrusion Lines Including A 9-Layer Semi-Commercial Line
Commercial Quality Coextruded Films and Laminates
- 3 Comprehensive Test Capabilities
Physical, analytical and package testing

- 4 Full Suite Of Flexible Converting Equipment
Capabilities Include Production of Prototype Engineered Films and Packages
 - > VFFS & HFFS
 - > Shrink Tunnel
 - > Laminator
 - > Thermoformer
- 5 Rotational Molding and Caps & Closures Equipment And Labs

MODELING AND SIMULATION

BONFIRE® Film Development Platform



A proprietary suite of tools for designing and improving complex multilayer films

Closure and Rotational Modeling and Simulation

Simulation of production and end-use performance to speed time to market for new designs and materials



E-commerce has been growing exponentially for years, and the COVID-19 pandemic has only accelerated this trend.

Consumers love the convenience and relative safety of delivered goods, but they're frustrated by excess packaging and damaged shipments. Optimized packaging reduces both of these problems and is recyclable as well. Our e-commerce team is supporting our customers in delivering the most sustainable e-commerce packaging solutions. We offer resins and expertise to help optimize all three types of e-commerce packaging: primary, shipping, and protective.



PELLET TO PACKAGE APPLICATION DEVELOPMENT

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SUSTAINABILITY

Our Sustainability Strategy

Circular Economy



We are developing a portfolio of new and emerging products and technologies to recapture the value of plastic and create a world free of plastic pollution.

Care in Operations



We take care of the air, water, land and biodiversity related to the operation of our facilities.

Climate Care



We are committed to reducing our impact on our climate by managing our greenhouse gas (GHG) emissions in a responsible way.

Citizenship



We provide leadership and resources to end plastic waste in the environment, promote natural resource conservation, and protect ocean health.

We are a good neighbor that cares deeply for the communities where we live and work.

“ We are eager to work with industry, governments, communities and consumers to bring about meaningful, systemic and permanent solutions to promote a plastics circular economy while keeping plastics out of our oceans. We know this is a solvable problem. ”

- Sarah Marshall, *Director of Sustainability*

Global Initiatives

Founding member



Strategic partner



Packaging Sustainability

Helping brand owners and retailers meet their goals for recyclable and recycled-content packaging

As global citizens, we must work together to keep plastics out of the natural environment and move to a circular economy where the value of post-use plastics is recovered to be used again and again. Simply put, plastic products must be designed for easier recycling and recovery.

At NOVA Chemicals, we have the polyethylene resins and expertise to help converters and brand owners meet their sustainability goals. Our circular economy team works closely with our dedicated regulatory, product safety and industrial hygiene teams on resin assessment and safety in use. Our product sustainability work is focused in three key areas:

1. MATERIAL REDUCTION

Source reduction is the first goal of a circular economy. We have several tools, resins and film structure designs that help our customers create packaging that meets performance requirements with less material and less energy in the converting process.

2. DESIGNING FOR RECYCLABILITY

For several years, we’ve been helping our customers and their customers meet their goals by moving from multi-polymer or alternative material packaging to PE-based, recyclable solutions. Our expertise includes:

- Film structure “recipes” to the specific needs of each packaging format, performance requirements and film and packaging line conditions.
- Polypropylene to polyethylene conversion for CSD and hotfill applications, and pouch fitments
- Machine direction (MDO) and biaxial orientation (BOPE) processing technologies

3. PCR-CONTENT RESINS AND FILM DESIGN

NOVA Chemicals is actively pursuing the opportunity to offer our customers a suite of PCR-containing resins for a range of rigid and flexible application needs. Our planned PCR portfolio will include HDPE FDA-NOL (acceptable for food contact), standard HDPE and (L)LDPE.

Today, we have a suite of ready-to-recycle virgin resin offerings formulated to compensate for higher percentages of PCR incorporation. We’re also working with customers to develop film structure designs that incorporate recyclate and have performance comparable to 100% virgin resin films.

NOVA Chemicals is investing in both mechanical and advanced recycling

In mechanical recycling, post-use plastics are sorted, baled, shredded and washed, and finally repelletized for use in new plastic goods and packaging. Advanced recycling refers to several different processes that return post-use plastics to their basic building blocks for creating a versatile mix of new plastics, chemicals, fuels, and other products.

We are teaming up with a number of mechanical recyclers across North America to offer a range of recycled high-density and low/linear low polyethylene (rHDPE and rLLDPE) for food packaging, closures and other applications. We have also entered into a joint development agreement with Enerkem to pursue the creation of a new gasification technology that will convert synthetic natural gas (syngas) directly into ethylene.





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