

Building on existing polymers . . .

NOVA Chemicals has two polymer businesses: Polyethylene and Styrenic polymers. Both product lines are established, high-volume plastic materials used to manufacture a multitude of basic consumer and industrial applications. Descriptions of these core products are found below. The facing page describes our approach to bringing value-added products to market, and behind the overlap you will find a sampling of these products.

HIGH-DENSITY POLYETHYLENE

High-density polyethylene (HDPE) is the most widely used PE resin in the world. It is the strongest, most rigid form of PE and is a versatile resin for a multitude of consumer and industrial products. You will find HDPE in common applications ranging from toys, beverage containers, medical packaging and detergent bottles — to shipping containers and industrial drums.



LOW-DENSITY POLYETHYLENE

The first low-density polyethylene (LDPE) was used in 1939 and has been a kitchen staple ever since. Typical LDPE applications include, grocery sacks, frozen food bags, squeezable bottles and bubble pack. Linear low-density PE (LLDPE) was introduced in 1977 and expanded the polyethylene marketplace. Today, LLDPE resins rank 2nd in overall PE consumption and are used in products like shrink film, stretch wrap, heavy-duty bags, liquid packaging and barrier films.

SOLID POLYSTYRENE

Solid Polystyrene (SPS) was the first bead-form plastic ever made — today, it is one of the most versatile and widely used plastics in the world. SPS comes in two forms, crystal and impact, and its end-use products are part of our daily lives. You will find SPS in disposable foodservice items and food packaging, appliance parts, toys, office accessories and cosmetics packaging.



EXPANDABLE POLYSTYRENE

Our Beaver Valley site was the first facility in North America to manufacture Expandable Polystyrene (EPS). EPS resins are small beads that expand under increased temperature and pressure. When expanded, these beads deliver superior thermal insulation properties and excellent cushioning protection. End-use products include construction materials, electronics and appliance protective packaging, produce boxes and coolers.

with a new portfolio of higher-value products.

By leveraging our existing assets and technologies, we are creating value for both our customers and shareholders. The following five product descriptions provide an overview of our plans for the future of our commodity polymers. By 2005, we expect 30% of our polymer volume will be from higher-margin, differentiated commodity products, such as those featured below.

DYLARK FG

Convenience food packaging is one of the fastest growing polymer markets — expanding at a rate of 2 times GDP in North America. DYLARK FG is a new styrene maleic anhydride copolymer that competes with specialty polypropylene in microwavable food packaging markets. Unlike polypropylene, DYLARK FG runs on our customers' existing equipment, allowing them to compete in a new high-value market with no additional capital investment.

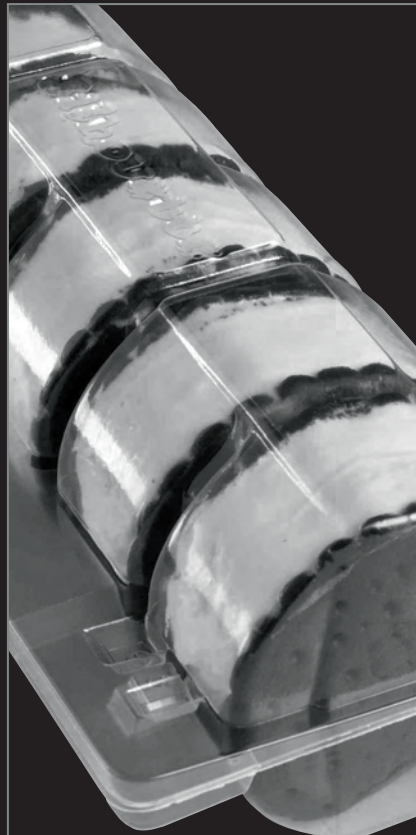
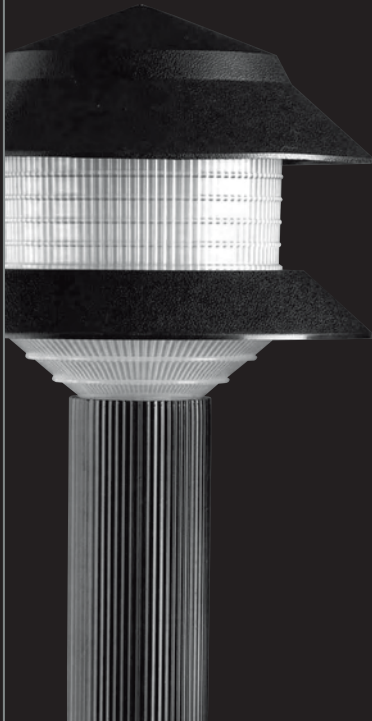


ARCEL

ARCEL resins are a one-of-a-kind, "inter-polymer" combining the best features of polyethylene and polystyrene. ARCEL is the only resilient foam product that can run in traditional EPS equipment. The fastest growing market segment for ARCEL is the protective packaging market, where ARCEL delivers both higher performance and lower total costs. To learn more about ARCEL see page 22.

STYROSUN

STYROSUN U.V.-resistant polymers are currently produced at our Breda, the Netherlands facility and were recently introduced in North America. The weatherability of this resin has made it a successful and well-established polymer for many applications, such as patio lights. With the extension into North America, sales of STYROSUN resins are expected to more than double by 2005.



ZYLAR EX

This next-generation resin extends our existing and proven ZYLAR acrylic copolymer technology into extrusion/thermoforming markets. Customers can run ZYLAR EX on their existing equipment and potentially reduce capacity expansion costs by 25%. Additionally, they can produce more parts per pound than with competitive resins. The exceptional cold temperature impact properties of ZYLAR EX make it an excellent material for clear frozen food packaging, a rapidly growing market.

SURPASS

SURPASS polyethylene is manufactured using our Advanced SCLAIRTECH technology and utilizes our proprietary single-site catalysts. SURPASS resins deliver a unique combination of processability, puncture resistance and clarity that is not found in traditional metallocene resins. Following the successful launch of film resins in 2003, SURPASS molding resins are being commercialized in 2004. To learn more about SURPASS film see page 23.



to meet the needs of growing markets.

DIFFERENTIATED COMMODITY POLYMERS *from* **TRADITIONAL TECHNOLOGIES**

NOVA CHEMICALS IS BUILDING ON OUR KNOWLEDGE OF COMMODITY CHEMICALS TO DEVELOP A PORTFOLIO OF HIGHER-VALUE POLYMERS THAT COMPLEMENT OUR EXISTING PRODUCT LINE. ON THE NEXT FEW PAGES, YOU WILL FIND A SUMMARY OF OUR STRATEGY, A SAMPLING OF OUR NEWEST POLYMERS AND PROFILES OF TWO PRODUCTS THAT HAVE DEMONSTRATED SUCCESS. THESE UNIQUE PRODUCTS OFFER GREATER VALUE TO OUR CUSTOMERS WHILE CONTRIBUTING TO HIGHER MARGINS FOR NOVA CHEMICALS.

WE HAVE A SIMPLE AND FOCUSED STRATEGY:

- **STAY WITH WHAT WE KNOW.** The new products are based on our existing technologies and assets, and they are sold to our current customers for use in their existing equipment. Small changes to our core products can deliver big results for our customers, with little or no additional capital.
- **TAKE A PORTFOLIO APPROACH.** We focus our efforts on the areas most likely to succeed. We target applications that are growing the fastest, in markets that are the easiest to penetrate. This approach ensures higher success rates and greater returns.
- **INCREASE VALUE FOR OUR CUSTOMERS AND SHAREHOLDERS.** Our new products offer improved performance and processing advantages — allowing our customers to compete in an ever-changing, more-demanding marketplace. At the same time, we designed a low-risk approach for developing higher-margin products with little capital investment — decreasing risk and increasing reward for our investors.

← TURN

ARCEL moldable foam

Market: Protective Packaging

Market Potential: 2 billion lbs. globally

Market Growth: 2 times GDP



ARCEL is NOVA Chemicals' fastest growing resin and one of our highest-margin products. The resin is a polystyrene/polyethylene inter-polymer, which means it combines the best attributes of our two traditional polymers — the toughness of polyethylene and the processability of polystyrene. The key growth market for ARCEL is protective packaging — specifically for high-end electronics and computer equipment.

The value proposition for traditional protective packaging is rapidly changing due to growing online and catalog sales. In turn, there is an increase in direct, business-to-consumer deliveries, or 'uncontrolled shipping.' As a result, major electronics and computer manufacturers are experiencing more product damage than ever before and their replacement costs are rising. Consequently, our customers require a higher-performing resin to meet these more stringent conditions for protective packaging. ARCEL stands alone in delivering performance for both original equipment manufacturers and our customers.

For our customers, ARCEL runs faster and is the only high-performance durable foam that can run in standard EPS molding equipment — delivering more parts per pound and capital cost savings. When using ARCEL protective packaging, major equipment manufacturers are receiving fewer complaints and product returns from consumers. ARCEL resins offer unmatched value throughout the chain.



SURPASS film

Market: Specialty Film for Food Packaging
Market Potential: 500 million lbs. globally
Market Growth: 2 times GDP

NOVA Chemicals' SURPASS family of resins sets a new performance standard for the polyethylene film market. For the highly innovative food packaging market, our customers can make products that are stronger and thinner, with both improved clarity and better puncture performance. In most cases, SURPASS film resins run faster than competitive resins and also run on existing equipment, which translates into increased operating efficiency with no capital outlay for our customers.

Mohawk Northern Plastics was one of our first customers to enjoy the full benefits of SURPASS resins. Mohawk is an extruder/converter that produces a variety of produce and food packaging under the APEX 2000 and APEX 3000 trademarks, respected brand names in food packaging. Mohawk specifies SURPASS resins in a wide range of demanding packaging applications including stand-up and pillow-pack pouches, shrink film and heavy-duty shipping sacks.

SURPASS resins leverage our single-site catalyst technology and are manufactured at our world-scale Joffre, Alberta facility. The combination of our proprietary technology and highly efficient manufacturing allows NOVA Chemicals to compete profitably in specialty films, one of the fastest-growing, highest-value polyethylene packaging segments. In turn, customers such as Mohawk choose SURPASS resins for their exceptional clarity, strength and processing characteristics, which command premium pricing in their market.