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Your home for fresh ideas in packaging



Flexible Food & Specialty Packaging

Plastics – Asia Pacific

Our quest: To be the best

The Flexible Food & Specialty Packaging Group of The Dow Chemical Company (Dow) has a simple yet aggressive goal: We are on a quest to be the best supplier of resins to the flexible food packaging industry – to be the number one supplier worldwide by providing the broadest line of high performance products and services to help meet customers' demanding needs for innovative, cost-competitive solutions.

100 years old ... and still fresh!

Dow's 100+ years of building business relationships and consistently delivering quality, cost-efficient products has helped create a strong foundation of proven performance and customer confidence.

Today, as the unique flexible food and specialty packaging marketplace moves steadily into the twenty-first century, Dow is also pushing forward. We are committed as ever to the service of our customers around the world – responding better to your needs through fresh ideas, dedicated marketing, aggressive research, and responsive sales and technical resources that are committed to your success.

Doing business made easy

As a dedicated market supplier, we understand that your customers have very different requirements than commodity polyolefin users. Dow can help you ramp up new opportunities quickly, and we're also ready to discuss creative pricing options, innovative supply programs, and developmental allowances, just to name a few.

Doing business is made even easier through Dow's commitment to e-business and a host of convenient options, such as MyAccount@Dow, a secure internet site that offers easy product ordering and tracking; Autofax invoicing to provide detailed billing automatically at time of product delivery; and Developmental Support@Dow, our secure customer extranet site dedicated to accelerating and simplifying customers' developmental research.

When it comes to business assistance, Dow can also provide useful information on markets and trends within the packaging industry, including global market understanding and contacts.

Join our quest

The Dow plastics business group invites you to join us on our quest to be the best. We believe your business will enjoy the rewards of our mutual pursuit of success.

To discover more about what Dow has to offer you and your specialty packaging needs, contact your sales or technical service representative directly. They'll be happy to further discuss how the quest to be the best may directly benefit your business – and tell you how you can join us on the journey.

For more literature, technical data sheets, or additional information concerning Dow products for flexible packaging in food and specialty packaging applications, visit the appropriate web site as listed on the back of this brochure.

If you are not currently working with Dow, please call The Dow Customer Information Group (CIG) for your region using the contact numbers provided on the back of this brochure. You can also visit us on the web at www.dowplastics.com.

The staying power to assure you global supply and support; a wide range of products to answer every requirement; an innovative spirit that fuels product improvement and market breakthroughs; and expert technical and commercial support to help your organization be successful...that's the Dow Flexible Food & Specialty Packaging Group. We look forward to working with you.



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We're on a Quest
to Be the Best

Global TS&D • 24/5 CTSC access for qualified customers • Knowledgeable account personnel • Environmental issues management • Safety audit assistance • Consultative sales approach • Industry-specific, bi-monthly newsletter • Six Sigma • Customer-driven innovation • Industrial hygiene recommendations • FDA and regulatory issues assistance • MyAccount@Dow • Dedicated customer service representatives • Autofax invoicing • e-commerce focus • Supply chain optimization • Economic value added techniques • Developmental Support@Dow

Testing, training, and scale-up help

Food packaging has unique requirements. Dow can help with a wide variety of testing, training specifically designed for this packaging market, and equipment available to help you scale up new packaging films. Consider these options:

- Taste and odor testing capabilities
- Analytical and gel testing
- Specialized resin training for customer's sales and technical personnel
- Operator training
- Screw design and other mechanical recommendations
- Extrusion and fabrication consulting
- Environmental, Health, and Safety issues management
- FDA and regulatory issues assistance
- In-house developmental fabrication capabilities:
 - Blown film line
 - Cast film line
 - Extrusion coating & lamination line
 - SARAN™ PVDC coextrusion blown film lab line



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Such a commitment often takes new forms these days. Like embracing Six Sigma to evolve better business and manufacturing processes that can improve our efficiency, as well as our customers'. Like vigorously enforcing the tenets of Responsible Care® to help ensure the safety of our respective work forces, the communities in which we and you operate, and the environment as a whole. Or continuously reinvesting in our ability to serve the plastics industry. All of these efforts, and others, demonstrate a singular dedication toward excellence.

Global access & flexibility

As the map illustrates, no matter where your operations are located across the globe, you can plan confidently when you call on Dow.

To support your business, Dow has 18 polyethylene production sites – with more than 16 billion pounds of capacity – backed by the world's largest ethylene capacity to ensure continuous product supply. Additionally, 19 polystyrene production sites and five polypropylene sites produce 5.1 and 2.6 billion pounds, respectively, annually.

Manufacturing is supported by technical service sites around the world, including 10 research and development sites, and sales presence in more than 60 countries. These diverse, yet integrated, locations enable your global supply requirements to be fulfilled efficiently, while also helping you keep abreast of new products.

When you are using products and services from Dow, you are better enabled to expand globally without concerns of product availability and consistency. You can be assured that we can supply the resins you need – anywhere in the world. Your global requests can be fulfilled through local sales and technical service people, and important decisions on global agreements might be made more quickly. Plus, Dow is positioned to provide you with input on the opportunities present in other geographical areas, which could further enhance your position.



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Staying
Power

TABLE 1: Dow Products for Flexible Food and Specialty Packaging – Comparative Matrix

Resin Family	Targeted Product Uses	Key Properties	Cost Comments	Targeted to Replace	Reasons for Switching
High-performance resins					
SARAN™ Resins & Films	<ul style="list-style-type: none"> High barrier films- especially those needing clarity Retort films 	<ul style="list-style-type: none"> Oxygen, moisture and chemical barrier 	<ul style="list-style-type: none"> Better barrier at high humidities allows for thinner gauges versus EVOH in most barrier packaging applications 	<ul style="list-style-type: none"> EVOH, metallized films, foil, glass, metal 	<ul style="list-style-type: none"> Longer shelf life or lower cost when evaluated using real-world conditions Recent improvements in processability make SARAN Resins easier to use
PRIMACOR™ Copolymers	<ul style="list-style-type: none"> Tie-layer between foil and PE Tie-layer with other polar materials 	<ul style="list-style-type: none"> Excellent adhesion to foil and polyethylene Excellent environmental stress crack resistance 	<ul style="list-style-type: none"> Priced lower than ionomers Available in bulk quantities Better adhesion than EMAA resins 	<ul style="list-style-type: none"> Surlyn ionomers Nucrel EMAA resins 	<ul style="list-style-type: none"> Lower cost with better performance as a tie-layer Better taste and odor performance
AFFINITY™ Polyolefin Plastomers	<ul style="list-style-type: none"> High performance sealants 	<ul style="list-style-type: none"> Very low heat seal initiation Very good overall seal properties Excellent optics 	<ul style="list-style-type: none"> Priced much lower than ionomers Possess a density advantage over high % EVAs 	<ul style="list-style-type: none"> Surlyn ionomers 12-18% EVAs used as sealants 	<ul style="list-style-type: none"> Better performance at a reasonable premium versus EVAs Competitive performance at much lower cost versus ionomers Lower off-taste and off-odor characteristics versus EVAs and ionomers
VERIFLY™ Plastomers & Elastomers	<ul style="list-style-type: none"> BOPP sealants Lamination films Calendared and extruded soft films & sheets 	<ul style="list-style-type: none"> Unique combination of modulus and sealability with adhesive to PP Excellent optics 	<ul style="list-style-type: none"> Pricing similar to AFFINITY POP 	<ul style="list-style-type: none"> LLDPE resins PP terpolymers 	<ul style="list-style-type: none"> Excellent clarity and “sparkle” for customer appeal Ability to adhere to PE and PP resins “Forgiving” sealant performance
ATTANE™ Ultra Low Density Polyethylene (ULDPE) Resins	<ul style="list-style-type: none"> High tear and puncture applications, especially those needing superior optics 	<ul style="list-style-type: none"> Superior tear and abuse properties Very good optics 	<ul style="list-style-type: none"> Opportunity for downgauging in coextruded films Sells at a reasonable premium to DOWLEX Resins Competitive with 9-12% EVAs Possess density advantages versus EVAs 	<ul style="list-style-type: none"> 9-12% EVAs LLDPE resins 	<ul style="list-style-type: none"> Improved performance in the tear or puncture properties
AMPLIFY™ Functional Polymers	<ul style="list-style-type: none"> Tie-layer between polar and non-polar materials 	<ul style="list-style-type: none"> Reactive functionality or enhance adhesion to Nylon, EVOH, and cellulose Adhesion to PET, PC, glass, foil and polyolefins 	<ul style="list-style-type: none"> Excellent overall cost solution as tie-layers in barrier food packaging 	<ul style="list-style-type: none"> Surlyn ionomers Nucrel EMAA resins 	<ul style="list-style-type: none"> Lower cost with better performance as a tie-layer
INSPIRE™ Performance Polymers	<ul style="list-style-type: none"> Downgauge films needing clarity, retort, OPP film replacement 	<ul style="list-style-type: none"> Retort ability, grease resistance, heat resistance, clarity, stiffness plus processability 	<ul style="list-style-type: none"> Moderate premium over PP 	<ul style="list-style-type: none"> OPP films, HDPE films Cast film PP resins 	<ul style="list-style-type: none"> Ability to make blown PP films in-house, cost-effectively reducing need for purchased OPP films
Industry essential resins					
ELITE™ Enhanced Polyethylene (EPE) Resins	<ul style="list-style-type: none"> Structural layers in films needing better performance or lower cost 	<ul style="list-style-type: none"> Other unique property combinations including several sealant grades Higher modulus combined with increased toughness 	<ul style="list-style-type: none"> Improved modulus and toughness offer the opportunity to downgauge for significant cost savings Provides a density advantage versus EVAs 	<ul style="list-style-type: none"> 9-12% EVAs EVA/LLDPE blends LLDPE resins Other mLLDPEs 	<ul style="list-style-type: none"> Desire to have balance of properties ELITE EPE resin offers
DOWLEX™ Resins	<ul style="list-style-type: none"> Applications requiring high performance LLDPE films Downgauged films for converters seeking higher output 	<ul style="list-style-type: none"> Better physical properties and processability versus hexene and butene LLDPE resins 	<ul style="list-style-type: none"> Improved performance allows for downgauging Higher throughput lead to increased output from capacity 	<ul style="list-style-type: none"> Hexene LLDPE 	<ul style="list-style-type: none"> Better performance is offered by DOWLEX Resins because of octene comonomer and solution process Increased output from extruders
AMPLIFY™ GR Functional Polymers	<ul style="list-style-type: none"> Tie-layer between EVOH and PE, Nylon and PE in coextrusion film structure 	<ul style="list-style-type: none"> Excellent adhesion with EVOH, Nylon and PE 	<ul style="list-style-type: none"> Comparable price as competitive material 	<ul style="list-style-type: none"> Other MAH graft resins 	<ul style="list-style-type: none"> Excellent adhesion performance Soft and high clarity tie-layer
DOW™ Low Density Polyethylene (LDPE) Resins	<ul style="list-style-type: none"> Lower physical performance films requiring high clarity 	<ul style="list-style-type: none"> Excellent optics and processability 	<ul style="list-style-type: none"> Moderate cost 	<ul style="list-style-type: none"> Other LDPEs 	<ul style="list-style-type: none"> Benefits of overall Dow relationship Excellent optics of Dow LDPE 600 Series Resins

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We know the questions to ask. More importantly, we know how to listen when you answer them. It’s a consultative approach that has proven successful time and again.

Consultation can take many forms. Beyond the expected meetings for product and performance considerations, you may also find excellent counsel for financial questions, supply chain coordination, production or manufacturing efficiency, or many other topics.

It’s simple: when you do business with Dow, you get experts with answers to practically every issue involved in doing business well.

Technical Service & Development

Technical issues are fielded by a global complement of Technical Service and Development (TS&D) experts. Years of on-the-job, hands-on experience qualify them to help solve your problems quickly. Typically TS&D personnel will go directly to your site to investigate the problem first hand and help you find a solution.

Customer Technical Support Center

For day-to-day questions or information requests that need a quick answer but not necessarily a visit by TS&D people, the Customer Technical Support Center (CTSC) provides 24-hour response, five days a week.* The CTSC employs full-time technical support personnel dedicated to answering a wide range of technical questions and providing our valued customers with the useful information they need quickly— often with just a single phone call.

* Not available to all customers. Ask your Dow sales representative about qualifications for CTSC participation.



Six Sigma

The reduction of defects throughout a business ultimately leads to greater customer satisfaction, higher loyalty, and greater profit potential. Dow has embraced Six Sigma and welcomes the opportunities to share our knowledge. Six Sigma principals are now routinely used in specific customer projects, dramatically increasing overall success rates.

Experts with Answers
When You Need Them

Global TS&D • Taste and odor testing capabilities • Analytical and gel testing • Specialized polyethylene training • Operator training • 24/5 CTSC access for qualified customers • Extrusion and fabrication consulting • Industry-specific, bi-monthly newsletter • Screw design recommendations • Knowledgeable account personnel • Environmental issues management • Continuous reinvestment in R&D • Safety audit assistance • Consultative sales approach • SixSigma • Customer-driven innovation • Industrial hygiene recommendations • FDA and regulatory issues assistance • In-house developmental fabrication capabilities

We're here for you

Dow's flexible food and specialty packaging personnel are focused exclusively on these applications. This allows us to better understand your unique and specific performance requirements, as well as your other possible alternatives.



Products to meet your flexible packaging requirements

Dow's spectrum of high performance film resins has been developed to meet the ever-increasing demands of the flexible packaging industry, with particular focus on the food and specialty packaging market. Dow has extensive experience serving the needs of the following market applications:

- Meat & cheese packaging
- Dry food packaging
- Fresh-cut produce packaging
- Flexible extrusion coating
- Liquid packaging
- Medical packaging
- Retort pouch

From industry essentials such as low density polyethylene (LDPE) resins, to high performance products such as SARAN™ Resins & Films, to the specialty resins found in our new family of VERSIFY™ Plastomers and Elastomers, you'll discover plastics covering the extremes and everything in between.

Differentiation that delivers value

Your products will have differentiated performance when you choose Dow materials. The Relative Price/Relative Performance chart (Figure 1) illustrates the broad range of options available to you for your high performance film resin selection, while Table 1 on the previous page provides a detailed examination of Dow products for the flexible food and specialty packaging market.

Using this vast product portfolio, you can surely set yourself apart from your competition by utilizing specialized products that deliver the specific performance you and your customers demand.

New technology to keep you ahead

SARAN PVDC Resins & Films have long been recognized as the ultimate barrier option. Their unique molecular structure delivers incomparable moisture barrier performance with superior chemical resistance and exceptional optical properties. SARAN Resins & Films also provide an excellent oxygen barrier in real-world humidities.

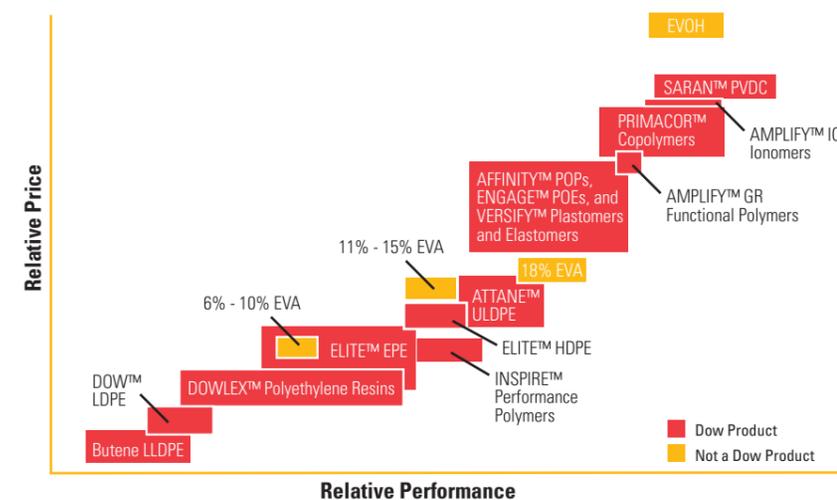
Now, Dow has new process technology that makes using SARAN PVDC products easier than

ever. We've worked closely with leading equipment manufacturers to design new blown coextrusion film dies, as well as new resins for blown multi-layer films that enable products made with SARAN Films to be used with high-temperature skin materials such as nylon or K-Resin.

This opens up a host of new opportunities for converters. Now, developing new, clear barrier films that can replace metallized films is possible. In addition, retort applications benefit greatly from this new technology. Using films containing SARAN Resins, soups, sauces, and pet foods can now be packaged in clear, flexible pouches instead of rigid metal and glass containers.

Dow is committed to bringing new products and new technology like this to the marketplace. As you'll see on the following pages, innovation is something we take very seriously.

FIGURE 1: Relative Price/Relative Performance Chart For Flexible Packaging Resins



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Plastics Covering
the Extremes and Everything in Between

Created PE High-pressure process • Global TS&D availability • Refined LDPE tubular process • Consultative sales approach • Introduced UNIPOL™ gas-phase technology • Customer-driven innovation • Perfected Solution process • Continuous reinvestment in R&D • Invented INSITE™ Technology • FDA and regulatory issue assistance • Created UNIPOL II process • In-house developmental fabrication capabilities • SARAN™ PVDC coextrusion die technology

Products that solve Solutions that produce

Your choice of products currently available from Dow could easily be the answer to a packaging problem. But the potential advantages of working with Dow's flexible packaging experts go much further.

Working together with Dow, your creativity can be unleashed to develop solutions to more complex questions, create new products for a desired market application, or improve your current film structures to grow your market share.

The Dow portfolio for flexible packaging includes nearly 300 resins (commercialized and experimental grades), and new resins are being developed through continuous research.

Tell us what you need. Challenge us. Together, we'll discover cost-effective solutions that can produce positive results for your business.

Always aware of the trends

Dow flexible packaging professionals are continuously identifying industry trends. It's one of the reasons we've remained a leader — by working with our customers at the forefront of new packaging concepts. Most recent examples include our involvement with retort packaging, case-ready packaging, and fresh-cut produce packaging.

Flexible retort packaging

One of the newest trends in retail and foodservice packaging, retort pouches provide an alternative to cans, bottles and cartons. Benefits include lighter weight, product differentiation via creative design, and source reduction, as these flexible alternatives use less packaging material. Other drivers include an almost infinite capacity to vary sizes; improved flavor versus traditional packaging

or other processing options; improved nutritional content; savings through distribution; increased retail shelf presence; and foodservice user friendliness, portion control, and storage space.

Case-ready packaging

Packaging of whole meat cuts, ground beef, and poultry is seeing a wave of innovation with the onset of case-ready packaging. Retailers appreciate the cost savings, branding potential, liability reduction, and stocking convenience of case-ready packaging. Consumers enjoy the wider selection and greater availability. Dow offers products to meet every aspect of case-ready packaging creation, from the tray to lidding film resin to master bag.

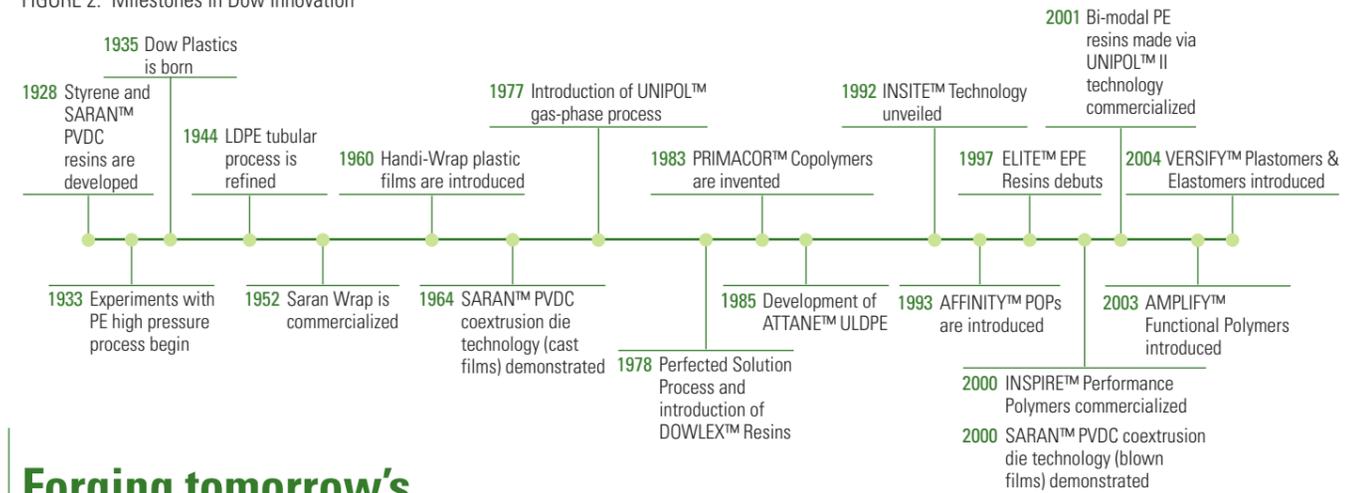
Fresh-cut produce packaging

As far back as the mid-90s, Dow recognized "fresh-cut" as an important and up-and-coming packaging segment. We even held an industry input session in 1997 to gain valuable insights from film brokers and packagers in North America. How have we remained at the leading edge of the trend? By providing products and solutions that help our customers give growers, retailers, and consumers what they want.

Listening to you

While awareness of the industry as a whole is critical, attention to the individual customer is paramount. We listen to you and let your demands drive product development. Again, this is putting in action our commitment to develop cost-effective solutions — resins and films with the right combination of performance and cost that allow you to deliver better products to your customers.

FIGURE 2: Milestones in Dow Innovation

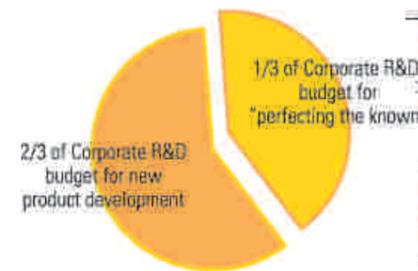


Forging tomorrow's successes

In the fast-paced world of food and specialty packaging, your competition never rests in its search for "the next big thing." Neither does Dow. And neither will you when you are allied with our global R&D resources.

Annually, one-third of Dow's research and development budget is spent on perfecting current technology, processes and products, while the other two-thirds is devoted to new product development to assure a relentless pursuit of "new and improved" in support of your continued success.

FIGURE 3: Reinvesting in the Industry



Innovation around the world

Dow has a proven track record of innovation recognized around the world. The briefest of reviews quickly validates our standing as an industry leader. INSITE™ Technology¹, SARAN™ Resins & Films, AFFINITY™ Polyolefin Plastomers, PRIMACOR™ Copolymers, INSPIRE™ Performance Polymers...all provided landmark breakthroughs, and their technologies continue to provide a base of intellectual assets unparalleled in the industry. What's more, our teammates from Union Carbide (who joined Dow via a merger in 2001) share an equally distinguished and innovative heritage, and share in our zest for creating forward-thinking improvements for the industry.

In 10 R&D facilities located for maximum customer advantage around the globe, Dow scientists work closely with our market experts and key customers to continue to develop products that make a difference.

¹INSITE Technology is a unique, single-site catalyst that allows flexibility to control the molecular structure of polyolefin resins - to model and accurately predict property performance; to design new products based on your performance requirements, rather than on traditional characteristics of melt index and density.

Because of their global diversity, each R&D center — in concert with its customers — is charged with meeting unique cultural or geographic opportunities or requirements.

These capabilities, combined with close customer involvement, enable Dow to get to market faster with products that meet your specific application needs, thus speeding your future success as well.

A Proven Track Record of
Innovation

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