Polyethylene Products Overview

**ASPUN™ Fiber Grade Resins**
Excellent softness and drape; low melting point; good adhesion to polyethylene and polypropylene films.

**ATTANE™ Ultra Low Density Polyethylene Resins**
Excellent combination of softness, clarity, gloss, and cling, with low temperature flexibility and high flex crack resistance.

**DOWLEX™ Polyethylene Resins**
Stretchability, moldability, holding force, puncture and tear resistance, with good hot tack strength, UV resistance, ESCR, and toughness.

**ELITE™ Enhanced Polyethylene Resins**
Distinct combinations of stiffness, impact strength, and toughness, with stretchability, low sealing temperatures, moldability, and processability.

**DOW™ HDPE**
High Density Polyethylene Resins
Stiffness, toughness, and stress crack resistance for pipe, molded goods, and films.

**DOW™ LDPE**
Low Density Polyethylene Resins
Easy processing, clarity, and stiffness, combined with printability, strength, and tear resistance.
Polyethylene products offered by The Dow Chemical Company (“Dow”) cover the extremes and everything in between. Our broad product portfolio spans the performance continuum—from industry workhorse resins to highly differentiated polyethylene polymers that could help you design cutting-edge products and provide opportunities for capturing more downstream value.

As the competitive environment demands innovative and continuously improving solutions, our extremely diverse palette helps you to find the match for your requirements.

Whether you are seeking to reduce the weight of your product or to increase its strength, or if you want to make it faster, thinner, and lower your costs, Dow products may hold the key to the solution.

This guide offers a more detailed look at the many products and product families available to you and your markets, applications, and fabrication processes. For a complete list of which product families are appropriate for which markets, applications, and fabrication processes, please view the Product Finder at: www.dowplastics.com/plastics/ap/index.htm
ATTANE™
Ultra Low Density Polyethylene Copolymers

Specific performance when the demands are high.

ATTANE™ Ultra Low Density Polyethylene (ULDPE) Copolymers help meet demanding performance requirements in very specific market segments, such as stretch wrap, food packaging, and hygiene and medical applications.

Compared to DOWLEX™ Polyethylene Resins, ATTANE ULDPE Copolymers offer greater low temperature flexibility and flex crack resistance, a fine solution for containing liquids that move freely within a package.

Using ATTANE ULDPE Copolymers offers excellent optics and high tear resistance, while helping to avoid leaks and spills.

The low modulus of ATTANE ULDPE Copolymers provides hygiene film customers with key properties, such as low noise and softness.

Applications for ATTANE ULDPE Copolymers include consumer bags and packaging for cheese, meat, coffee, and detergents; hygiene films; heavy duty sacks; and turf bags. They are also used widely to produce silage wrap, mulch films, and extruded membranes.

ASPUN™
Fiber Grade Resins

The fiber resin for excellent soft touch and drape.

When processors are looking for differentiated performance in spunbond or staple fiber and non-woven materials, one name stands out — ASPUN™ Fiber Grade Resins.

ASPUN Resins deliver on two previously unmet needs in hygiene and medical applications in particular.

First, they provide soft, cloth-like haptics for non-woven outer covers, medical drapes, and gowns, as well as hygienic article topsheets. In comparison with homopolymer polypropylene, ASPUN Resins can help you deliver consumer products with an elevated comfort level.

Second, the lower melting points of ASPUN Resins make them very well suited for thermal bonding applications such as melt blown interlayers or bi-component fibers. ASPUN Resins may be your solution of choice for spunbond, airlaid, and carded non-wovens.

ASPUN™ Fiber Grade Resins have a proven track record and provide distinct performance to the world’s leading non-woven manufacturers and consumer products companies. Fabrics containing ASPUN Resins can be laminated to polypropylene or polyethylene films for even greater design flexibility.
**DOWLEX™ Polyethylene Resins**

The resins of choice for higher performance and processability.

For customers who require more toughness, puncture resistance, or good tear resistance, DOWLEX™ Polyethylene (PE) Resins offer these qualities and much more. They deliver higher performance and processability, and have a wide variety of applications in blown and cast film, extrusion coating, injection molding, and rotomolding. In addition, they have become a material of choice for hot and cold water pipes (PE-RT), membranes, and other durable goods.

The impact resistance and hot tack strength of these materials provide a real advantage in food and specialty packaging. For hygiene films, DOWLEX PE Resins offer excellent toughness and downgauging potential; and in agricultural applications, like silage wrap and mulch film, DOWLEX PE Resins have set many high standards of performance.

DOWLEX PE Resins are also frequently used as a film to wrap pallet loads that have sharp corners and irregular shapes. Their combination of toughness, easy processing, and the ability to downgauge is a very good choice for general industrial and consumer film applications that require more strength and puncture resistance.

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**ELITE™ Enhanced Polyethylene Resins**

Distinct combinations and no compromises with a single product solution.

ELITE™ Enhanced Polyethylene (EPE) Resins provide a single material solution that goes beyond the traditional combinations of performance attributes. They offer cost-effective answers to a variety of challenges by bringing together the excellent flexibility of our Solution Process with INSITE™ Technology.

The resulting products can deliver sealability and stiffness; high stretch and high puncture resistance; impact strength and processability; stiffness and impact strength; and many other distinct combinations. What’s more, these single-resin benefits can be applied to a wide variety of film, laminate, and coated products.

As an example, for liquid, dry, and frozen food, you can use ELITE EPE Resins to reduce package thickness by up to 25 percent without sacrificing toughness or machinability. On high-speed stretch film lines, ELITE EPE Resins can run faster and thinner without compromising their holding force. And, for lamination films, packers can maintain stiffness and toughness while reducing pack weight. In these and many other film applications, from baby diaper backsheets to heavy duty shipping sacks, ELITE EPE Resins bring a new dimension of performance.
DOW™ HDPE
High Density Polyethylene Resins

Stiffness, toughness, and stress crack resistance for pipe, molded goods, and films.

DOW™ High Density Polyethylene (HDPE) Resins provide toughness, rigidity, and strength for blow molding applications, film products, and extruded and injection molded items.

For blow molding, DOW HDPE Resins offer an excellent combination of stiffness and environmental stress crack resistance (ESCR), making them a popular option for many applications in personal care, household and industrial chemical containers, and bottle products in general.

DOW HDPE Resins offer the toughness and stress crack resistance essential for pipe applications, while high-molecular-weight HDPE film resins provide toughness and downgauging capabilities. Applications include thin gauge carrier bags, bin liners, refuse sacks, and monotype for multiple twine and netting applications.

DOW HDPE Resins also provide excellent organoleptics (taste and odor characteristics), higher stiffness, and high chemical resistance, in particular, for food contact applications such as caps and closures.

For injection molding, DOW HDPE Resins offer both strength and processability — the two properties every injection molding processor wants, but rarely achieves at the same time.

With a product range including homopolymers and copolymers, in a variety of melt indices and densities, these advantages are available across a wide spectrum of end-use applications.

DOW™ LDPE
Low Density Polyethylene Resins

Turning a workhorse into a racehorse.

DOW™ Low Density Polyethylene (LDPE) Resins are more than just general-purpose polyethylene resins. They are re-emerging as a valuable product family, combining excellent clarity with the stiffness and density favored by converters for downgauging.

Ease of processing beyond most linear low density polyethylene (LLDPE) resins, improved product performance, excellent drawability, and quality combine to produce cost-competitive solutions for converters in a wide variety of applications. These range from complex food packaging structures to hygiene films and coated paper boards.

Other typical applications include liners; overwraps; consumer bags; heavy duty sacks; clarity, shrink and collation films; lamination films; protective films; agricultural films; extrusion coatings; wire and cable; pipes; and a variety of durable products.

In packaging applications, DOW LDPE Resins offer excellent aesthetics, printability, strength, tear resistance, and elasticity. They can be processed on today’s high-speed lines for use in film, lamination, and coating structures, as well as blended easily with other polyethylene resins from Dow for customized performance.

Dow’s commitment to provide quality products is stronger than ever. Our focused programs to minimize or eliminate gels, dust, and floss, and improve granulation quality are important examples of Dow’s efforts to be your best LDPE supplier.

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We meet customer needs with application-specific solutions for a wide range of market segments. Look to Dow for exceptional expertise and plastics-based solutions. You can count on our experts to offer a global, in-depth understanding of market dynamics and application requirements.

If your application is innovative, challenging, or requires precise specifications, ask us about the ways in which we can use our extraordinary plastics portfolio to meet those tougher demands.

For additional information regarding specific resins and films and their respective use in markets, applications, and fabrication processes, please view the Product Finder at www.dowplastics.com/plastics/ap/index.htm
When it comes to the Durables Goods and Flooring market, strength, durability, and toughness are obvious requirements. But to differentiate your products and improve your cost/performance balance, you need more from a supplier than a plastic that meets these basic requirements.

That’s why Dow offers global solutions, giving you an opportunity to meet the challenges facing market segments including household products, personal care products, recreational products, and medical equipment and devices. Dow’s expertise and experience – together with our extraordinary portfolio of plastics – will provide you an opportunity to achieve the best possible combination of functionality, appearance, productivity and lower costs.

Looking for better aesthetics, broader service temperatures, lighter weight, or faster cycle times? Dow plastics offer the versatility that your applications demand. Our plastics help deliver the right combination of mechanical properties at competitive costs and low maintenance while still offering toughness and excellent durability. Dow resins provide higher impact and environmental stress crack resistance, combined with very good processing characteristics and pigment compatibility.

Because our plastics offer such an excellent balance between cost and performance, they are highly valued through the entire spectrum of durables goods and flooring applications.

**Artificial Turf**

Artificial turf has come a long way in 40 years, with new, advanced systems becoming the first choice for many professional sports venues around the world. Dow is a key player in this evolving market, developing a range of complementary materials that together produce long-lasting, high performance artificial turf. For more information regarding our involvement with artificial turf systems, visit www.dowartificialturf.com.

**Household Products**

Dow products are often specified to meet manufacturers’ needs in a wide array of common household applications.

- Bathroom Enclosures – such as one-piece bath and shower basins
- Furniture – including garden and patio pieces to accents and laminates for fine furniture and home accessories
- Housewares like food storage containers, Hampers, children’s toy chests, and more
- Luggage components such as hard-shell frames, handles, wheels, etc.
- Tools – ranging from small hand tools to larger garden and power equipment

Dow plastics can be found working hard!

**Membranes**

Membranes are sheet-like structures, which are commonly used in environmental and water protection applications. These membranes are used to prevent the release of gas or odors into buildings or into the environment, and also help to protect groundwater against spoilage with contaminated water.

Membranes are essential in waterproofing applications, helping to protect new constructions against corrosion or water erosion. They are also used in containment, collection, and the conveyance of drinking water, helping to prevent water loss.

**Personal Care**

We are all selective about what touches our bodies – everything from fabrics to toothbrushes. If a product is that close to us, it has to meet some pretty stringent standards. Bright colors, greater style, comfort and convenience – Dow has products that suit your application requirements for toothbrushes and other hygiene products.

**Recreational Products**

For many end-use products, such as these listed here, Dow offers plastics that are real winners.

- Outdoor and Gardening – for use in carts, outdoor containers, decorative fencing, seating, and more
- Toys - big, small, hard, soft, colorful, indoor, and outdoor
Dow is at the forefront of trends in food and specialty packaging films. As one of the world’s largest producers of plastics used in food packaging, Dow’s market-specific expertise and innovation gives you advantages to create innovative packaging to deliver food that is fresh, healthy, and convenient.

Dow plastic products provide a desirable balance of properties for high-performance films such as multi-layer co-extrusions or laminate structures, and may also be used as a toughness layer. Whether in blown or cast film co-extrusion, extrusion coating, or lamination of monolayer and co-extruded films to barrier substrates, Dow products offer opportunities for cost-effective processing for numerous end uses.

**Bakery Packaging**
A basic purchase for most consumers, packaged bread and other bakery goods provide the ultimate in consumer convenience, allowing ready-to-eat products with freshness that lasts well beyond homemade.

**Display Packaging**
For display packaging, Dow’s resins can optimize your package design and performance. Dow’s diverse offering of proven performers is well suited to meet your needs in this application.

**Dry Food Packaging**
For dry food packaging for products such as crackers, biscuits, cereals, and bakery goods, Dow resins can optimize your package design and performance, providing excellent combinations of moisture barrier, taste and odor requirements, toughness, and sealability.

**Fresh Produce Packaging**
Fresh-cut produce includes a variety of salads, vegetables, and fruits cleaned, packaged, and ready to eat. The proper design of the packaging film ensures the correct exchange of oxygen and carbon dioxide between the inside of the package and the atmosphere. Combined with proper refrigeration, this can substantially lengthen the shelf life of fresh produce.

**Frozen Food Packaging**
Frozen food packages protect prepared and plain vegetables, potatoes, and fruit for convenient delivery to the consumer. Providing firmness and nutritional quality that exceeds canned vegetables or fruit, frozen food has developed a preference among many consumers. Requirements for this application include a broad seal window and the toughness needed to withstand the sharp edges of frozen food.

**Liquid and Semi Solid Food Packaging**
The packaging of liquids and semi-solid food requires proper selection of materials to ensure zero leakage from the package. Toughness, resistance to flex cracking, and seal integrity are among the key requirements for this segment.

Extrusion board coating is one solution, with extrusion coated polymers from Dow servicing a multitude of applications. For practically any substrate, Dow has resins that can be used in an extrusion coating/lamination process for food and beverage packaging.

**Meat and Cheese Packaging**
The extended shelf-life and ease of use of many pre-packed meat and cheese products make them favorites among consumers. Critical requirements are proper oxygen barrier, seal integrity, and package toughness.

**Medical Packaging**
Medical packaging requirements are as varied as the products being packaged. Because of the importance to human health, medical packaging must utilize the highest performance resins available in order to provide maximum protection of the product being packaged. Typical requirements include complete seal integrity, overall barrier properties, and excellent toughness.

**Pet Food Packaging**
Packaging for pet food must provide protection specific to the type of food being packaged. High-fat dog food require grease resistance, for example, while moist food require barrier properties. Stand-up pouch formats require the stiffness needed to maintain their shape, and high heat seal strength and toughness are critically important for larger packages.

**Snack Food Packaging**
The packaging for snack food such as potato chips/crisps, dried fruits, nuts, candy, and others demands specific requirements. These may include barrier to light, oxygen, or moisture, as well as good toughness and sealability.

Because a lot of snack food is purchased on impulse, most packages have glossy surfaces and eye-catching graphics to attract consumers’ attention.
Dow offers a broad mix of plastic resins to address emerging requirements in the hygiene and medical markets. Our technical capabilities and industry knowledge help us better understand converter and end user needs and provide us with the expertise needed to support developments in the fast-changing field of disposable absorbent products.

Dow plastic products are used to improve the fit, functionality, and comfort of baby diapers, training pants, feminine care products, and adult incontinence products, as well as medical drapes, gowns, and disposable medical applications such as tissue culture trays and Petri dishes*. Plastics from Dow are used in all components of diapers, feminine hygiene and adult incontinence products, such as backsheets and top sheet films, leg gathers, and hook and loop (fasten and re-fasten) systems, and more.

Our products offer performance benefits in nearly all components, and we are driven by a desire to be recognized by industry partners as the best global supplier of polyolefin-based solutions into the Health and Hygiene industry.

Dow is working on new solutions that align with current and future industry trends and deliver on partner needs. Dow understands the importance of new features, improved comfort and achieving higher performance at lower total costs. As a well-established, global, back-integrated supplier, Dow can help provide the expertise and reliable supply of products you need to address these issues.

Whether you desire material properties to enhance skin health, body fit, feelings of cloth, or higher throughput, downgaugability or material substitution potential, Dow offers a broad mix of plastics and material science to address emerging requirements for the following Health and Hygiene applications:

**Adult Incontinence**
What we’ve learned from diapers, we can aptly apply to adult incontinence products, including following the current trends of water vapor permeable breathable backsheets to prevent irritation; and the use of elastic films, foams, or fibers to produce a more form-fitting product.

**Baby Care Products**
Current trends in the diaper market include water vapor permeable breathable backsheets to prevent heat buildup and rash; and the use of elastic films, foams, or fibers to produce a more form-fitting product. Many diaper backsheets are now laminated with a non-woven polypropylene on the outer side, to provide a cloth-like feel.

A polyethylene backing film, or backsheet, serves as a liquid barrier for absorbent products. Backsheets are typically produced via cast or blown films composed of blends of linear low density polyethylene (LLDPE), DOWLEX™ Polyethylene (PE) Resins, or ELITE™ Enhanced Polyethylene (EPE), and low density polyethylene (LDPE), to which white pigment is added. They are usually embossed to provide a more pleasing visual and tactile aspect.

**Feminine Care Products**
While feminine hygiene products differ from diapers and incontinence products, they share many of the same components. Dow plastics are used in all components of feminine hygiene products, such as backsheet and top sheet films. They offer characteristics like proper adhesion, softness, dry feel and breathability.

**Medical Disposables**
Dow offers a broad mix of plastic resins to improve the fit, functionality, and comfort of medical drapes, gowns, plus service disposable medical applications such as tissue culture trays and Petri dishes*.

Dow is at the forefront of trends in the development of more cloth-like, breathable structures with softer, more elastic composites.

**Medical Equipment and Devices**
Medical technology and development drive the need for new and innovative solutions, cost effective performers and trustworthy plastics. Dow has a wide variety of materials that deliver the right balance of properties to an even broader variety of applications*

**Technicals**
The Dow products listed below are well suited to meet your needs in technical non-wovens, including protective garments, filtration, agricultural and geotextiles.

**Wipes**
Dow is at the forefront of trends in the development of soft, more cloth-like, functional structures, especially as the market for wipes grows with increasing attention to personal health and hygiene. Dow understands improved economics for disposable items is a must. As a well-established, global, back-integrated supplier, Dow offers the expertise and reliable supply of products you need to address these issues.

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*Any medical application requires a Dow business assessment prior to the sale or sampling of Dow products.
Dow offers a full range of products for the industrial and consumer films and foams market designed to meet the newly emerging uses for films and foams. Product packaging, for example, is often now used as a marketing tool in and of itself. Our plastics are up to this challenge – offering excellent aesthetics and printability.

Dow plastic products are particularly suitable for new consumer films, offering both excellent aesthetic and mechanical properties. Our products can provide bubble stability for thicker films, downgauging opportunities, high melt strength for blown film extrusion of propylene-based products, and thickness reduction – without penalty in end-use film performance.

**Agriculture**

For Dow’s customers in the agriculture market segment, plastics are leading the way to a more profitable and environmentally friendly future.

Advances in polyethylene technology for agricultural films have reduced the need for chemical fertilizers, pesticides, and herbicides. Agricultural films improve crop quality and increase the crop yield. The advantages of polyethylene films over competing materials (such as wood chips, straw, mulch, cloth, burlap, and fiberglass) include lower costs, increased profitability, and environmental stability.

Innovation leads to growth. Because Dow invests so much into new product development (a full two-thirds of the Corporate R&D budget) Dow is continually expanding into new agricultural market segments to better meet your needs.

**Greenhouses**

Greenhouse and tunnel films are generally made at very high layflats, as high as 65 feet. As a result, bubble stability is very important during production. Greenhouse and tunnel films must:
- Resist exposure to UV
- Resist fogging due to condensation of interior moisture
- Resist environmental contaminants (acid rain, particulate)
- Be tough enough to withstand abuse
- Allow the transmission of light

**Mulch Films**

The mechanical performance of Dow plastic products makes them an excellent choice for mulch films.

Mulch films serve a number of different purposes. Transparent mulch film is used to encourage early season plant growth and early cropping, whereas black mulch films are used to control weed growth and white films provide reflected sunlight for the plants. In all cases, a more effective use of the available water is achieved. Most mulch films are 10 to 50 microns in thickness and used in widths up to 3 meters.

**Silage Films**

Silage films maintain the nutritional value of forage plants such as corn, vegetables, and grasses that continue to respire after cutting. Silage film exclude the air so lactic acid fermentation can take place, leaving a feed rich in vitamins and carotene. When silage film is used, the feed can keep its nutrients for several months, depending on the amount of air left (the less air, the better). Thus, feed is available for use during periods when forage is not available in sufficient quantities.

DOWLEX™ Polyethylene (PE) Resins, because of their exceptional mechanical properties, provide competitive advantages over other linear low density polyethylene (LLDPE) resins. This, in particular, also applies to the development of stretch wrap film for the packaging and storage of silage fodder. In fact, most wrapping machines are set up to run films made with DOWLEX resins.
**Stretch Films**

Stretch film is a very effective method of protecting palletized products through storage and distribution. For more than 20 years, LLDPE resins have provided an excellent balance of properties to meet the demanding requirements of stretch film applications, with higher alpha olefin comonomer grades being one of the market and technology leaders.

As film converters continuously strive for more cost effective production and packaging applications become more demanding, using high speed and/or high pre-stretch machines, the structure of these films is changing. The core layers are based on high performance higher alpha-olefin polymers.

Plastics from Dow provide many benefits, notably stretch-ability, holding force and resistance to tears and punctures.

**Retail Bags and Sacks**

Many retailers are seeking to down gauge their structures while maintaining performance. This explains the use of higher alpha olefin based DOWLEX™ PE Resins and metallocene-based ELITE™ EPE Resins in what is normally considered a commodity market.

There is also a strong demand for higher quality "boutique" bags requiring good aesthetics and printability. Dow plastics help provide the right combinations of properties for both retailers and converters.

**Heavy-duty Shipping Sacks**

In a whole range of miscellaneous heavy duty films, polyolefin products can provide moisture barrier, tear strength, puncture resistance and other desirable properties. These films are often used for industrial sheet, wrap and tubing for commercial packaging.

Industrial sheets are typically placed between wood, metal, glass, and other industrial materials such as rubber, and significant quantities of this film and sheet are treated for printing.

**Liners**

Industrial liners include polyethylene bags (used to line boxes, drums, bins and other containers), printed liners, and printed industrial bags. These liners are designed for use with outer packages to protect the product inside, to make it easier to remove the product, and to allow for reuse of the outer container. Industrial liners are used to package items such as tires, mattresses, dry foods and grains, chemicals, plastics, dry feeds, textile products, and produce.

Dow plastics are used to manufacture a broad range of industrial liners, offering many advantageous properties, especially toughness, chemical resistance and barrier properties.

**Protective Packaging**

Protective films are used to cover and protect surface of fabricated parts, especially in the automotive and household appliance industry. They are also used extensively by manufacturers of metal and plastic sheets.

Traditional protective films are standard polyethylene films coated with an adhesive emulsion. However, co-extruded films with a special outer layer for adhesion have a stronger market growth potential.

Both low density polyethylene (LDPE) and linear low density polyethylene (LLDPE) are used in this market which demands resins with low gel levels and high gloss, as well as high modulus for downstream machinability.

**Shrink Films**

This is a well-established and cost effective method of collating cans, bottles, cartons and palletized goods, and also offers the transportation benefit of low weight. In addition, shrink film is suitable for recycling, incineration, or landfill.

Both LDPE and LLDPE are used in this market, with LLDPE often added to provide additional mechanical strength or increase heat stability. There is a growing demand for printed shrink films which provide a powerful and cost efficient promotional tool for creating or enhancing a brand image in a competitive marketplace.

The range of Dow products includes both LDPE with excellent optical properties and shrink performance, and LLDPE which increases mechanical properties without compromising the aesthetics.
In today’s drain, waste, and vent (DWV) market, building designers, manufacturers, and molders of pipes and fittings can benefit greatly from resins that are both proven and cost-efficient performers.

Working with Dow gives you a tremendous advantage – access to one of the world’s broadest portfolios of plastics products. But there are many added benefits, as well. With Dow’s expertise, you have the opportunity to achieve the appropriate balance of functionality, appearance, productivity and potentially lower costs.

For example, Dow offers a variety of plastic products that are suitable for several types of piping applications, including pressure pipes, corrugated and telecom and conduit. Dow provides resins for hose and tube applications ranging from drip irrigation to swimming pool accessories. Whether your application requires burst strength, puncture resistance, or ease of extrusion, Dow has a resin that delivers quality, consistency and performance.

Dow offers a range of polyolefin products that meet the demands of ASTM, ISO, and CEN standards for pressure and non-pressure pipe applications. The advantages of polyolefin materials over traditional pipe products, such as concrete and metal, are long life, no corrosion, leak-free fusion welds, and pipelines that are resistant to ground movement. The light weight and flexibility of polyolefin pipe systems allow significant cost savings through a variety of installation techniques.

In the non-pressure pipe market, Dow provides the industry essential resins for applications including hose and tube, corrugated pipe, and telecommunications conduit. Confer exceptional processing characteristics while maintaining excellent impact and ring stiffness properties.

DOWLEX™ Polyethylene (PE) Resins may be used at elevated temperatures for a variety of pipe applications that include floor heating, sanitary systems, radiator connections, snow melt systems, heat exchangers, solar panels, and energy recovery systems. These resins are designed to have a lifetime of more than 50 years and are compliant with most drinking water regulations. DOWLEX PE Resins for pipe are optimized for excellent hoop stress performance and outstanding processability without the need for crosslinking.

Additional information regarding specific application segments is presented below. For even more information, visit www.plasticpipes.com.

**Construction Pipes and Fitting**

Hygiene, cost effectiveness and zero-corrosion of plastic pipes provide a clear advantage in water delivery systems. Resins manufactured by Dow for use in pipe applications help provide the qualities pipe manufacturers desire.

**Non-Pressure Pipes**

Resins manufactured by Dow offer the strength and durability non-pressure pipes require in applications such as restaurant beverage tubing and telecommunications conduit.

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As a key supplier to the rigid packaging industry for more than 60 years, Dow continues to provide its customers with technical expertise and a broad and innovative line of plastics that help handle the most extreme and demanding applications.

Continuous innovation and improvement demand new solutions, and Dow is a leader in developing new products that offer better aesthetics, lighter weight, and faster cycle times. Regardless of which process you use – blow molding, injection molding, rotational molding, compression molding, thermoforming – our extremely broad and continuously evolving product line means you can rely on Dow for polymers that help meet your requirements.

Dow divides the plastic rigid packaging market into two major segments, consumer and industrial packaging, with the first further split into food and non-food applications. Within these, there is a suite of industries including bottles, thin-wall containers, caps and closures, cups and lids, industrial containers, and material handling. Dow plastic products for rigid packaging applications offer high impact strength and high barrier properties, often exceeding industry standards for quality and durability. Our products offer excellent clarity and gloss characteristics. When used in applications such as blow molded bottles or injection molded closures, our polyethylene products offer benefits including light weight, excellent stiffness/ESCR balance, design versatility, and good resistance to a broad range of chemicals.

Bottles and Drums

In our world of differentiated products and our society that demands functionality, bottles come in all shapes and sizes, with a variety of features. Whatever your blow molded bottle requirement – wide or narrow mouth, square or round, handles or not, large or small, dry or liquid applications, personal care, or liquid food – Dow offers you a selection of plastics that could meet the demand.

For containers up to 20 liters in size for the Dairy, Water, and Juice; Household and Industrial Chemical (HIC); Pharmaceutical, Cosmetic, and Toiletry markets, Dow’s High Density Polyethylene (HDPE) product offering delivers the features and benefits you need, such as:

- Excellent rigidity
- Excellent environmental stress crack resistance (ESCR)
- High impact resistance, as well as good melt strength and moderate swell characteristics
- Improved top-load strength, drop height resistance, shape retention, and stackability
- Contact clarity and gloss
- Heat resistance for retention of package integrity during the retort, pasteurization, hot fill, and/or shipping and handling processes
- Consistent processability
- Excellent moisture barrier and chemical resistance
Caps and Closures
Caps and closures is one of the largest and most complex rigid packaging market segments, with applications in areas such as beverages, cosmetics, chemicals and pharmaceuticals. Applications typically require a balance of stiffness and toughness, and can require high chemical resistance and/or excellent organoleptics, in particular for food contact applications (water and carbonated soft drink closures). Dow’s expertise within a broad portfolio of plastics offers significant benefits for producers wishing to innovate.

Dow offers a range of products suitable for caps and closures which offer benefits such as light weight, design versatility, and good chemical resistance to a range of products. These resins offer excellent processability in multiple technologies, including compression molding and injection molding.

Industrial Containers
The industrial containers market is seeing growth and significant material substitution, especially in the paint market segments. Cost and processability are big drivers of innovation, as well as differentiated packaging, including in-mold labeling and high transparency containers. Dow’s extraordinary portfolio of high density polyethylene resins is widely used in pail applications.

Dow products used in these markets are designed to help provide the top load strength, low temperature impact resistance, rigidity, durability, and surface aesthetics demanded by today’s industrial container applications. These resins also offer the uniform flow required to fill the multi-cavity molds used for pails, and other industrial containers.

Material Handling
Material handling has a huge potential growth opportunity for plastics, particularly in plastic pallets and novel logistic solutions. The use of plastic pallets is growing, driven by trends for higher container durability, reduction of packaging waste, and improved recycling opportunities. Product development focuses primarily on improved physical properties (stiffness, toughness) and processability.

DOW™ High Density Polyethylene (HDPE) Resins is designed to help provide the top load strength, low temperature impact resistance, rigidity, durability, and surface aesthetics demanded by today’s material handling applications. Cost-efficient resins from Dow also offer the uniform flow required to fill the large molds used for pallets, crates, collapsible totes, and other bulk containers.

Thin Wall Containers and Serviceware
As a world-leading supplier of plastics solutions, Dow offers a variety of products lines that are well-suited to produce thin wall containers and serviceware. Whether your article is solid or foamed, thermoformed or injection molded, Dow works closely with you to select products that match your application needs, and to explore new combinations of properties that open the door to exciting opportunities.

With the growth in both food and non-food packaging, performance requirements have changed. This accentuates the benefits of Dow’s broad plastics portfolio, providing you an opportunity to meet demands for:
- Improved transparency
- Better aesthetics with in-mold labeling
- Lighter weight
- Thinner gauges with better performance
- Faster cycle times and improved processability
- Broader service temperature windows
- Extended shelf-life
- Recyclability
For more information on products, innovations, expertise, and other services available to you from Dow’s Plastics business group, visit www.dowplastics.com and choose your region, or contact us as indicated below.

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<tr>
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<td>1-989-832-1426</td>
</tr>
<tr>
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<td>Argentina</td>
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