

PLASTIC PACKAGING RESINS

Codes	Descriptions	Properties	Packaging Applications	Recycled Products*
 PETE	<p>Polyethylene Terephthalate (PET or PETE): PET is clear, tough and has good gas and moisture barrier properties. This plastic is commonly used in PET soft drink bottles and many other injection-molded consumer product containers. Other applications include strapping, molding compounds and both food and non-food containers. Cleaned, recycled PET flakes and pellets are in great demand for spinning fiber for carpet yarns and producing fiberfill and geotextiles. Polyester is its nickname.</p>	<p>Clarity, strength/toughness, barrier to gas and moisture, resistance to heat.</p>	<p>Plastic soft drink and water bottles, beer bottles, mouthwash bottles, peanut butter and salad dressing containers, ovenable film, ovenable pre-prepared food trays.</p>	<p>Fiber, tote bags, bottles, clothing, furniture, carpet.</p>
 HDPE	<p>High Density Polyethylene (HDPE): HDPE refers to a plastic used to make bottles for milk, juice, water and laundry products. Unpigmented HDPE bottles are translucent and have good barrier properties and stiffness. They are well-suited to packaging products with short shelf lives such as milk, margarine tubs and yogurt containers. Because HDPE has good chemical resistance, it is used for packaging many household as well as industrial chemical such as detergents and bleach. Pigmented HDPE bottles generally have better stress crack and chemical resistance than bottles made from unpigmented HDPE.</p>	<p>Stiffness, strength/toughness, resistance to chemicals and moisture, permeability to gas, ease of processing, ease of forming.</p>	<p>Milk, water and juice containers, trash and retail bags, liquid detergent bottles, yogurt and margarine tubs, cereal box liners.</p>	<p>Liquid laundry detergent containers, drainage pipe, oil bottles, recycling bins, benches, pens, dog houses, vitamin bottles, floor tile, picnic tables, lumber, mailbox posts, fencing.</p>
 V	<p>Vinyl (Polyvinyl Chloride or PVC): In addition to its stable physical properties, PVC has excellent chemical resistance, good weatherability, flow characteristics and stable electrical properties. The diverse slate of vinyl products can be broadly divided into rigid and flexible materials. Bottles and packaging sheet are major rigid markets, but it is also widely used in the construction market for such applications as pipes and fittings, siding, carpet backing and windows. Flexible vinyl is used in wire and cable insulation, film and sheet, floor coverings synthetic leather products, coatings, blood bags, medical tubing and many other applications.</p>	<p>Versatility, ease of blending, strength/toughness, resistance to grease/oil, resistance to chemicals, clarity.</p>	<p>Clear food packaging, shampoo bottles, medical tubing, wire and cable insulation.</p>	<p>Packaging, binders, decking, paneling, roadway gutters, mud flaps, film and sheet, flooring, cables, speed bumps, mats.</p>
 LDPE	<p>Low Density Polyethylene (LDPE): A plastic used predominately in film applications due to its toughness, flexibility and relative transparency, making it popular for use in applications where heat sealing is necessary. LDPE is also used to manufacture some flexible lids and bottles and it is widely used in wire and cable applications for its properties and processing characteristics.</p>	<p>Ease of processing, barrier to moisture, strength/toughness, flexibility, ease of sealing.</p>	<p>Bread bags, frozen food bags, squeezable bottles (e.g. honey, mustard).</p>	<p>Shipping envelopes, garbage can liners, floor tile, furniture, film and sheet, compost bins, paneling, trash cans, landscape timber, lumber.</p>

*These products are made with a percentage of recycled plastic content, ranging anywhere from 10 to 100 percent

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 PP	Polypropylene (PP): Polypropylene has excellent chemical resistance, is strong and has the lowest density of the plastics used in packaging. It has a high melting point, making it ideal for hot-fill liquids. PP is found in everything from flexible and rigid packaging to fibers and large molded parts for automotive and consumer products.	Strength/toughness, resistance to chemicals, resistance to heat, barrier to moisture, versatility, resistance to grease/oil.	Ketchup bottles, yogurt containers and margarine tubs, medicine bottles.	Auto battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels, landscape borders, bicycle racks, rakes, bins, pallets, sheeting, trays.
 PS	Polystyrene (PS): Polystyrene is a very versatile plastic that can be rigid or foamed. General purpose polystyrene is clear, hard and brittle. It has a relatively low melting point. Typical applications include protective packaging, containers, lids, cups, bottles and trays.	Versatility, insulation, clarity, easily foamed.	Compact disc jackets, food service applications, grocery store meat trays, egg cartons, aspirin bottles, cups, plates.	Thermometers, light switch plates, thermal insulation, egg cartons, vents, desk trays, rulers, license plate frames, foam packing, carryout containers.
 OTHER	Other: Use of this code indicates that the package in question is made with a resin other than the six listed above, or is made of more than one resin used in combination.	Dependent on resin or combination of resins.	Three and five gallon reusable water bottles, some citrus juice and ketchup bottles.	Custom products, plastic lumber.

Resin Identification Factoid:

The Society of the Plastics Industry, Inc. (SPI) introduced its resin identification coding system in 1988 at the urging of recyclers around the country. A growing number of communities were implementing recycling programs in an effort to decrease the volume of waste subject to tipping fees at landfills. In some cases, these programs were driven by state-level recycling mandates. The SPI code was developed to meet recyclers' needs while providing manufacturers a consistent, uniform system that could apply nationwide. Because municipal recycling programs traditionally targeted packaging - primarily containers - the SPI coding system offered a means of identifying the resin content of bottles and containers commonly found in the residential waste stream. Recycling firms have varying standards for the plastics they accept. Some firms may require that the plastics be sorted by type and separated from other recyclables; some may specify that mixed plastics are acceptable if they are separated from other recyclables; while others may accept all material mixed together. Not all types of plastics are generally recycled, and recycling facilities may not be available in some areas.



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The American Plastics Council is a national trade association representing 26 of the nation's largest resin producers, including monomer and polymer production and distribution. Founded in 1988, APC works to make plastics a preferred material by demonstrating they are a responsible choice in a more environmentally conscious world.