

PLASTIC PACKAGING RESINS

Recycled Products*

Packaging Applications

Properties

Descriptions

Codes



PETE

Polyethylene Terephthalate (PET or PETE): PET is clear, tough and has good gas and moisture barrier properties. Some of this plastic is used in PET soft drink bottles and other blow molded containers, although sheet applications are increasing. Cleaned, recycled PET flakes and pellets are in great demand for spinning fiber for carpet yarns and producing fiberfill and geotextiles. Other applications include strapping, molding compounds and both food and non-food containers.

Fiber, tote bags, dishwashing liquid containers, laser toner cartridges, picnic tables, hiking boots, lumber, mailbox posts, fencing, furniture, clothing.



HDPE

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. Pigmented HDPE bottles generally have better stress crack and chemical resistance than bottles made with unpigmented HDPE. These properties are needed for packaging such items as household chemicals and detergents, which have a longer shelf life. Injection-molded HDPE is resistant to warpage and distortion. It is used for products such as margarine tubs and yogurt containers.

Milk, water and juice containers, trash and retail bags, liquid detergent bottles.

Liquid laundry detergent containers, drainage pipe, oil bottles, recycling bins, benches, bird feeders, retractable pens, clipboards, fly swatters, dog houses, vitamin bottles, floor tile.



V

Vinyl (Polyvinyl Chloride or PVC): In addition to its stable physical properties, PVC has excellent transparency, chemical resistance, long-term stability, good weatherability, flow characteristics and stable electrical properties. The diverse slate of vinyl products can be broadly divided into rigid and flexible materials. Rigid applications, accounting for 60 percent of total vinyl production, are concentrated in construction markets which include pipe and fittings, siding, carpet backing and windows. Bottles and packaging sheet are also major rigid markets. 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.

Clear food packaging, shampoo bottles, automotive fluid containers.

Air bubble cushioning, frisbees, decking, film, paneling, recycling containers, roadway gutters, snowplow deflectors, playground equipment.



LDPE

Low Density Polyethylene (LDPE): A plastic used predominantly in film applications due to its toughness, flexibility and relative transparency. LDPE has a low melting point, making it popular for use in applications where heat sealing is necessary. Typically, LDPE is used to manufacture flexible films such as those used for plastic retail bags and garment dry cleaning and grocery bags. LDPE is also used to manufacture some flexible lids and bottles, and it is widely used in wire and cable applications for its stable electrical properties and processing characteristics.

Bread bags, frozen food bags, grocery bags, squeezable bottles (e.g., honey, mustard).

Shipping envelops, garbage can liners, floor tile, furniture, film, compost bins, paneling, trash cans, landscape timber, mud flaps.

*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. In film form it may or may not be oriented (stretched). 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, ease of processing, resistance to grease/oil.

Ketchup bottles, yogurt containers and margarine tubs, medicine bottles, pancake syrup bottles.

Auto battery cases, signal lights, battery cables, brooms and brushes, ice scrapers, oil funnels, landscape borders, bicycle racks.



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, trays and tumblers.

Versatility, insulation, ease of processing, clarity.

Compact disc jackets, grocery store meat trays, egg cartons, aspirin bottles.

Thermometers, light switch plates, thermal insulation, egg cartons, vents, desk trays, rulers, license plate frames.



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 upon 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 rising 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 have 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.

Current as of 1/97.



American
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Council

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The American Plastics Council (APC) is the major national trade association representing the U.S. plastics industry on resource conservation issues. APC works on behalf of the overall plastics industry to enhance the integrity of plastics, focusing on resource management-related environmental issues to ensure plastics are a contributor to a safer and cleaner environment for the future. Its mission is to ensure that plastics are a preferred material in a more environmentally conscious world. APC's activities are conducted in concert with, and supplement, the programs of The Society of the Plastics Industry, Inc. (SPI) and other organizations within the broader plastics "family."