EASTMAN

A resin for **every reason**

Performance-matched plastics for appliances

More reasons than ever to differentiate your products

The ongoing growth of the competitive household appliance market drives brand owners, product designers, and manufacturers to discover innovative ways to satisfy consumers—and differentiate products and brands.

Eastman is a leading supplier of clear and opaque plastic resins that inspire innovation. These performance-matched resins can help create value-added components that enhance the value of small appliances, floor care equipment, and major appliances.

SELECT THE ATTRIBUTES THAT CONTRIBUTE TO YOUR PRODUCTS' VALUE.

Eastman offers a variety of copolyesters, each with the right balance of thermal, mechanical, and rheological properties that help make your brand stand out from the competition.

- Clarity
- Toughness
- Chemical resistance
- Processability
- Hardness
- Tintability
- Surface gloss
- Strength
- Heat resistance
- Economics
- Design flexibility
- Acoustic performance
- BPA-free manufacture

Big opportunity for small appliances

Eastman Tritan™ copolyester is a significant and welcome breakthrough that builds on the versatility of our heritage copolyesters—including clarity, toughness, and chemical resistance—to deliver greater heat resistance and the potential for easier processing of small appliance components.

With minor or no adjustments to your process, Tritan can be a replacement for many polycarbonate (PC), ABS, or PC/ABS blends injection molds. The new standard in dishwasher durability, it delivers toughness and impact resistance comparable to PC but with these clear advantages:

- **Greater hydrolytic stability and chemical resistance** deters degradation and stress cracking in hot, wet dishwasher environments, even with cleaning solutions, surfactants, and alkaline cleaning agents.
- **Lower levels of residual stress** without a separate annealing step improve injection molding rates as well as the durability of the molded articles.
- **Lower density** increases number of parts per pound of polymer.
- **Tritan is BPA free,** so it can offer unique marketing opportunities compared with products made with PC.
- **Sound-damping properties** of Tritan create higher quality acoustics and reduce noise—and can add value to your products and brand.

"We place an emphasis on using the highest quality materials and components for our Vitamix® products, and we had been looking for a viable BPA-free solution for a number of years. Tritan is the only material to deliver this advantage while maintaining the levels of impact resistance the containers must provide."

John Barnard,
Executive Chairman of Vitamix Corporation

Meet the growing demand for floor care products with a clear view of cleaning in action.

Today's consumers demand to see the action that makes dirt and stains disappear from floors and carpets. As such, clear, tough, and chemical-resistant polymers are mainstays of innovative floor care equipment design.

A clear view of cleaning action can turn hazy if chemicals attack the plastic parts. Over time, common household cleaning solutions may create tiny hairline cracks in a clear part, creating a frosted appearance. More important, once the material has deteriorated in this way, stress or impact during use can result in breakage.

Setting the standard from the floor up

Eastar™ copolyester has long been the material of choice for clear or tinted injection-molded parts, such as chemical reservoirs, floor and upholstery nozzles, lenses, and dirt containers. Its outstanding chemical resistance, clarity, and impact resistance ensure floor care components will remain clear and free of hazing, crazing, or cracking through years of use.

Parts made of Eastar have unrivaled clarity and gloss but offer more than just aesthetic appeal. The material's toughness, superior chemical resistance, and outstanding resiliency mean parts keep their looks and performance through years of use.

Eastar also lends itself to various types of fabrication techniques, including sonic welding, spin welding, and adhesion. It is also suitable for clear, tinted, or molded-in color applications.

A clear case for durability

DuraStar™ polymers are one of our clearest families of products. They beautifully combine clarity with enhanced impact and chemical resistance, making them a favorite for floor care, major appliances, displays, sporting goods, and other consumer products.

DuraStar is a very versatile polymer, and molders quickly discover that it is a very forgiving material with a wide processing window. In many applications, it offers the advantages of faster cycle times, minimal drying, and little—if any—need for retooling.

Eastman offers some of the most popular—and durable—clear polymers available. Each has a balance of attributes that stand up to the demanding floor care industry. And all are free of BPA, halogens, and *ortho*-phthalate plasticizers.

Proven polymers for premium appliances

Today, Eastman polymers provide crystal clear views inside refrigerator compartments, ice buckets, washer and dryer doors, and many more appliances. They provide durable, chemical-resistant substrates that can handle everyday use and the most diligent cleaning.

Eastman materials perform well in the kitchen, laundry room, and throughout homes and businesses. More important, they demonstrate the durability your customers expect. In that respect, you'll discover that Eastman copolyesters perform admirably in another room altogether: the showroom.

To succeed in this market, brands are choosing to compete in higher-margin premium segments. This means creating uncommon products that not only work better but look, feel, and sound different as well.

Consumers have to be able to see, feel, and hear quality in every aspect of the product, including design, construction, and materials used.

Eastman copolyesters can stand up to the daily grind of repeated cycles and the high-impact reality of the working world. It's no spin to say that the materials you choose can make all the difference by providing just the right thermal, mechanical, acoustical, and rheological characteristics you need to create a premium product.

APPLICATIONS

Refrigeration

- Trays and bins
- Ice storage
- Water filtration sumps
- Light management (guiding, diffusing, reflecting)
- Control panels (substrates, decorative, and functional films)

Laundry

- Front-loading washer and dryer door lenses
- Top-loading washer doors and components
- Control panels (substrates, decorative, and functional films)

Dishwashers

- Interior components
- Light management (guiding, diffusing, reflecting)
- Control panels (substrates, decorative, and functional films)

Floor care

- Dust bins and containers
- Water tanks
- Housings
- Nozzles and accessories

Why is chemical resistance important?

As the world becomes more germophobic, people will start using more concentrated, high-efficiency antibacterial detergents on everything—particularly with and on their household appliances. Added fragrances will also be a trend. To keep customers happy with your brand, choose a polymer that can stand up to these chemicals . . . beautifully and for years to come.

Summary of characteristics

Needs	PC	Acrylic (PMMA)	tABS (PMMA/ ABS blend)	Tritan	DuraStar
Clarity	◕	●	◔	●	●
Toughness	●	○	◑	●	◕
Chemical resistance	◑	◔	◔	●	◕
Assembly	◕	○	◑	●	●
Design flexibility	◑	◔	◑	◕	◕
Processing ease	◔	◑	◑	◑	●
Sound damping	◔	◔	◕	●	◕
BPA free	○	●	●	●	●

● Most desirable ○ Least desirable or unacceptable

Cool trends Hot demands

With ease of processing and an array of technical support, Eastman copolyesters also open up new design options for brands. For example, brands now have the flexibility to mold our polymers behind labels and film using either injection molding or blow molding processes. Either way, the glasslike clarity of the substrate creates compelling designs, crisp and precise presentations of text and logos, and bright shine through for LED-backlit applications.

Our polymers free designers to create thin-walled lenses, windows, and covers that enhance aesthetics and usability—without some of the compromises inherent with materials such as polymethyl methacrylate (PMMA), polycarbonate (PC), and transparent acrylonitrile-butadiene-styrene (tABS) copolymers.

Designers, molders, and engineers rely on Eastman for a full range of services, including primary and secondary processing support, design reviews, product testing, and marketing support.

eastman.com/appliances

EASTMAN

The results of **insight**™

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