The Clear Choice for a Clean Environment

Why PET Thermoform Trays Are the Future of Sustainable Packaging

CLEARLY CLEAN

The Sustainable Packaging Imperative

- **Consumers Demand Eco-Friendly Packaging**
  - 90% more likely to buy from brands with sustainable packaging (SHORR.COM)
  - 43% pay extra; 39% switch brands for greener packaging (SHORR.COM)
- **Millennial & Gen Z Influence**
  - 59% of Millennials and 56% of Gen Z actively seek eco-friendly packaging (SHORR.COM)
  - Willingness to pay premium for brands aligned with sustainability (SHORR.COM)
- **Regulatory Momentum**
  - 11 U.S. states and 250+ localities ban or restrict foam (PACKAGINGDIVE.COM)
  - Proposed federal “Farewell to Foam Act” by 2026 (PACKAGINGDIVE.COM)

Polystyrene Foam (EPS) – Banned and Dated

- **Widespread Bans**
  - Maryland first foam ban (2020); now Maine, VT, NY, NJ, CO, WA, OR, RI, DE (EN.WIKIPEDIA.ORG)
  - Major cities: NYC, D.C., Seattle, SF, Boston (PACKAGINGDIVE.COM)
- **Negligible Recycling**
  - Less than 5% recycled of approximately 80,000 tons/year (EPA.GOV)
  - Maryland foam ban reduced coastal foam litter by 65% (PACKAGINGDIVE.COM)
- **Persistent Pollution**
  - Breaks into microplastics, contaminates recycling streams
  - Common litter item – clogging storm drains and harming wildlife (FREEDONIAGROUP.COM)

Foam's Health & Safety Concerns

- **Styrene Toxicity**
  - Classified as a possible human carcinogen by WHO's International Agency for Research on Cancer (WORLDCENTRIC.COM)
  - Listed under California Prop 65 since 2016 (PACKAGINGLAW.COM)
- **Leaching into Food**
  - California OEHHA advises against storing or microwaving food in polystyrene containers (PACKAGINGLAW.COM)
  - Styrene can migrate into food, especially hot or acidic items (PACKAGINGLAW.COM)
- **Non-Biodegradable**
  - Lasts centuries in the environment (PACKAGINGDIVE.COM)
  - Flammable and can release toxic fumes if burned improperly

PLA Bioplastics – “Compostable” but Not Practical

- **Industrial Composting Required**
  - Needs at least 140°F and special microbes – conditions not found in nature or home compost (POPSCI.COM)
  - Only about 12% of U.S. households have access to composting collection (WASTEDIVE.COM)
- **Contaminates Recycling & Landfill Realities**
  - Different chemical composition than PET – can contaminate recycling streams
  - Most recovery facilities can’t reliably sort PLA (often resin code #7 “Other”)
  - Decomposes anaerobically and releases methane (25× more potent than CO_2) (WASTEDIVE.COM)
  - Many industrial composters refuse PLA under USDA organic rules (WASTEDIVE.COM)

Molded Fiber Trays – Hidden Environmental Costs

- **Resource-Intensive & PFAS Chemicals**
  - Heavier, bulkier – higher transport emissions
  - Higher water and energy usage in production
  - Many treated with PFAS for oil/moisture resistance (EPEUSA.COM)
  - “Forever chemicals” persist indefinitely in environment (EPEUSA.COM)
  - Banned in food packaging in several states (CA, WA, NY)
- **Limited Composting & Functional Limitations**
  - PFAS-treated trays not truly compostable
  - Plastic-lined fiber compromises biodegradability
  - Opaque packaging hinders product visibility
  - Studies show transparent packaging increases perceived freshness and purchase intent (SCIENCEDIRECT.COM)

Polypropylene (PP) – Recycling Limitations

- **Low Recycling Rates & Sorting Challenges**
  - Only 3-5% recycling rate in the U.S. (EPA.GOV)
  - Curbside acceptance historically lagged behind PET
  - Near-infrared optical sorters cannot detect carbon black PP (RECYCLENOW.COM)
  - Black trays often missed and landfilled even if technically recyclable
- **Limited Clarity & Material Efficiency**
  - Naturally translucent or opaque – lacks PET's glass-like clarity
  - Food-grade recycled PP less established than rPET
  - Consumer preference for transparent packaging that showcases product (SCIENCEDIRECT.COM)
  - PP trays often heavier than PET equivalents
  - Requires more material to achieve same strength

PET Thermoform Trays – Highly Recyclable & Circular

- **Most Widely Recycled Plastic**
  - PET (#1) accepted by most curbside programs (NAPCOR.COM)
  - Thermoform recycling quadrupled between 2011–2023 (NAPCOR.COM)
  - Strong recycling infrastructure established nationwide
- **High Demand for rPET & Closed-Loop Potential**
  - 168+ million pounds of PET thermoforms reclaimed in 2023 (NAPCOR.COM)
  - Strong end-markets for bottles, trays, fibers
  - FDA-approved for food-contact recycling (WWWN.CDC.GOV)
  - Minimal quality loss over multiple recycling cycles (NAPCOR.COM)
  - Follows APR design guidelines for maximum recyclability (PLASTICSRECYCLING.ORG)
  - Aligns with recycled content mandates (CA: 25% by 2025, 50% by 2030) (CALRECYCLE.CA.GOV)

PET Advantages – Clarity, Strength, Compatibility

- **Crystal Clear & Strong**
  - Transparency boosts perceived freshness & purchase intent (SCIENCEDIRECT.COM)
  - Allows shoppers to see product from all angles (PACKAGINGDIGEST.COM)
  - 3× stronger than foam, using thinner material (CLEARLYCLEAN.COM)
  - Resists cracking and shattering under stress
  - Fewer leakers and reduced product damage (PACKAGINGDIGEST.COM)
- **Drop-In Replacement & Food Safety**
  - Runs on same foam/PP machinery – no equipment changes (CLEARLYCLEAN.COM)
  - Works with same overwrap films and sealing equipment
  - FDA-approved for food contact; no BPA, phthalates or PFAS
  - Good oxygen and moisture barrier properties
  - Meets or exceeds shelf-life performance of foam trays (PACKAGINGDIGEST.COM)

Life-Cycle Advantage – Less Resource, Less Impact

- **Lightweight Efficiency & Lower GHG Emissions**
  - Replacing plastics with alternatives increases packaging mass by ~4.5× (AMERICANCHEMISTRY.COM)
  - PET trays weigh significantly less than equivalent molded fiber
  - Non-plastic alternatives increase GHG emissions by 70–120% (AMERICANCHEMISTRY.COM)
  - DPET manufacturing uses ~65% less electricity vs. APET (INTERPACK.COM)
  - 25% lower carbon footprint with DPET technology (INTERPACK.COM)
- **Waste Reduction & Advanced Production**
  - Recyclable PET keeps material in the circular economy
  - Reduces virgin resin demand through multiple recycling cycles
  - Modern DPET processes eliminate energy-intensive steps
  - Lower Scope 1, 2, and 3 emissions than even recycled APET (INTERPACK.COM)
  - Continuous improvement in PET production efficiency

Clearly Clean's PET Trays – Future-Ready

- **Regulatory Compliance & Brand Trust**
  - Addresses foam bans in 11 states and 250+ localities
  - Aligns with Extended Producer Responsibility (EPR) laws
  - Meets recycled content mandates (CA: 25% by 2025) (CALRECYCLE.CA.GOV)
  - 90% of consumers prefer eco-friendly packaging (SHORR.COM)
  - Clear trays showcase product quality and freshness
- **Seamless Integration & Closed-Loop Leadership**
  - Runs on existing high-speed packaging lines (PACKAGINGDIGEST.COM)
  - Available in various sizes including compartmented versions (PACKAGINGDIGEST.COM)
  - Thinner gauge enables cost parity or savings vs. foam
  - 100% recyclable in existing infrastructure
  - Can incorporate recycled PET content
  - Enables credible sustainability marketing claims

Make the Clear Choice Today

- **Start Your Sustainable Packaging Journey**
  - Request a free consultation and samples from Clearly Clean
  - Schedule a packaging assessment to identify foam replacement opportunities
- **Contact Information**
  - clearlyclean.com
  - sales@clearlyclean.com
  - 888.769.8723
- **Final Takeaway**
  - PET thermoform packaging: The sustainable, high-performance alternative
  - Meets consumer, regulatory, and environmental demands simultaneously
  - Join industry leaders already making the switch to recyclable PET trays