ENVIROCLEAR® -

Environmentally friendly, oxygen and CO₂ barrier system, cost efficient, no molds required.

The Enviroclear® Oxygen and Carbon Dioxide Barrier System for PET and oriented Polypropylene Bottles and all injection molded parts

- .00078cc/pkg/day oxygen ingress for PET 500 ml bottle ambient conditions
- .0025cc/pkg/day oxygen ingress for OPP 500 ml bottle ambient conditions
- Most cost effective barrier system on the market today
- No molds or special equipment required
- Good for hot fill liquids up to 100˚C
- Completely recyclable
- FDA and European approved for direct and indirect food contact
- Inside coating for dry products (approved for direct food contact)
- Soon to have inside coating for fluids
- Can be retortable
- Used with standard ISBM equipment (Sidel, SIG)
- Dissolves in water
- Various thicknesses can be applied for improved barrier
- colorisation possible (dyes)
- Dotting with nanoparticles as well as clays possible
- Adhesion adjustable
- Moisture barrier enhanced x 5 times improvement
A clarified random co-polymer plastic bottle as clear as PET

Barrier Technologies in Market

MULTILAYERS

e.g. EVOH, MXDG
- Requires new production lines
- Complicated / difficult to run
- Cost of barrier layer
- Recycling problematic
- Generally requires binding layers (i.e. min 5 layers)
- Special very expensive molds and machines
- Barrier not high enough, degrades with humidity

INSIDE COATINGS

e.g. SiO2, diamond-like carbon, amorphous Carbon
- Lowspeeds
- High costs (vacuum)
- Cracking & delamination
- Recycling

OUTSIDE COATINGS

e.g. Epoxy-ariline spray coating
- Matrix oxygen
- Recycling

MATERIALS

e.g. PEN (polyethylene raphthalate)
- Expensive
- Barrier still not high enough (e.g. PEN 5xPET barrier)

FDA Compliance

The polymeric substances *Enviroclear Liquibarrier and *Enviroclear Liquicoat are in compliance with the Code of Federal Regulations (FDA) title 21 CFR §175.300 (resinous and polymeric coatings). This paragraph regulates that these resinous and polymeric coatings may be safely used as the food-contact surface of articles intended for use in producing, manufacturing, packaging, processing, preparing, treating, packaging, transporting, or holding food.

Oxygen permeability results - 500 ml bottle

Comparison of oxygen barrier technologies

Barrier Properties of Some Common Plastics
Kuraray - world leader in polymer chemistry

Kuraray is the leading supplier of polyvinyl alcohol (Mowiol and Kuraray Poval), its films and fibres (Kuralon), polyvinyl butyral (Mowital and Pioloform) and its films (Trosifol) for the global market. Kuraray also manufactures a variety of special polymers like ethylene vinyl alcohol copolymers (Exceval & EVAL) and thermoplastic estomers (Septon & Hybrar). In addition, based on the polymer technologies, the company also supplies dental products, fibres, textiles and synthetic leathers. Employing more than 6,500 people, the Kuraray Group achieves annual sales of about four billion dollars.

Kuraray Europe GmbH (KEG) is a 100 percent subsidiary of the Japanese Kuraray Co. Ltd. in Tokyo. KEG is based in Frankfurt am Main and employs almost 650 people. The company achieves annual sales of almost four hundred seventy million euros. At its production site in the industrial park in Frankfurt-Höchst it produces nearly 74,000 tons of polyvinyl alcohol and almost 40,000 tons of polyvinyl butyral per year.

Container Corporation of Canada

Founded November 1, 1977, Container Corporation of Canada is a AAAA1 Dun & Bradstreet rated Corporation having diversified interests in preform and plastic bottle manufacturing specializing in injection stretch blow molding polypropylene, PET, and extruded high-density polyethylene packaging. Enviroclear Barrier Preform Inflation Technology and Enviroclear Barrier application chemistry and machinery application systems, are related divisions promoting the efficacy of the plastic packaging and bottle division, the Enviroclear Barrier Global Licensing of the Enviroclear Technology Group complements the related plastic divisions. Other interests include paper and corrugated manufacturing packaging and real estate development, building and construction.

At Container Corporation of Canada, we are dedicated to focusing our mission on seizing the opportunities and meeting the challenges of our customers’ ever changing needs within an environmentally conscientious and long-term commitment.
Enviroclear®
OXYGEN AND CO₂ BARRIER SYSTEM FOR PET + POLYMER PLASTIC BOTTLES & PARTS