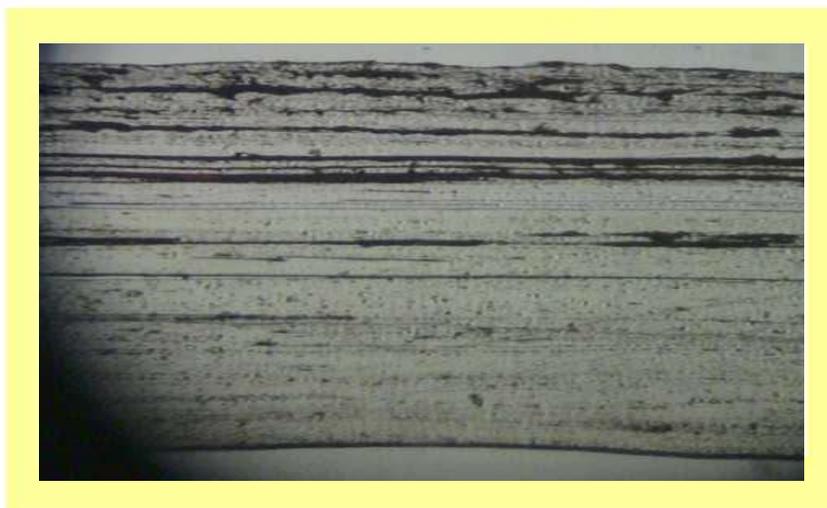


## 1. High Density Polyethylene BARITAINERS® using KORTRAX® (Pat. Pend.) Barrier Resin (BR) technology.

The BP Polymers trademark KORTRAX® (Pat. Pend.) covers a range of different barrier resins. BR is the abbreviation for "barrier resin" which describes the concept of a barrier resin additive introduced via the Master batch in a single-hopper/mixer processing technique. Kortrax® (Pat. Pend.) is used to create discontinuous barrier layers in an high density polyethylene (HDPE) extrusion process, whether in an accumulator or continuous extrusion blow molding machine.

Numerous overlapping layers - or platelets - of polyamide are distributed thru out the entire wall of the HDPE container by means of special extruder tooling and careful monitoring of the extrusion process. These overlapping polyamide layers reduce the permeability of the HDPE container wall by extending the path taken by any volatile organic compound (VOC) molecule migrating (permeating) through it. The barrier layers formed are mono-structures in that they are integrated within the HDPE wall matrix creating one solid polymer structure. The resultant unified container of HDPE plus Kortrax® BR is trademarked Baritainer®.



**Section of a HDPE Container Wall with KORTRAX® (Pat. Pend.) Barrier Layers**

KORTRAX® (Pat. Pend.) BR consists of a modified polyamide 6 engineered to work with HDPE. Since it is packaged as a granular material, the concentration of KORTRAX® (Pat. Pend.) BR can be varied and its barrier properties thus adjusted to meet specific requirements. The finished container, i.e. Baritainer®, retains the excellent physical characteristics of the HDPE base resin with no negative impact on label adhesion, colorants chosen or other mechanical properties.

With favorable processing conditions and the appropriate concentration of KORTRAX® BR, barrier properties can be up to 100 times more effective in the containment of hydrocarbons/VOC's than sole HDPE. And, as a secondary benefit, it reduces water vapor and oxygen transmission rates vs. sole HDPE. Finally, there is no shelf life issue as the Kortrax® BR layer does not degrade.

**Baritainers® are produced by various Manufacturing Partners under license from Barrier Plastics.**

## 2. Fields of Application for BARITAINER® Packaging.

Baritainer® packaging can safely contain and transport various solvents, VOC's and other industrial chemicals requiring barrier containment in packaging. They can also safely transport flavors and fragrances, adhesives and agro-chemicals.

Baritainers® are thus an economically attractive and environmentally effective alternative to metal, multi-layer, and fluorinated HDPE containers. They can also replace other barrier resin containers such PVC that are especially found in the automotive after market.

Baritainers® exhibit improved OTR and WVTR performance vs. sole HDPE and other barrier technologies. Baritainers® thus offer a human safe alternative for food packaging and other ladings requiring reduced oxygen exposure.

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### 3. Environment/End-of-Life Disposal.

KORTRAX® (Pat. Pend.) BR is a safe, nontoxic and noncorrosive polymer. It is not only safe for the user but it is also recyclable without any need for special handling in end of life disposal. KORTRAX® (Pat. Pend.) BR is compatible with food products as it is FDA and EU compliant.

### 4. Properties and Special Features of BARITAINER® HDPE Packaging:

- Highly Effective Barrier Structure
- Can be Recycled
- Rugged and Impact Resistant
- UN Certification available
- Resistant to Solvents and VOC's (see chemical compatibility chart)
- Human Safe (compatible with food products)
- UV Optical Tracer to indicate presence of Kortrax® (Pat. Pend.) BR
- Resistant to High and Low Temperatures
- Stackable as top load strength is not impacted
- Various Blow Molded Shapes and Sizes Available
- No PFAS, PFOS Exposure

### 5. Identification

BARITAINER® products, UN and non-UN, are marked with the BARITAINER® logo embossed in the container wall (see photo at right). The brand marking also serves as our seal of quality for this special barrier container.



### 6. Developments

KORTRAX (Pat. Pend.) BR® technology can be used for HDPE and PP containers both UN and non-UN. Barrier Plastics works with multiple Manufacturers producing various designs and styles of Baritainers® for both custom and standard applications. Please contact Barrier Plastics to learn more as to how KORTRAX® (Pat. Pend.) BR Technology fits your packaging requirements.

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