

BARITAINER® JERRY CANS - FAQ's

1. What type of Baritainers does Dynalon sell at this time?

Dynalon currently sells Baritainer Jerry Cans. Please visit our website (www.dynalon.com) for detailed information about our line of Baritainer Jerry Cans and other types of plastic containers. Our product line continues to expand with new and improved products, special promotional programs and technical information.

2. Is this new technology?

This technology has been in prior use in Europe for approximately the last 15 years with very positive results and wide acceptance. It is relatively new to the US and is just beginning to be looked at and adopted as a cost-effective and environmentally friendly alternative to steel, metal packaging as well fluorinated plastic containers.

3. What are the benefits of Baritainers?

- >HDPE base resin material
- >Barrier properties are permanent
- >Economical and cost-effective, light weight
- >Easier to manage, handle and are stackable
- >Eco-friendly (no worries regarding fluorine)
- >Reduced carbon footprint
- >Food grade compatible (FDA Compliant)

4. Are Baritainers Recyclable?

Yes, since Baritainers are at least 93% base HDPE they are recyclable. Each Baritainer has the following recycle code:



5. How do I know if my product can be packaged or stored in Baritainers?

We strongly recommend that before a particular product is packaged or stored in a Baritainer, compatibility testing be performed. We can provide a Baritainer sample for chemical compatibility testing. Please contact us for additional information on chemical compatibility information.

6. Are custom projects available?

Yes, we will consider custom projects; please contact us for further discussion.

Technical Information

1. Are the barrier properties permanent?

Yes. Since the mono-layer HDPE/Nylon lamella structure is a derivative of the manufacturing process, the barrier properties are permanent and will not degrade or wear off over time. Thus, there is no concern relative to shelf life, storage time or abrasion of surface treatment as in fluorinated products.

For additional information contact Dynalon at 1.800.334.7585 or www.dynalon.com

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2. What packaging problems do Baritainers address?

Baritainers virtually eliminate or reduce a variety of problems normally associated with the chemical attack of polyolefin products including:

- >Chemical Permeation
- >Paneling and distortion
- >Product Weight Loss
- >Container Discoloration
- >Odor Emission
- >Flavor, Fragrance and/or Active Ingredient Loss
- >Interaction of the Container with the Product

3. Can you give me a more exact picture of how the Quoral BR technology works?

Quoral BR is a nylon additive that is added to the HDPE master batch during the manufacturing process. During this proprietary manufacturing process discontinuous platelets are formed within the HDPE matrix that acts as a "tortuous path" to the long chain molecules trying to migrate thru the HDPE container wall into the atmosphere.

This barrier greatly reduces the permeation and scalping of a range of fuels, chemicals, solvents, flavors and fragrances. Container softening and/or swelling can be reduced in many cases and long term paneling through weight loss of product can often be brought down to an acceptable level or even eliminated. Quoral BR effectively extends the application bounds of polyethylene containers and tankage. This allows lower cost polyethylene to be used in applications with aggressive chemicals, such as with agricultural chemicals, lab solvents, institutional/industrial cleaning formulations, food, pharmaceuticals and cosmetics where untreated containers would have marginal success in containing the product.

5. Can Baritainers be manufactured in various colors?

Yes. Please remember that the base material of our Baritainers is HDPE so they can be produced in a variety of colors, shapes and gram weights. In addition, they can be silk screened and labeled.

6. What causes paneling? Does Quoral BR prevent it in the Baritainers?

Paneling is a direct result of a reduction in volume of the contents in a container. The contents being the liquid, the headspace gas or both. The absorption of content into the container walls where it plasticizes the polymer (HDPE) may further aggravate the paneling problem.

Reduction in volume of liquids is due to absorption and permeation. Plasticization is due to absorption. Reduction in the volume of headspace gasses is due to absorption of the gas into the liquid or removal of oxygen through oxidation of the contents.

Quoral BR prevents paneling and plasticization from occurring because of the HDPE/Nylon lamella micro-structure that occurs during the proprietary manufacturing process technology.

7. What are the numbers for permeation rates in Baritainers?

Data does exist for weight loss of pure solvents in Baritainers and for many there is a substantial reduction of product loss but we do not advise utilizing this data for package engineering.

Most product formulations are a complex mixture of ingredients. Some ingredients may permeate; some others may not. A permeate may be important to efficacy, or may be an inert filler, extender or carrier.

Thus, it is unreliable to use permeation data for single solvents to predict permeation of complex mixtures. The only valid approach is to perform tests with the actual formulation in each container application.

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8. Why is permeation testing so important?

It is important to perform permeation tests with your Baritainers since there are several factors that affect the barrier properties for any given package. Some of the factors that impact barrier performance include weight, closures, and wall thickness, percentage of Quoral BR shape and product formulation. A change in any one of these factors can affect the barrier level of the package. We emphasize the importance of permeation testing of Baritainers that are identical to the ones that will be used for your production.

The US Department of Transportation (DOT) has regulations regarding packaging and transportation of chemicals that permeate plastic. Please refer to testing protocol for the Code of Regulation of the Department of Transportation, Appendix B to Part 173 - Procedure For Testing Chemical Compatibility and Rate of Permeation in Plastic Packaging and Receptacles.

9. How is permeation testing performed?

The US Department of Transportation requirement for products transported over US highways is that chemicals and solvents lose less than 2% weight per year. This serves to protect warehouse and shipping personnel from excessive fume exposure and to protect the consumer from underweight packaging. Note that for some hazardous materials the permissible weight loss is only 0.5% per year! Baritainers are engineered and manufactured with Quoral BR and our proprietary manufacturing process to meet these targets. Our customers worldwide have been able to maintain use of impact resistant HDPE packaging and avoid switching to less desirable glass or metal containers.

Please refer to testing protocol as defined in the Code of Regulation of the DOT Appendix B to Part 173 - Procedure for Testing Chemical Compatibility & Rate of Permeation in Plastic Packaging & Receptacles.

10. Are Baritainers UN rated?

Yes. The Baritainer Jerry Can is UN rated and has met the very rigorous standards to be **X rated**, equivalent to DOT Packaging Group I, the toughest standard for rigid plastic containers.

11. Are Baritainers FDA compliant?

Yes. If necessary, please ask for our **FDA Compliant Letter**. Quoral BR is in conformity with **EC regulation**.



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