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## PLASTIC CONTAINERS AUTOMOTIVE ADDITIVES, OILS LUBRICANTS

***A Brief Case Study by Stuart Feen, President, Plastic Bottle Corporation***

Packagers of automotive additives, specialty oils and a variety of lubricants know that it is not easy to successfully bring a product to the retail shelf. Extensive work must be done well before the products are packed into their various containers which, for the purposes of this discussion, are considered to be plastic bottles.

The first step in choosing the right plastic container should be testing for the chemical compatibility of the product or products to be packed in the chosen container or containers. Many types of chemicals, additive packages and oils are utilized to create an automotive additive, specialty oil or lubricant. Not all chemicals are compatible with all type of plastics used in plastic bottles. A number of chemicals are fairly aggressive in their reaction to various plastics used in plastic bottles. Aggressive chemicals such as xylene and toluene are so strong, they can distort and soften some plastics to the point where what was once a rigid plastic bottle is now a fairly flexible plastic bag. Automotive additives are currently packaged in a variety of resins and/or compounds. These include, but are not limited to HDPE, PVC, P.E.T., and BAREX. The actual material to be used in the plastic bottle must be determined by thorough and complete testing.

### Not all chemicals are compatible with all type of plastics used in plastic bottles.

The most popular compatibility test is to put actual product into the intended plastic bottle, close tightly and place the test samples in a laboratory oven at 120 degrees F for 30 or 35 days. The bottles should be checked daily for any changes in gram weight, color of bottle, odor on outside of the bottle indicating migration, and any other characteristics which are deemed important and appropriate to the particular product and testing protocol used by the particular testing facility, which may be an in-house QC department or a professional testing laboratory. Many people believe that 30 or 35 days in the oven at 120 degrees F approximate 6 months on the store shelf. However, this is only an approximation and we caution all of our customers and prospects to carefully test for however long they feel is proper and necessary. A part of any testing procedure should also include drop tests, both bare bottles and bottles in the intended shipping carton. Also related to dropping of the bottles, we highly recommend that bottles should not be shipped by UPS or any other such form of single package delivery. If people do wish to ship by UPS or some other such delivery service, then they should seek the help of the particular delivery service in developing the proper shipping container. Filled product in plastic bottles is best shipped on pallets. We highly recommend to all of our customer that the shipper carton be designed to carry any and all required loads and protect the bottles from side loads and most especially top loads.

The responsibility for testing the product with container and for designing and testing shipper cartons rests solely with the purchaser of the bottles. We can offer a certain amount of help in all of the areas discussed above, but in the end, it is the responsibility of the customer. No company should assume that their chemicals will be compatible with any plastic bottle, nor assume a product is compatible with a plastic bottle just because another company has a similar product on the shelf. Thorough testing, either a shelf test or an oven test, should be completed to assure long term shelf life of your product.