

HYDROFLUORIC ACID, 70% PERMEATION AND COMPATIBILITY CERTIFICATION

This document is provided as certification of compliance to the requirement of 49 CFR, Chapter 1, Part 173.24(e)(3)(ii) to perform Permeation and Compatibility Testing of plastic packaging used to contain Packing Group I materials.

Specifically stated, *“Each plastic packaging or receptacle which is used for liquid hazardous materials must be capable of withstanding without failure the procedure specified in Appendix B of this part (“Procedure for Testing Chemical Compatibility and Rate of Permeation in Plastic Packagings and Receptacles”). The procedure specified in Appendix B of this part must be performed on each plastic packaging or receptacle used for Packing Group I materials. The maximum rate of permeation of hazardous lading through or into the plastic packaging or receptacles may not exceed 0.5 percent for materials meeting the definition of a Division 6.1 material according to Section 173.132 and 2.0 percent for other hazardous materials, when subjected to a temperature of no lower than –*

*18°C (63°F) for 180 days in accordance with Test Method 1 in Appendix B of this part;
50°C (122°F) for 28 days in accordance with Test Method 2 in Appendix B of this part; or
60°C (140°F) for 14 days in accordance with Test Method 3 in Appendix B of this part.”*

It is herein attested that Permeation and Compatibility Testing per 49 CFR, Chapter 1, Part 173, Appendix B, Method 2 was performed with a sample set of three (3) Beta Bottles, 4 Liter, natural, Equistar LR7340-01 HDPE and a sample set of three (3) Beta Bottles, 4 Liter, natural, PPQ Resin, both sets having been supplied by PurePak Technology Corporation (PurePak), Chandler, AZ and each bottle packaged with approximately 4,635 grams net of 70% Hydrofluoric Acid at Columbus Chemical Inc., Phoenix, AZ.

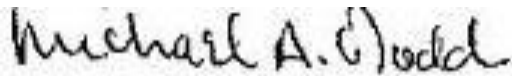
Bottle	Resin	Tare Wt. (grams)	Pre Oven Gross (grams)	Post Oven Gross (grams)	Net Fill (grams)	Wt. Loss Net (grams)
A	PPQ	229.4	4,880.7	4,876.3	4,651.3	4.4 (0.09%)
B	PPQ	228.3	4,812.6	4,808.5	4,584.3	4.1 (0.09%)
C	PPQ	229.0	4,887.4	4,883.3	4,658.4	4.1 (0.09%)
D	LR7340-01	229.2	4,906.0	4,901.6	4,676.8	4.4 (0.09%)
E	LR7340-01	228.9	4,867.1	4,862.7	4,638.2	4.4 (0.09%)
F	LR7340-01	229.4	4,828.4	4824.1	4,599.0	4.3 (0.09%)

On 03/05/2010, all six (6) packaged bottles were weighed then placed in a 50°C oven at PurePak to remain for a 28 day period. On 04/02/2010, after 28 days in the oven, and with the bottles having been inverted in the oven for the first and last 24 hours, the bottles were removed, visually inspected, weighed. All six bottles were then returned to Columbus for decanting and bottle rinse with water. The six (6) rinsed bottles returned to PurePak where they were filled to 98% of overflow capacity with water and at room temperature each bottle was individually dropped from 1.9 meters (75 inches) onto a concrete floor.

Results:

- 1.) Visual inspection showed all bottles to be in pristine condition following the oven period. There was no evidence of fractures, deformities, failure or leakage wetness. The only distinguishing display was that the three (3) bottles molded with Equistar LR7340-01 HDPE exhibited a light beige discoloration at the bottle shoulder and neck areas and along the bottom parting line while the PPQ bottles remained the original white (natural) color. **PASS**
- 2.) A weight loss of 0.09% was recorded for each of the six (6) bottles (4.28 grams average) versus a maximum allowable loss of 0.5% (23.18 grams average). **PASS**
- 3.) All six (6) bottles remained unscathed from their 75 inch drop test. There were no failures and no water escaped. The bottles retained their original shape and showed no effect of having been dropped. **PASS**

Having personally performed the above detailed physical testing and inspections, I hereunder attest that this document is true and accurate. Furthermore, it serves to document compliance to the Code of Federal Regulations and demonstrates the suitability of packaging 70% Hydrofluoric Acid in PurePak Beta Bottles produced with Equistar LR7340-01 and with PPQ Resin.



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