# UNITED NATIONS / DOT PERFORMANCE CERTIFICATION

## 4G DESIGN QUALIFICATION

## 6 x 2.5 Liter Plastic Bottle Variable Packaging

## TEST REPORT #: 13-7199

(un) 4G / Y29.1 / S / **
USA / +CC6166

**Insert the year packaging is manufactured

## TESTING PERFORMED FOR:

**PUREPAK TECHNOLOGY CORPORATION**
324 South Bracken Lane Suite3
Chandler, AZ 85244

**ATTN: Michael Dodd**

## TESTING PERFORMED BY:

**TEN-E PACKAGING SERVICES, INC.**
326 North Corona Avenue
Ontario, CA 91764
Phone: 909-937-1260
Fax: 909-937-1262

November 6, 2013

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## NOTES AND COMMENTS

Tested as a design qualification due to a change in the corrugated basis weight. The packaging will retain the +CC6166 Identification.

6 x 2.5 Liter Plastic Bottle Variables Tested:
#1) 6 x 2.5 Liter Plastic Bottle with 45mm Opening And Taped Top and Bottom Flaps
#2) 6 x 2.5 Liter Plastic Bottle with 45mm Opening And Taped Top and Hot Melt Glued Bottom Flaps
#3) 6 x 2.5 Liter Plastic Bottle with 38mm Opening And Taped Top and Bottom Flaps
#4) 6 x 2.5 Liter Plastic Bottle with 38mm Opening And Taped Top and Hot Melt Glued Bottom Flaps

PurePak Technology may use Identification +CC6166 for a 4 x 2.5 Liter Plastic Bottle Variable Packaging & a 1 x 2.5 Liter Plastic Bottle Variable Packaging provided they meet 49 CFR; 178.601 (g)(1) Selective Testing Variation 1 and 49 CFR; 178.601 (g)(4) Selective Testing Variation 4.

## SECTION I: CERTIFICATION

### Design Qualification of the PurePak Technology Corporation 6 x 2.5 Liter Plastic Bottle Variable Packaging

**TEN-E Packaging Services, Inc**. is a current DOT UN Third-Party Certification Agency under §107.403 and certifies that the **PurePak Technology Corporation** packaging referenced above has passed the standards of the DEPARTMENT OF TRANSPORTATION'S TITLE 49 CFR; Performance Oriented Packaging Standards, Section 178. This package is also certified under IMDG, ICAO/IATA Regulations and the UN Recommendations on the Transport of Dangerous Goods. It is the responsibility of the end user to determine authorization for use under these regulations. The use of other packaging methods or components other than those documented in this report may render this certification invalid.

**SUMMARY OF PERFORMANCE TESTS**

| UN / DOT TEST | CFR REFERENCE | TEST LEVEL | TEST CONTENTS | TEST COMPLETED | TEST RESULTS |
|---|---|---|---|---|---|
| Drop #1 & #2 | 178.603 | 1.9 m | Methanol/Water | October 24, 2013 | PASS |
| Drop #3 & #4 | 178.603 | 1.9m | Methanol/Water | October 25, 2013 | PASS |
| Stacking #1 & #2 | 178.606 | 725.7 Kg – 24 Hours | Water | October 25, 2013 | PASS |
| Stacking #3 & #4 | 178.606 | 725.7 Kg – 24 Hours | Water | October 28, 2013 | PASS |
| Pressure #1 | 173.27 | 300 kPa - 30 Minutes | Water | November 6, 2013 | PASS |
| Pressure #2 | 173.27 | 300 kPa - 30 Minutes | Water | October 28, 2013 | PASS |
| Vibration #1, #2, #3 & #4 | 178.608 | 3.8 Hz – 1 Hour | Water | October 28, 2013 | PASS |
| Cobb | 178.516 | 30 Minutes | --- | October 23, 2013 | PASS |

| | |
|---|---|
| **TEST REPORT NUMBER:** | **13-7199** |
| **UN MARKING: (CFR 49 – 178.503)** | (un) 4G / Y29.1 / S / ** USA / +CC6166 |
| **PACKAGING IDENTIFICATION CODE:** | 4G - Fiberboard Box (178.516) |
| **PERFORMANCE STANDARD:** | Y (Packaging meets Packing Group II and III tests) |
| **AUTHORIZED GROSS MASS:** | 29.1 Kg (64.1 Lbs) |
| **"S" DESIGNATION:** | Denotes Inner Packagings |
| **YEAR OF MANUFACTURE:** | ** Insert year the packaging is manufactured |
| **STATE AUTHORIZING THE MARK** | USA |
| **PACKAGING CERTIFICATION AGENCY:** | (+CC) TEN-E Packaging Services, Inc. (Ontario CA #2006030021) |
| **THIRD PARTY PACKAGING IDENTIFICATION:** | +CC6166 |
| **PERIODIC RETEST DATE:** | November 6, 2015 |

ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY THAT THE PACKAGING TESTED IS MERCHANTABLE OR FIT FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. In no event shall TEN-E Packaging Services, Inc. liability exceed the total amount paid by **PurePak Technology Corporation** for services rendered. In the event of future changes to the above referenced test standards, it is the responsibility of **PurePak Technology Corporation** to determine whether additional testing or updating of past testing is necessary to verify that the packaging we have tested remains in compliance with those standards.

**MANUFACTURER:**

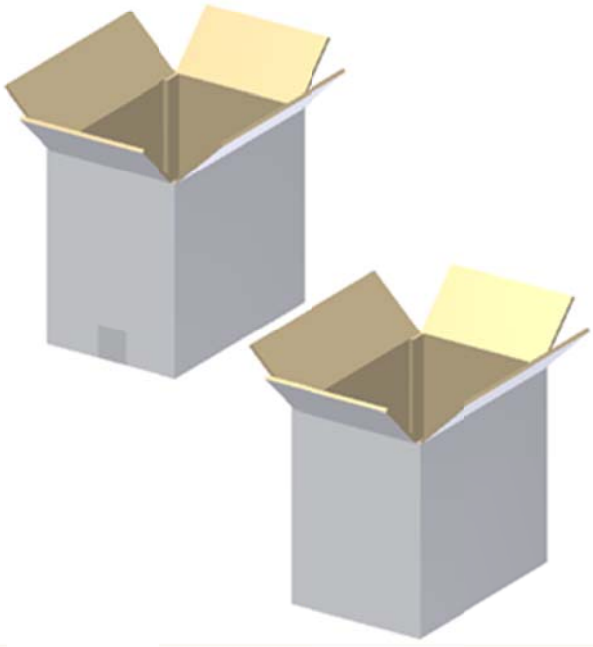
**PurePak Technology Corporation**
324 South Bracken Lane Suite 3
Chandler, AZ 85244

Matt C. Anderson
Project Manager
TEN-E Packaging Services, Inc.

## SECTIONS II & V: PACKAGING DESCRIPTIONS / COMPONENT DRAWINGS

### 6 x 2.5 Liter Plastic Bottle with 45mm Opening

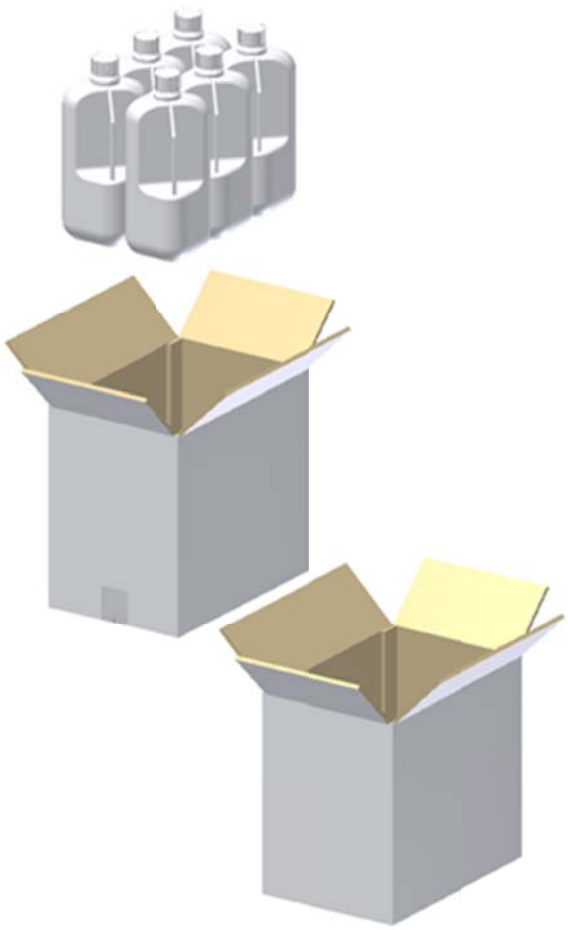
**ASSEMBLY DRAWING**



| TEST LEVELS | | |
|---|---|---|
| Certification Type: | Design Qualification | |
| Packaging Code Designation: | 4G | |
| Packing Group: | II | |
| Specific Gravity: | 1.9 | |
| Internal Pressure: | 300kPa | |
| **TEST SAMPLE PREPARATION** (Refer to Section IV) | | |
| Overall Packaging Tare Weight: | 1,954.0 Grams | |
| Fill Capacity (98% Maximum Capacity): | | |
| Methanol/Water | 2,366.2 Grams | |
| Water | 2,470.0 Grams | |
| Package Test Weight: | | |
| Methanol/Water | 15.8 Kg | 34.8 Lbs |
| Water | 16.4 Kg | 36.1 Lbs |
| Authorized Package Gross Mass: | 29.5 Kg | 65.0 Lbs |
| **CLOSING METHODS – INNER PACKAGING** | | |
| Application Torque: 25 In-Lbs | | |
| Equipment: Snap On Torque Wrench | | |
| **CLOSING METHODS – SHIPPER** | | |
| **Top Flaps:** | | |
| Manufacturer: | 3M: St. Paul, MN | |
| Type: | 3M Scotch Tape | |
| Width: | 48 mm (2") | |
| Overlap: | 2" Minimum | |
| Tape Pattern: | Center Seam | |
| Inner Flaps: | 4-1/2" Width Gap | |
| Outer Flaps: | Meet | |
| **Bottom Flaps:** | | |
| Manufacturer: | 3M: St. Paul, MN | |
| Type: | Option #1) 3M Scotch Tape<br>Option #2) Hot Melt Adhesive (Prepared by Client) | |
| Width: | Option #1) 48 mm (2") | |
| Overlap: | Option #1) 2" Minimum | |
| Tape Pattern: | Option #1) Center Seam | |
| Inner Flaps: | 4-1/2" Width Gap | |
| Outer Flaps: | Meet | |
| Refer to Appendix A for Manufacturer's Closure Instructions | | |

## 6 x 2.5 Liter Plastic Bottle with 38mm Opening

### ASSEMBLY DRAWING



### TEST LEVELS

| | | |
|---|---|---|
| Certification Type: | Design Qualification | |
| Packaging Code Designation: | 4G | |
| Packing Group: | II | |
| Specific Gravity: | 1.9 | |
| Internal Pressure: | 300 kPa | |
| **TEST SAMPLE PREPARATION** (Refer to Section IV) | | |
| Overall Packaging Tare Weight: | 1,949.0 Grams | |
| Fill Capacity (98% Maximum Capacity): | | |
| Methanol/Water | 2,286.1 Grams | |
| Water | 2,386.3 Grams | |
| Package Test Weight: | | |
| Methanol/Water | 15.6 Kg | 34.3 Lbs |
| Water | 16.2 Kg | 35.7 Lbs |
| Authorized Package Gross Mass: | 29.1 Kg | 64.1 Lbs |
| **CLOSING METHODS – INNER PACKAGING** | | |
| Application Torque: 50 In-Lbs | | |
| Equipment: Snap On Torque Wrench | | |
| **CLOSING METHODS – SHIPPER** | | |
| **Top Flaps:** | | |
| Manufacturer: | 3M: St. Paul, MN | |
| Type: | 3M Scotch Tape | |
| Width: | 48 mm (2") | |
| Overlap: | 2" Minimum | |
| Tape Pattern: | Center Seam | |
| Inner Flaps: | 4-1/2" Width Gap | |
| Outer Flaps: | Meet | |
| **Bottom Flaps:** | | |
| Manufacturer: | 3M: St. Paul, MN | |
| Type: | Option #1) 3M Scotch Tape<br>Option #2) Hot Melt Adhesive (Prepared by Client) | |
| Width: | Option #1) 48 mm (2") | |
| Overlap: | Option #1) 2" Minimum | |
| Tape Pattern: | Option #1) Center Seam | |
| Inner Flaps: | 4-1/2" Width Gap | |
| Outer Flaps: | Meet | |
| Refer to Appendix A for Manufacturer's Closure Instructions | | |

**For Packagings with an Established Gross Mass:**

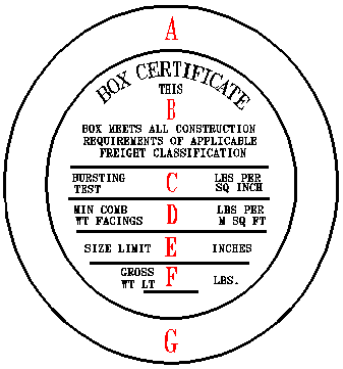
If the gross mass calculation in this report exceeds the previously established gross mass, the manufacturer may elect to maintain the current gross mass marking (e.g. the gross mass rating of the UN marking on the packaging may be less than the calculated gross mass indicated in this report) or use the newly established gross mass. In no event shall the gross mass marking on the packaging exceed the gross mass to which the packaging was tested.

| COMPONENT INFORMATION | | |
|---|---|---|
| **CLOSURE** | | **DRAWING** |
| **Manufacturer: George Menshen GmbH: Finnertrop (4.1451.99.2)** | |  |
| **Description:** | 45mm Threaded Closure Tamper Evident | |
| **Quantity:** | 6 | |
| **Material:** | High Density Polyethylene | |
| **Tare Weight:** | 10.86 Grams | |
| **Overall Dimensions:** | | |
| • **Height** | 30.3 mm | |
| • **Diameter** | 51.3 mm | |
| **Thread:** | | |
| • **Type** | 45mm | |
| • **Style** | Buttress | |
| **Finish Dimensions:** | | |
| • **T** | 1.797” | |
| • **E** | 1.694” | |
| • **Pitch** | 4mm | |
| **Markings (QC Audit):** | 1451 | |
| **Liner:** | | |
| **Description:** | PTFE Liner | |
| **Tare Weight:** | 0.90 Grams | |
| **Thickness:** | 0.012” | |
| **Diameter:** | 0.45mm | |

| CLOSURE | | DRAWING |
|---|---|---|
| **Manufacturer: Rexam Plastic Packaging: Evansville, IN. (Drw. #: QIM-317-4937)** | |  |
| **Description:** | 38mm Threaded Closure | |
| **Quantity:** | 6 | |
| **Material:** | High Density Polyethylene | |
| **Tare Weight:** | 10.43 Grams | |
| **Overall Dimensions:** | | |
| • **Height** | 1.016” ± 0.015” | |
| • **Diameter** | 1.701” ± 0.015” | |
| **Thread:** | | |
| • **Type** | 38mm | |
| • **Style** | 439 | |
| **Finish Dimensions:** | | |
| • **T** | 1.483” ± 0.007” | |
| • **E** | 1.389” ± 0.007” | |
| **Markings (QC Audit):** | 31 | |
| **Liner:** | | |
| **Description:** | Polyethylene Foam Liner | |
| **Tare Weight:** | 0.68 Grams | |
| **Thickness:** | 0.057” | |
| **Diameter:** | 1.372” | |

| PLASTIC BOTTLE | | DRAWING |
|---|---|---|
| **Manufacturer: Berry Plastics: Anaheim, CA (Dwg. #: D08-046)** | |  |
| **Description:** | 2.5 Liter Plastic Bottle (45mm Opening) | |
| **Quantity:** | 6 | |
| **Material/Pigment:** | High Density Polyethylene / Natural | |
| **Method of Manufacture:** | Blow Molded | |
| **Tare Weight:** | 207 Grams | |
| **Capacity:** | | |
| • **Rated** | 2.5 Liter | |
| • **Overflow** | 2,470.0 Grams (83.4 Oz) | |
| **Overall Dimensions:** | | |
| • **Height** | 11.637” ± 0.080” | |
| • **Width** | 5.302” ± 0.080” | |
| • **Depth** | 5.302” ± 0.080” | |
| **Thread Dimensions:** | | |
| • **T** | 1.772” ± .010” | |
| • **E** | 1.644” ± 0.010” | |
| • **Pitch** | 1.540” | |
| **Wall Thickness:** | | |
| • **Minimum** | 0.037” | |
| **Markings (QC Audit):** | SPI “2” HDPE Recycling Symbol 2<br>DODD T16 9/13 M4609 A100113<br>11:43/7000 | |

| PLASTIC BOTTLE | | DRAWING |
|---|---|---|
| **Manufacturer: Berry Plastics: Anaheim. CA** | |  |
| **Description:** | 2.5 Liter Plastic Bottle (38mm Opening) | |
| **Quantity:** | 6 | |
| **Material/Pigment:** | High Density Polyethylene / Natural | |
| **Method of Manufacture:** | Blow Molded | |
| **Tare Weight:** | 209 Grams | |
| **Capacity:** | | |
| • **Rated** | 2.5 Liter | |
| • **Overflow** | 2,435.0 Grams (82.3 Oz) | |
| **Overall Dimensions:** | | |
| • **Height** | 11.637” ± 0.080” | |
| • **Width** | 5.03” ± 0.080” | |
| • **Depth** | 5.03” ± 0.080” | |
| **Thread Dimensions:** | | |
| • **T** | 1.461” ± 0.015” | |
| • **E** | 1.352” ± 0.015” | |
| • **Pitch** | 0.1640” | |
| **Wall Thickness:** | | |
| • **Minimum** | 0.040” | |
| **Markings (QC Audit):** | 9/13 HDPE | |

| SHIPPER | | |
|---|---|---|
| **Manufacturer: International Paper: Ontario, CA** | | |
| **Description:** | Regular Slotted Container | |
| **Material/Flute (Inner to Outer):** | Double Wall Mottled White Corrugated Fiberboard; B/C-Flute | |
| **Basis Weight (Outer to Inner) Lbs./MSF:** | | |
| • **Specification** | 42/26/35/26/42 | |
| • **Measured** | 42.4/26.4/32.7/28.4/43.2 | |
| **Combined Wt. of Facings:** | 118.3 | |
| **Tare Weight:** | 636 Grams | |
| **DIMENSIONS** | | |
| | **Specification Dimensions (Inside)** | **Measured Dimensions (Outside)** |
| • **Length** | 13.75” | 14-1/4” |
| • **Width** | 9” | 9-5/8” |
| • **Height** | 11.875” | 13-1/8” |
| **Board Caliper (Nominal):** | 0.259” | |
| **Manufacturer’s Joint:** | Inside Glued, 1-1/4” Lap | |
| **Markings (QC Audit):** | (u n) 4G/Y29.1/S/13 USA/+CC6166<br>DOT-SP 14656 ART APPROVAL DATE: 5-22-12 13.75 X 9 X 11.875 ID 731195 4655 | |
| **BOX CERTIFICATE** | | |
| **(A) Corrugated Manufacturer:** | INTERNATIONAL PAPER |  |
| **(B) Structure:** | Double Wall | |
| **(C) Bursting Test** | 275 Lbs. Per Sq Inch | |
| **(D) Min comb Wt Facings:** | 110 Lbs. Per M Sq Ft | |
| **(E) Size Limit:** | 95” | |
| **(F) Gross Wt Lt:** | 100 Lbs. | |
| **(G) Location:** | ONTARIO | |

## SECTION III: TEST PROCEDURES AND RESULTS

## DROP TESTS — 45mm Taped Top & Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Methanol/Water Solution (0.958 SG) | • For packaging containing liquid, each packaging does not leak.<br>• There can be no damage to the outer packaging likely to adversely affect safety during transport. Inner receptacles, inner packagings or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner packaging.<br>• Any discharge from a closure is slight and ceases immediately after impact with no further leakage.<br>• No rupture is permitted in packagings for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging. (§178.603) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | -18°C (0°F) Freezer #201 | |
| **CONTENTS TEMP.:** | -18.3ºC (-1.0ºF) | |
| **DROP HEIGHT:** | 1.9 Meters (75")<br>(Refer to Section IV) | |
| **TEST EQUIPMENT:** | L.A.B. Accu Drop 160 | |

### DROP ORIENTATIONS AND TEST RESULTS

| Sample #1: Flat on Bottom | Sample #2: Flat on Top | *Sample #3: Flat on Long Side |
|---|---|---|
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage or damage. | **PASS:** No leakage or damage. |
| ***Sample #4: Flat on Short Side** | ***Sample #5: Bottom Corner** | ****Sample #1: Top Corner** |
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage. Deformation to shipper on impact. | **PASS:** No leakage. Deformation to shipper on impact. |

** Flat on Bottom Drop sample was also used for the Top Corner drop.

## DROP TESTS — 45mmTaped Top & Hot Melt Glued Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Methanol/Water Solution (0.958 SG) | • For packaging containing liquid, each packaging does not leak.<br>• There can be no damage to the outer packaging likely to adversely affect safety during transport. Inner receptacles, inner packagings or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner packaging.<br>• Any discharge from a closure is slight and ceases immediately after impact with no further leakage.<br>• No rupture is permitted in packagings for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging.<br>(§178.603) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | -18°C (0°F) Freezer #201 | |
| **CONTENTS TEMP.:** | -18.3ºC (-1.0ºF) | |
| **DROP HEIGHT:** | 1.9 Meters (75”)<br>(Refer to Section IV) | |
| **TEST EQUIPMENT:** | L.A.B. Accu Drop 160 | |

### DROP ORIENTATIONS AND TEST RESULTS

| Sample #12: Flat on Bottom | Sample #13: Flat on Top | *Sample #14: Flat on Long Side |
|---|---|---|
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage or damage. | **PASS:** No leakage or damage. |
| ***Sample #15: Flat on Short Side** | ***Sample #16: Bottom Corner** | ****Sample #12: Top Corner** |
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage. Deformation to shipper on impact. | **PASS:** No leakage. Deformation to shipper on impact. |

** Flat on Bottom Drop sample was also used for the Top Corner drop.

## DROP TESTS — 38mm Taped Top & Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Methanol/Water Solution (0.958 SG) | • For packaging containing liquid, each packaging does not leak.<br>• There can be no damage to the outer packaging likely to adversely affect safety during transport. Inner receptacles, inner packagings or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner packaging.<br>• Any discharge from a closure is slight and ceases immediately after impact with no further leakage.<br>• No rupture is permitted in packagings for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging.<br>(§178.603) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | -18°C (0°F) Freezer #201 | |
| **CONTENTS TEMP.:** | -18.3ºC (-1.0ºF) | |
| **DROP HEIGHT:** | 1.9 Meters (75”)<br>(Refer to Section IV) | |
| **TEST EQUIPMENT:** | L.A.B. Accu Drop 160 | |

### DROP ORIENTATIONS AND TEST RESULTS

| Sample #23: Flat on Bottom | Sample #24: Flat on Top | *Sample #25: Flat on Long Side |
|---|---|---|
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage or damage. | **PASS:** No leakage or damage. |
| ***Sample #26: Flat on Short Side** | ***Sample #27: Bottom Corner** | **** Sample #23: Top Corner** |
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage. Deformation to shipper on impact. | **PASS:** No leakage. Deformation to shipper on impact. |

** Flat on Bottom Drop sample was also used for the Top Corner drop.

## DROP TESTS — 38mm Taped Top & Hot Melt Glued Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Methanol/Water Solution (0.958 SG) | • For packaging containing liquid, each packaging does not leak.<br>• There can be no damage to the outer packaging likely to adversely affect safety during transport. Inner receptacles, inner packagings or articles must remain completely within the outer packaging and there must be no leakage of the filling substance from the inner packaging.<br>• Any discharge from a closure is slight and ceases immediately after impact with no further leakage.<br>• No rupture is permitted in packagings for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging.<br>(§178.603) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | -18°C (0°F) Freezer #201 | |
| **CONTENTS TEMP.:** | -18.3ºC (-1.0ºF) | |
| **DROP HEIGHT:** | 1.9 Meters (75”)<br>(Refer to Section IV) | |
| **TEST EQUIPMENT:** | L.A.B. Accu Drop 160 | |

### DROP ORIENTATIONS AND TEST RESULTS

| Sample #34: Flat on Bottom | Sample #35: Flat on Top | *Sample #36: Flat on Long Side |
|---|---|---|
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage or damage. | **PASS:** No leakage or damage. |
| ***Sample #37: Flat on Short Side** | ***Sample #38: Bottom Corner** | ****Sample #34: Top Corner** |
|  |  |  |
| **PASS:** No leakage or damage. | **PASS:** No leakage. Deformation to shipper on impact. | **PASS:** No leakage. Deformation to shipper on impact. |

** Flat on Bottom Drop sample was also used for the Top Corner drop.

## STACKING & STACKING STABILITY TESTS — 45mm Taped Top & Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • There must be no leakage of the filling substance from the inner receptacle, or inner packaging.<br>• There can be no deterioration that could adversely affect transport safety or any distortion liable to reduce the package's strength, cause instability in stacks of packages, or cause damage to inner packagings that is likely to reduce safety in transport.<br>(§178.606) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TEST LOAD APPLIED:** | 725.7 Kg (1,600.0 Lbs)<br>(Refer to Section IV) | |
| **TEST DURATION:** | 24 Hours | |
| **TEST EQUIPMENT:** | L.A.B. Validator Plus Compression System | |

### STACKING TEST SET-UP & RESULTS

| Sample # | Maximum Deflection After 24 Hours | Results |
|---|---|---|
| **6** | 0.090" | **PASS** |
| **7** | 0.090" | **PASS** |
| **8** | 0.090" | **PASS** |

**Comments/Observations**

Following the stack test there was no leakage or damage likely to result in failure of the packaging.

### STACKING STABILITY TEST SET-UP & RESULTS

| Results | CRITERIA FOR PASSING THE TEST |
|---|---|
| **PASS** | • In guided load tests, stacking stability must be assessed after test completion.<br>• Two filled packagings of the same type must be placed on the test sample.<br>• The stacked packages must maintain their position for one hour.<br>(§178.606) |

For stack stability, TEN-E places the filled samples one on top of the other. The bottom sample is rotated to the top until all three samples have been subjected to stacking stability for one hour each.

## STACKING & STACKING STABILITY TESTS — 45mm Taped Top & Glued Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • There must be no leakage of the filling substance from the inner receptacle, or inner packaging.<br>• There can be no deterioration that could adversely affect transport safety or any distortion liable to reduce the package's strength, cause instability in stacks of packages, or cause damage to inner packagings that is likely to reduce safety in transport.<br>(§178.606) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TEST LOAD APPLIED:** | 725.7 Kg (1,600.0 Lbs)<br>(Refer to Section IV) | |
| **TEST DURATION:** | 24 Hours | |
| **TEST EQUIPMENT:** | L.A.B. 5250 Compression System | |

### STACKING TEST SET-UP & RESULTS

| Sample # | Maximum Deflection After 24 Hours | Results |
|---|---|---|
| **17** | 0.074" | **PASS** |
| **18** | 0.074" | **PASS** |
| **19** | 0.074" | **PASS** |

**Comments/Observations**

Following the stack test there was no leakage or damage likely to result in failure of the packaging.

### STACKING STABILITY TEST SET-UP & RESULTS

| Results | CRITERIA FOR PASSING THE TEST |
|---|---|
| **PASS** | • In guided load tests, stacking stability must be assessed after test completion.<br>• Two filled packagings of the same type must be placed on the test sample.<br>• The stacked packages must maintain their position for one hour.<br>(§178.606) |

For stack stability, TEN-E places the filled samples one on top of the other. The bottom sample is rotated to the top until all three samples have been subjected to stacking stability for one hour each.

## STACKING & STACKING STABILITY TESTS — 38mm Taped Top & Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • There must be no leakage of the filling substance from the inner receptacle, or inner packaging.<br>• There can be no deterioration that could adversely affect transport safety or any distortion liable to reduce the package's strength, cause instability in stacks of packages, or cause damage to inner packagings that is likely to reduce safety in transport.<br>(§178.606) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TEST LOAD APPLIED:** | 725.7 Kg (1,600.0 Lbs)<br>(Refer to Section IV) | |
| **TEST DURATION:** | 24 Hours | |
| **TEST EQUIPMENT:** | L.A.B. Validator Plus Compression System | |

### STACKING TEST SET-UP & RESULTS


| Sample # | Maximum Deflection After 24 Hours | Results |
|---|---|---|
| **28** | 0.033" | **PASS** |
| **29** | 0.033" | **PASS** |
| **30** | 0.033" | **PASS** |

**Comments/Observations**

Following the stack test there was no leakage or damage likely to result in failure of the packaging.

### STACKING STABILITY TEST SET-UP & RESULTS

| Results | CRITERIA FOR PASSING THE TEST |
|---|---|
| **PASS** | • In guided load tests, stacking stability must be assessed after test completion.<br>• Two filled packagings of the same type must be placed on the test sample.<br>• The stacked packages must maintain their position for one hour.<br>(§178.606) |

For stack stability, TEN-E places the filled samples one on top of the other. The bottom sample is rotated to the top until all three samples have been subjected to stacking stability for one hour each.

## STACKING & STACKING STABILITY TESTS — 38mm Taped Top & Glued Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • There must be no leakage of the filling substance from the inner receptacle, or inner packaging.<br>• There can be no deterioration that could adversely affect transport safety or any distortion liable to reduce the package's strength, cause instability in stacks of packages, or cause damage to inner packagings that is likely to reduce safety in transport.<br>(§178.606) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TEST LOAD APPLIED:** | 725.7 Kg (1,600.0 Lbs)<br>(Refer to Section IV) | |
| **TEST DURATION:** | 24 Hours | |
| **TEST EQUIPMENT:** | L.A.B. 5250 Compression System | |

### STACKING TEST SET-UP & RESULTS

| Sample # | Maximum Deflection After 24 Hours | Results |
|---|---|---|
| **39** | 0.033" | **PASS** |
| **40** | 0.033" | **PASS** |
| **41** | 0.033" | **PASS** |

**Comments/Observations**

Following the stack test there was no leakage or damage likely to result in failure of the packaging.

### STACKING STABILITY TEST SET-UP & RESULTS

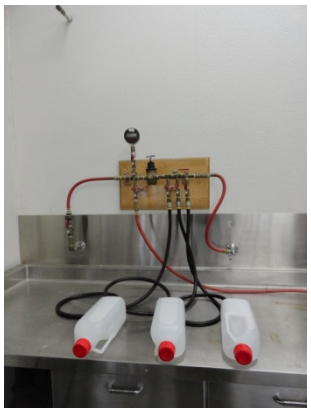
| Results | CRITERIA FOR PASSING THE TEST |
|---|---|
| **PASS** | • In guided load tests, stacking stability must be assessed after test completion.<br>• Two filled packagings of the same type must be placed on the test sample.<br>• The stacked packages must maintain their position for one hour.<br>(§178.606) |

For stack stability, TEN-E places the filled samples one on top of the other. The bottom sample is rotated to the top until all three samples have been subjected to stacking stability for one hour each.

| PRESSURE DIFFERENTIAL TEST | 45mm |
|---|---|

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Packaging for which retention of liquid is a basic function must be capable of withstanding the pressure requirements without leakage. (§173.27(c)) |
| **FILL CAPACITY:** | Maximum Capacity | |
| **CLOSURE APPLICATION:** | Refer to Section II | |
| **CONDITIONING:** | Ambient | |
| **TEST PRESSURE:** | 300 kPa | |
| **TEST DURATION:** | 30 Minutes | |
| **AREA OF PRESSURIZATION:** | Through the Bottom | |
| **TEST EQUIPMENT:** | Regulated Water Source<br>Digital Pressure Gauge | |

**HYDROSTATIC PRESSURE TEST SET-UP AND RESULTS**

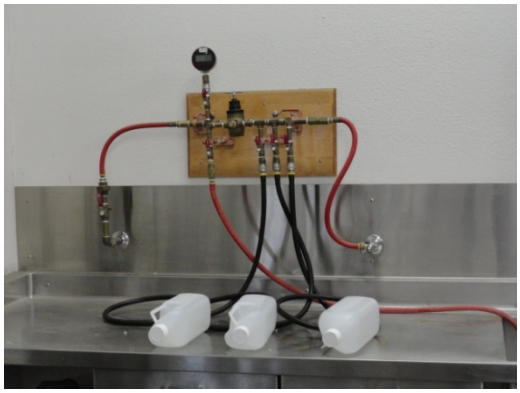


| Sample # | Results | Comments/Observations |
|---|---|---|
| 1 | PASS | All three samples maintained the 300 kPa test pressure for 30 minutes without leakage. |
| 2 | PASS | |
| 3 | PASS | |

| PRESSURE DIFFERENTIAL TEST | 38mm |
|---|---|

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Packaging for which retention of liquid is a basic function must be capable of withstanding the pressure requirements without leakage. (§173.27(c)) |
| **FILL CAPACITY:** | Maximum Capacity | |
| **CLOSURE APPLICATION:** | Refer to Section II | |
| **CONDITIONING:** | Ambient | |
| **TEST PRESSURE:** | 300 kPa | |
| **TEST DURATION:** | 30 Minutes | |
| **AREA OF PRESSURIZATION:** | Through the Bottom | |
| **TEST EQUIPMENT:** | Regulated Water Source<br>Digital Pressure Gauge | |

**HYDROSTATIC PRESSURE TEST SET-UP AND RESULTS**



| Sample # | Results | Comments/Observations |
|---|---|---|
| 1 | PASS | All three samples maintained the 300 kPa test pressure for 30 minutes without leakage. |
| 2 | PASS | |
| 3 | PASS | |

| VIBRATION TEST | 45mm Taped Top & Bottom |
|---|---|

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Immediately following the period of vibration, each package must be removed from the platform, turned on its side and observed for any evidence of leakage.<br>• A packaging passes the vibration test if there is no rupture or leakage from any of the packages.<br>• No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.<br>(§178.608) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TABLE DISPLACEMENT:** | 1” | |
| **TEST FREQUENCY:** | 3.8 Hz | |
| **TEST DURATION:** | 1 Hour | |
| **TEST EQUIPMENT:** | Vertical motion using L.A.B. Palletizer Vibration System | |

**VIBRATION TEST SET-UP AND RESULTS**

| Sample # | Results | Comments/Observations |
|---|---|---|
| **9** | **PASS** | No leakage or damage. |
| **10** | **PASS** | |
| **11** | **PASS** | |

| VIBRATION TEST | 45mm Taped Top & Glued Bottom |
|---|---|

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Immediately following the period of vibration, each package must be removed from the platform, turned on its side and observed for any evidence of leakage.<br>• A packaging passes the vibration test if there is no rupture or leakage from any of the packages.<br>• No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.<br>(§178.608) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TABLE DISPLACEMENT:** | 1” | |
| **TEST FREQUENCY:** | 3.8 Hz | |
| **TEST DURATION:** | 1 Hour | |
| **TEST EQUIPMENT:** | Vertical motion using L.A.B. Palletizer Vibration System | |

**VIBRATION TEST SET-UP AND RESULTS**

| Sample # | Results | Comments/Observations |
|---|---|---|
| **20** | **PASS** | No leakage or damage. |
| **21** | **PASS** | |
| **22** | **PASS** | |

## VIBRATION TEST — 38mm Taped Top & Bottom

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Immediately following the period of vibration, each package must be removed from the platform, turned on its side and observed for any evidence of leakage.<br>• A packaging passes the vibration test if there is no rupture or leakage from any of the packages.<br>• No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.<br>(§178.608) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TABLE DISPLACEMENT:** | 1” | |
| **TEST FREQUENCY:** | 3.8 Hz | |
| **TEST DURATION:** | 1 Hour | |
| **TEST EQUIPMENT:** | Vertical motion using L.A.B. Palletizer Vibration System | |

## VIBRATION TEST SET-UP AND RESULTS

| Sample # | Results | Comments/Observations |
|---|---|---|
| **31** | **PASS** | No leakage or damage. |
| **32** | **PASS** | |
| **33** | **PASS** | |

| VIBRATION TEST | 38mm Taped Top & Glued Bottom |
|---|---|

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **TEST CONTENTS:** | Water | • Immediately following the period of vibration, each package must be removed from the platform, turned on its side and observed for any evidence of leakage.<br>• A packaging passes the vibration test if there is no rupture or leakage from any of the packages.<br>• No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.<br>(§178.608) |
| **SAMPLE PREPARATION:** | Refer to Section II | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **TABLE DISPLACEMENT:** | 1” | |
| **TEST FREQUENCY:** | 3.8 Hz | |
| **TEST DURATION:** | 1 Hour | |
| **TEST EQUIPMENT:** | Vertical motion using L.A.B. Palletizer Vibration System | |

**VIBRATION TEST SET-UP AND RESULTS**

| Sample # | Results | Comments/Observations |
|---|---|---|
| **42** | **PASS** | No leakage or damage. |
| **43** | **PASS** | |
| **44** | **PASS** | |

## COBB WATER ABSORPTION TEST

| TEST INFORMATION | | TEST CRITERIA |
|---|---|---|
| **NUMBER OF SAMPLES:** | 5 | • An increase in mass greater than 155 g/m² over the 30 minute duration represents an unacceptable level of water resistance. (§178.516) |
| **SAMPLE SIZE:** | 5” x 5” (Minimum) | |
| **CONDITIONING:** | 73°F / 50% RH Quality Room #202 | |
| **WATER APPLIED:** | 100 mL / Sample | |
| **TEST DURATION:** | 30 Minutes / Sample | |
| **TEST EQUIPMENT:** | UWE Analytical Balance<br>Gurley Cobb Water Absorption Fixtures | |

| COBB WATER ABSORPTION TEST RESULTS | |
|---|---|
| **Sample #** | **Water Absorbed** |
| **1** | 135 g/m² |
| **2** | 141 g/m² |
| **3** | 145 g/m² |
| **4** | 135 g/m² |
| **5** | 126 g/m² |
| **AVERAGE:** | **136.4 g/m²** |
| **RESULT** | **PASS** |

## REGULATORY AND INDUSTRY STANDARD REFERENCES

### REGULATORY REFERENCES

| TEST | 49 CFR① | UN② | IMDG③ | ICAO④ | IATA⑤ |
|---|---|---|---|---|---|
| | October 2012 Edition | 17th Edition | 2012 Edition | 2013-2014 Edition | 54th Edition |
| **Drop:** | 178.603 | 6.1.5.3 | 6.1.5.3 | 6; 4.3 | 6.3.3 |
| **Stacking:** | 178.606 | 6.1.5.6 | 6.1.5.6 | 6; 4.6 | 6.3.6 |
| **Pressure:** | 173.27(c) | 4.1.1.4.1 | 4.1.1.4.1 | 4; 1.1.6 | 5.0.2.9 |
| **Vibration:** | 178.608 | --- | --- | 4; 1.1.1 | 5.0.2.7 |
| **Cobb:** | 178.516(b)(1) | 6.1.4.12.1 | 6.1.4.12.1 | 6; 3.1.11.1 | 6.2.12.2 |

① United States Department of Transportation Code of Federal Regulations (CFR) Title 49, Transportation, Parts 100-185
② The United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations (UN – Orange Book)
③ International Maritime Dangerous Goods Code (IMDG)
④ Technical Instructions for the Safe Transport of Dangerous Good by Air (ICAO)
⑤ International Air Transport Association (IATA) Dangerous Goods Regulations

### INDUSTRY STANDARD REFERENCES

| | | |
|---|---|---|
| **Drop:** | ASTM⑥ D5276: | Standard Test Method for Drop Test of Loaded Containers by Free Fall |
| | ISO⑦ 2248: | Packaging – Complete, Filled Transport Packages – Vertical Impact Test by Dropping |
| **Stacking:** | ASTM⑥ D4577: | Standard Test Method for Compression Resistance of a Container Under Constant Load |
| | ISO⑦ 2234: | Packaging – Complete, Filled Transport Packages – Stacking Test using Static Load |
| **Hydrostatic Pressure:** | ASTM⑥ D7660: | Standard Guide for Conducting Internal Pressure Tests on United Nations (UN) Packagings |
| **Vibration:** | ASTM⑥ D999: | Standard Test Method for Vibration Testing of Shipping Containers |
| | ISO⑦ 2247: | Packaging – Complete, Filled Transport Packages – Vibration Test at Fixed Low Frequency |
| **Cobb:** | ISO⑦ 535: | Paper and Board – Determination of Water Absorption – Cobb Method |

⑥ American Society for Testing and Materials (ASTM)
⑦ International Organization for Standardization (ISO)

### EQUIPMENT

All inspection, measuring and test equipment that can affect product quality is calibrated and adjusted at prescribed intervals, or prior to use, and is traceable to NIST, using ANSI Z540 as an overall guide for calibration certification.

## SECTION IV: MATHEMATICAL CALCULATIONS — 38mm

### INFORMATION USED FOR CALCULATIONS

| | | | |
|---|---|---|---|
| Overall Packaging Tare Weight (PTW): | 1,949.0 | Grams | |
| Overflow Capacity (OFC): | | | Methanol/Water SG |
| Methanol/Water | 2,332.7 | Grams | SG: 0.958 |
| Water | 2,435.0 | Grams | |
| Number of Inner Packagings (# IP): | 6 | | |
| Packing Group | II | | |
| Product Specific Gravity (PSG): | 1.900 | | |
| Packing Group Multiplication Factor (MF): | 1.00 | | |
| Overall Height of one Package (OH): | 13.13 | Inches | |
| Stack Test-# of Samples Tested Simultaneously: | 3 | | |

### 98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

| OFC | x | 98% | | | |
|---|---|---|---|---|---|
| 2,332.7 | x | 98% = | 2,286.1 | Grams | Methanol/Water |
| 2,435.0 | x | 98% = | 2,386.3 | Grams | Water |

### PACKAGE TEST WEIGHTS

Overall Pkg Tare Weight (PTW) + (98% Overflow Capacity (OFC) x # of Inner Pkg (# IP)

| PTW | + | (98% OFC | x | # IP) | |
|---|---|---|---|---|---|
| 1,949 | + | 2,286.1 | x | 6 | Methanol/Water |
| 1,949 | + | 2,386.3 | x | 6 | Water |

| | | | | |
|---|---|---|---|---|
| Methanol/Water: | 15.6 | Kg | 34.3 | Lbs. |
| Water: | 16.2 | Kg | 35.7 | Lbs. |

### AUTHORIZED PACKAGE GROSS MASS CALCULATION (APGM)

Overall Pkg Tare Weight (PTW) + (Product SG (PSG) x 98% Overflow (OFC) x # of Inner Pkg (# IP))

| PTW | + | (PSG | x | 98% OFC | x | # IP) |
|---|---|---|---|---|---|---|
| 1,949 | + | 1.9 | x | 2,386 | x | 6 |

| | | | |
|---|---|---|---|
| 29.1 | Kg | 64.1 | Lbs. |

## DROP HEIGHT

**Calculation For Product Specific Gravities Exceeding 1.2**
**Product Specific Gravity (PSG) x Packing Group Multiplication Factor (MF)**

Packing Group: II

| PSG | x | MF | | Required Drop Height | Actual Drop Height |
|---|---|---|---|---|---|
| 1.9 | x | 1.00 | | | |
| | | 1.90 | Meter | 74.8 Inches | 75 Inches |

## STACKING TEST MINIMUM LOAD CALCULATIONS

### Number of Packages in a 3m High Stack (118 / Overall Pkg Height (OH) -1)

**118 / Overall Height of one Pkg (OH) - 1**

| (118 | / | OH) | -1 | = | # 3m HS |
|---|---|---|---|---|---|
| 118 | / | 13.13 | -1 | = | 8.0 |

### Stacking Test Load Calculation (Individual Package)

**Authorized Pkg Gross Mass (APGM) x # of Pkg in a 3m High Stack (# 3m HS)**

| APGM | x | # 3m HS |
|---|---|---|
| 29.1 | x | 8.0 |

232.8 Kg 513.2 Lbs.

### Stacking Test Load Calculation

**Samples x Authorized Pkg Gross Mass (APGM) x # of Pkg in a 3m High Stack (# 3m HS)**

| Samples | x | (APGM | x | # 3m HS) |
|---|---|---|---|---|
| 3 | x | 29.1 | x | 8.0 |

698.4 Kg 1,539.7 Lbs.

## SECTION IV: MATHEMATICAL CALCULATIONS — 45mm

### INFORMATION USED FOR CALCULATIONS

| | | | |
|---|---|---|---|
| Overall Packaging Tare Weight (PTW): | 1,954.0 | Grams | |
| Overflow Capacity (OFC): | | | Methanol/Water SG |
| Methanol/Water | 2,366.2 | Grams | SG: 0.958 |
| Water | 2,470.0 | Grams | |
| Number of Inner Packagings (# IP): | 6 | | |
| Packing Group | II | | |
| Product Specific Gravity (PSG): | 1.900 | | |
| Packing Group Multiplication Factor (MF): | 1.00 | | |
| Overall Height of one Package (OH): | 13.13 | Inches | |
| Stack Test-# of Samples Tested Simultaneously: | 3 | | |

### 98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

| OFC | x | 98% | | | |
|---|---|---|---|---|---|
| 2,366.2 | x | 98% = | 2,318.9 | Grams | Methanol/Water |
| 2,470.0 | x | 98% = | 2,420.6 | Grams | Water |

### PACKAGE TEST WEIGHTS

Overall Pkg Tare Weight (PTW) + (98% Overflow Capacity (OFC) x # of Inner Pkg (# IP)

| PTW | + | (98% OFC | x | # IP) | |
|---|---|---|---|---|---|
| 1,954 | + | 2,318.9 | x | 6 | Methanol/Water |
| 1,954 | + | 2,420.6 | x | 6 | Water |

| | | | | |
|---|---|---|---|---|
| Methanol/Water: | 15.8 | Kg | 34.8 | Lbs. |
| Water: | 16.4 | Kg | 36.1 | Lbs. |

### AUTHORIZED PACKAGE GROSS MASS CALCULATION (APGM)

Overall Pkg Tare Weight (PTW) + (Product SG (PSG) x 98% Overflow (OFC) x # of Inner Pkg (# IP))

| PTW | + | (PSG | x | 98% OFC | x | # IP) |
|---|---|---|---|---|---|---|
| 1,954 | + | 1.9 | x | 2,421 | x | 6 |

| | | | | |
|---|---|---|---|---|
| | 29.5 | Kg | 65.0 | Lbs. |

## DROP HEIGHT

**Calculation For Product Specific Gravities Exceeding 1.2**
**Product Specific Gravity (PSG) x Packing Group Multiplication Factor (MF)**

| PSG | | MF | | | Packing Group: | II |
|---|---|---|---|---|---|---|
| 1.9 | x | 1.00 | | Required Drop Height | | Actual Drop Height |
| | | 1.90 | Meter | 74.8 | Inches | 75 Inches |

## STACKING TEST MINIMUM LOAD CALCULATIONS

### Number of Packages in a 3m High Stack (118 / Overall Pkg Height (OH) -1)

**118 / Overall Height of one Pkg (OH) - 1**

| (118 | / | OH) | -1 | = | # 3m HS |
|---|---|---|---|---|---|
| 118 | / | 13.13 | -1 | = | 8.0 |

### Stacking Test Load Calculation (Individual Package)

**Authorized Pkg Gross Mass (APGM) x # of Pkg in a 3m High Stack (# 3m HS)**

| APGM | x | # 3m HS |
|---|---|---|
| 29.5 | x | 8.0 |

236.0 Kg 520.3 Lbs.

### Stacking Test Load Calculation

**Samples x Authorized Pkg Gross Mass (APGM) x # of Pkg in a 3m High Stack (# 3m HS)**

| Samples | x | (APGM | x | # 3m HS) |
|---|---|---|---|---|
| 3 | x | 29.5 | x | 8.0 |

708.0 Kg 1,560.9 Lbs.

## APPENDIX A: MANUFACTURER'S CLOSURE INSTRUCTIONS

| PurePak Technology Corporation | PACKAGING ASSEMBLY INSTRUCTIONS<br>2.5 Liter 1/carton, 4/carton and 6/carton |
|---|---|

***Package: 2.5 Liter Issue Date: August 12, 2011 Revision: B UN Cert #+CC6166***
***With 38-439 or 45 mm neck finish***

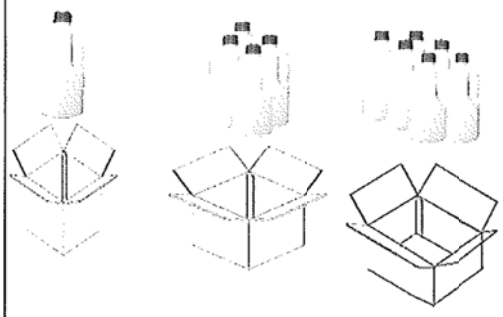
| NO. / CASE | LIST OF COMPONENTS | Reference | SPEC / PART # |
|---|---|---|---|
| (1) or (4) or (6) | Berry 38-439 A Stock Acid Closures with Foam Liner OR | Figures Below | 20038485 |
| (1) or (4) or (6) | Menshen Tamper Evident 45mm Closure DIN45E with PTFE Liner | | 21451022 |
| (1) or (4) or (6) | 2.5 Liter Bottle with 38-439 Neck Finish | | 815029 |
| (1) or (4) or (6) | 2.5 Liter Bottle with 45 mm Neck Finish | | 815073 |
| (1) | 275# Doublewall, B/C flute, RSC Carton | Figures Below | 731195 |
| (1) Roll | 2" Clear Pressure Sensitive Tape (Scotch 3M Packaging Tape) | Figures Below | |
| Adhesive | H.B. Fuller Hot Melt Adhesive PHC-9200 | Figures Below | |

| PACKAGING CONFIGURATIONS: | Case Sealing Method |
|---|---|
| Configuration : One, Four or Six 2.5L Bottles/reshipper carton | Top: 2" Clear Pressure Sensitive Tape |
| | Bottom: Glued |
| Configuration: One, Four or Six 2.5L Bottles/reshipper carton | Top: 2" Clear Pressure Sensitive Tape |
| | Bottom: 2" Clear Pressure Sensitive Tape |

ASSEMBLY INSTRUCTIONS:
Note: Refer to component list above. Examine all parts for defects. Once you have determined that this packaging is free from defects then follow these instructions for package assembly.

1. Apply 38-439 threaded closure to bottle with an application torque of 35 to 50 in-lbs using an appropriate closing tool.
2. Apply 45 mm threaded closure to bottle with an application torque of 23-28 in-lbs. using an appropriate closing tool.
3. For preassembled carton, place (1,4 or 6) bottles in carton with the bottle closures facing upward.
4. Tape the top flaps closed with 2" clear pressure sensitive tape. Center the tape over the middle seam formed by the flaps being folded together. The length of the tape should be such that there is a 2" extension on each end.
5. For flat carton, fold in two opposite bottom flaps of carton. Then fold in remaining two adjacent bottom flaps making sure that the exposed flaps display the Box Maker's Certificate or the Guarantee Stamp.
6. Tape the bottom flaps closed with 2" clear pressure sensitive tape. Center the tape over the middle seam formed by the flaps being folded together. The length of the tape should be such that there is a 2" extension on each end.
7. Then place (1,4 or 6) bottles in the carton with the bottle closures facing upward.
8. Tape the top flaps closed with 2" clear pressure sensitive tape. Center the tape over the middle seam formed by the flaps being folded together. The length of the tape should be such that there is a 2" extension on each end.
9. Apply product labels and DOT hazard warning labels as required by customer work order instructions. Do not cover up any UN markings or DOT Hazard labels with tape.

Figure A Figure B Figure C



**4G/5.3/S/** USA/+CC6166** — **Figure A UN Marking**

**4G/19.3/S/** USA/+CC6166** — **Figure B UN Marking**

**4G/29.1/S/** USA/+CC6166** — **Figure C UN Marking**

**** (Year of Manufacture)**