UNITED NATIONS / DOT PERFORMANCE CERTIFICATION

4G DESIGN QUALIFICATION

4 x 1 Gallon Round Plastic Bottle with Two Case Sealing Mechanisms:
#1) Taped Top Flaps and Taped Bottom Flaps
#2) Taped Top Flaps and Glued Bottom Flaps

TEST REPORT #: 13-7119

(un) 4G / Y23.5 / S / **
USA / +CC7715

**Insert the year packaging is manufactured

TESTING PERFORMED FOR:

PUREPAK TECHNOLOGY CORPORATION
324 South Bracken Lane Suite 3
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

July 16, 2013

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4 x 1 Gallon Round Plastic Bottle – Case Sealing Mechanism Variables		
Option #	**Top Flaps**	**Bottom Flaps**
1	2" 3M Scotch Brand Tape	2" 3M Scotch Brand Tape
2	2" 3M Scotch Brand Tape	Hot Melt Adhesive

SECTION I: CERTIFICATION

Design Qualification of the PurePak Technology Corporation 4 x 1 Gallon Round 150 Gram Plastic Bottle with Two Case Sealing Mechanisms: #1) Taped Top and Taped Bottom Flaps & #2) Taped Top and Glued Bottom Flaps

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	178.603	1.4 m	Methanol/Water	July 15, 2013	PASS
Stacking (#1)	178.606	181.4 Kg – 24 Hours	Empty	July 16, 2013	PASS
Stacking (#2)	178.606	544.3 Kg – 24 Hours	Water	July 16, 2013	PASS
Pressure	173.27	95 kPa - 30 Minutes	Water	July 16, 2013	PASS
Vibration	178.608	4.0 Hz – 1 Hour	Water	July 15, 2013	PASS
Cobb	178.516	30 Minutes	---	July 12, 2013	PASS

TEST REPORT NUMBER:	13-7119
UN MARKING: (CFR 49 – 178.503)	(un) 4G / Y23.5 / S / ** USA / +CC7715
PACKAGING IDENTIFICATION CODE:	4G - Fiberboard Box (178.516)
PERFORMANCE STANDARD:	Y (Packaging meets Packing Group II and III tests)
AUTHORIZED GROSS MASS:	23.5 Kg (51.8 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:	+CC7715
PERIODIC RETEST DATE:	July 16, 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:

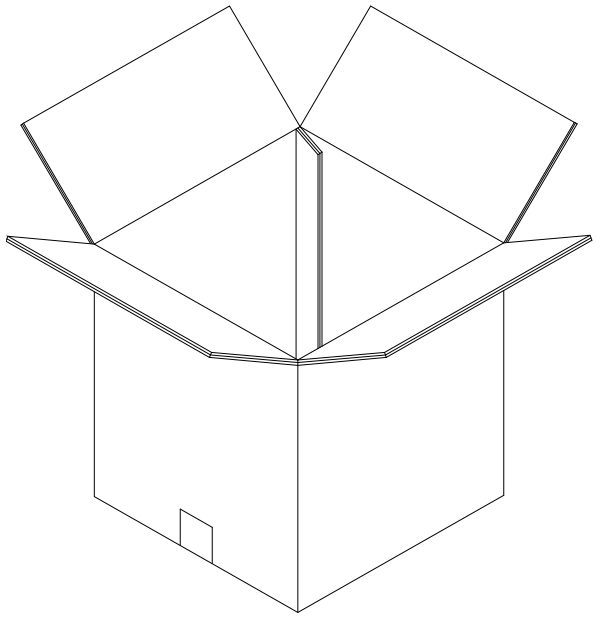
PurePak Technology Corporation
324 South Bracken Lane Suite 3
Chandler, AZ 85244

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

SECTIONS II & V: PACKAGING DESCRIPTIONS / COMPONENT DRAWINGS

4 x 1 Gallon Round Plastic Bottle Packaging with Two Case Sealing Mechanisms: #1) Taped Top Flaps and Bottom Flaps

ASSEMBLY DRAWING

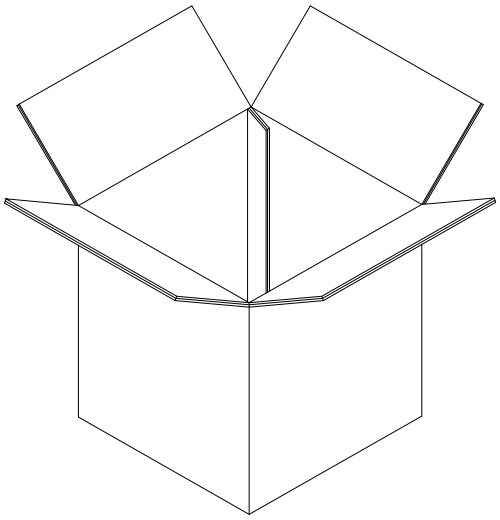


TEST LEVELS

Certification Type:	Design Qualification	
Packaging Code Designation:	4G	
Packing Group:	II	
Specific Gravity:	1.4	
Internal Pressure:	95 kPa	
TEST SAMPLE PREPARATION (Refer to Section IV)		
Overall Packaging Tare Weight:	1,504.0 Grams	
Fill Capacity (98% Maximum Capacity):		
Methanol/Water	3,778.8 Grams	
Water	3,944.5 Grams	
Package Test Weight:		
Methanol/Water	16.6 Kg	36.5 Lbs
Water	17.2 Kg	37.9 Lbs
Authorized Package Gross Mass:	23.5 Kg	51.8 Lbs
CLOSING METHODS – INNER PACKAGING		
Application Torque: 50 In-Lbs		
Equipment: Kaps All Electronic Torque Tester		
CLOSING METHODS – SHIPPER		
Top Flaps:		
Manufacturer:	3M: St. Paul, MN	
Type:	3M Scotch Brand Pressure Sensitive Tape / Supplied by PurePak	
Width:	48 mm (2")	
Overlap:	2" Minimum	
Tape Pattern:	Center Seam	
Inner Flaps:	Meet	
Outer Flaps:	Meet	
Bottom Flaps:		
Manufacturer:	3M: St. Paul, MN	
Type:	3M Scotch Brand Pressure Sensitive Tape / Supplied by PurePak	
Width:	48 mm (2")	
Overlap:	2" Minimum	
Tape Pattern:	Center Seam	
Inner Flaps:	Meet	
Outer Flaps:	Meet	
Refer to Appendix A for Manufacturer's Closure Instructions		

4 x 1 Gallon Round Plastic Bottle Packaging with Two Case Sealing Mechanisms: #2) Taped Top Flaps and Glued Bottom Flaps

ASSEMBLY DRAWING



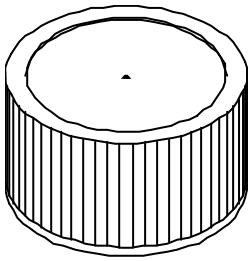
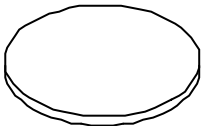
TEST LEVELS

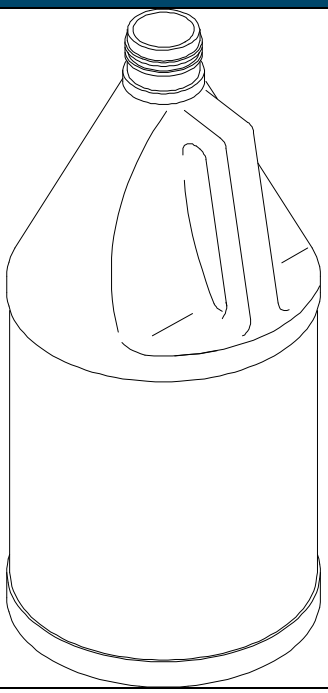
Certification Type:	Design Qualification	
Packaging Code Designation:	4G	
Packing Group:	II	
Specific Gravity:	1.4	
Internal Pressure:	95 kPa	
TEST SAMPLE PREPARATION (Refer to Section IV)		
Overall Packaging Tare Weight:	1,492.0 Grams	
Fill Capacity (98% Maximum Capacity):		
Methanol/Water	3,778.8 Grams	
Water	3,944.5 Grams	
Package Test Weight:		
Methanol/Water	16.6 Kg	36.5 Lbs
Water	17.2 Kg	37.9 Lbs
Authorized Package Gross Mass:	23.5 Kg	51.8 Lbs
CLOSING METHODS – INNER PACKAGING		
Application Torque: 50 In-Lbs		
Equipment: Kaps All Electronic Torque Tester		
CLOSING METHODS – SHIPPER		
Top Flaps:		
Manufacturer:	3M: St. Paul, MN	
Type:	3M Scotch Brand Pressure Sensitive Tape / Supplied by PurePak	
Width:	48 mm (2")	
Overlap:	2" Minimum	
Tape Pattern:	Center Seam	
Inner Flaps:	Meet	
Outer Flaps:	Meet	
Bottom Flaps:		
Type:	Hot Melt Adhesive: Prepared by PurePak Technology Corporation	
Inner Flaps:	Meet	
Outer Flaps:	Meet	
Refer to Appendix A for Manufacturer's Closure Instructions		

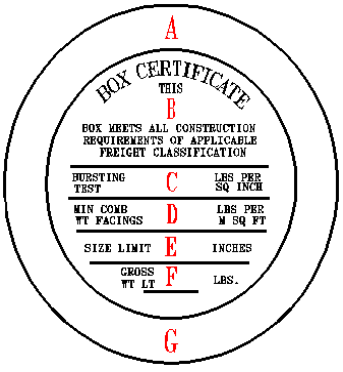
For Packagings with an Established Gross Mass:

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: Rexam Plastic Packaging: Evansville, IN (Dwg. #: QIM-317-4937)		 
Description:	38mm Threaded Closure	
Quantity:	4	
Material:	Polypropylene	
Tare Weight:	10.40 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):	1	
Liner:		
Description:	Polyethylene Foam Liner	
Tare Weight:	0.63 Grams	
Thickness:	0.049”	
Diameter:	1.388”	

	PLASTIC BOTTLE	DRAWING
Manufacturer: Berry Plastic Corporation: Evansville, IN (Product: B38RD1HA)		
Description:	1 Gallon Round Plastic Bottle	
Quantity:	4	
Material/Pigment:	High Density Polyethylene / Natural	
Method of Manufacture:	Blow Molded	
Tare Weight:	150 Grams	
Capacity:		
• **Rated**	1 Gallon	
• **Overflow**	4.025.0 Grams (1.0 Gallons)	
Overall Dimensions:		
• **Height**	12.350” ± 0.090”	
• **Diameter**	6.072” ± 0.080”	
Thread Dimensions:		
• **T**	1.461” ± 0.015”	
• **E**	1.367” ± 0.015”	
Wall Thickness:		
• **Minimum**	0.022”	
Markings (QC Audit):	SPI “2” HDPE Recycling Symbol K.S. 80859 19 07 K	

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**	42/26/26/26/42	
Tare Weight:	844 Grams	
DIMENSIONS		
	Specification Dimensions (Inside)	**Measured Dimensions (Outside)**
• **Length**	12.3125”	12-7/8”
• **Width**	12.3125”	12-3/4”
• **Height**	12.625”	13-7/8”
Board Caliper (Nominal):	0.258”	
Manufacturer’s Joint:	Inside Glued, 1-3/8” Lap	
Markings (QC Audit):	(u n) 4G/Y23.3/S/13 USA/+BV1468 PART No. 830600 ARTWORK DATE 3-15-12 12 5/16X12 5/16X12 5/8 I.D. CleanRoom is a registered tradedmark of KMG Chemicals, Inc.	
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:	85”	
(F) Gross Wt Lt:	100 Lbs.	
(G) Location:	ONTARIO, CA	

SECTION III: TEST PROCEDURES AND RESULTS

DROP TESTS — Taped Top and Bottom Flaps

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Methanol/Water Solution (0.958 SG)	• For packaging containing liquid, each packaging does not leak. • 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. • Any discharge from a closure is slight and ceases immediately after impact with no further leakage. • 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.:	-18.7°C (-1.66°F)	
DROP HEIGHT:	1.4 Meters (56") (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 — Taped Top and Glued Bottom Flaps

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Methanol/Water Solution (0.958 SG)	• For packaging containing liquid, each packaging does not leak. • 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. • Any discharge from a closure is slight and ceases immediately after impact with no further leakage. • 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.:	-18.7°C (-1.66°F)	
DROP HEIGHT:	1.4 Meters (56”) (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.

STACKING TEST	Taped Top Flaps & Taped Bottom Flaps

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Empty	• There must be no leakage of the filling substance from the inner receptacle, or inner packaging. • 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. (§178.606)
SAMPLE PREPARATION:	Refer to Section II	
CONDITIONING:	73°F / 50% RH Quality Room #202	
TEST LOAD APPLIED:	181.4 Kg (400.0 Lbs) (Refer to Section IV)	
TEST DURATION:	24 Hours	
TEST EQUIPMENT:	Dead Load Weights	

STACKING TEST SET-UP & RESULTS

Sample #	Maximum Deflection After 24 Hours	Results
6	0"	**PASS**
7	0"	**PASS**
8	0"	**PASS**

Comments/Observations

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

Stacking Stability: Not conducted; required only for guided load tests.

STACKING & STACKING STABILITY TESTS — Taped Top Flaps & Glued Bottom Flaps

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Water	• There must be no leakage of the filling substance from the inner receptacle, or inner packaging. • 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. (§178.606)
SAMPLE PREPARATION:	Refer to Section II	
CONDITIONING:	73°F / 50% RH Quality Room #202	
TEST LOAD APPLIED:	544.3 Kg (1,200.0 Lbs) (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	0.132"	**PASS**
18	0.132"	**PASS**
19	0.132"	**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. • Two filled packagings of the same type must be placed on the test sample. • The stacked packages must maintain their position for one hour. (§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

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:	95 kPa	
TEST DURATION:	30 Minutes	
AREA OF PRESSURIZATION:	Through the Bottom	
TEST EQUIPMENT:	Regulated Water Source Digital Pressure Gauge	

HYDROSTATIC PRESSURE TEST SET-UP AND RESULTS

Sample #	Results	Comments/Observations
1	PASS	All three samples maintained the 95 kPa test pressure for 30 minutes without leakage.
2	PASS	
3	PASS	

VIBRATION TEST	Taped Top Flaps & Taped Bottom Flaps

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. • A packaging passes the vibration test if there is no rupture or leakage from any of the packages. • No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength. (§178.608)
SAMPLE PREPARATION:	Refer to Section II	
CONDITIONING:	73°F / 50% RH Quality Room #202	
TABLE DISPLACEMENT:	1”	
TEST FREQUENCY:	4.0 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	Taped Top Flaps & Glued Bottom Flaps

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. • A packaging passes the vibration test if there is no rupture or leakage from any of the packages. • No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength. (§178.608)
SAMPLE PREPARATION:	Refer to Section II	
CONDITIONING:	73°F / 50% RH Quality Room #202	
TABLE DISPLACEMENT:	1”	
TEST FREQUENCY:	4.0 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**	

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 Gurley Cobb Water Absorption Fixtures	

COBB WATER ABSORPTION TEST RESULTS	
Sample #	**Water Absorbed**
1	150 g/m²
2	145 g/m²
3	136 g/m²
4	150 g/m²
5	148 g/m²
AVERAGE:	**145.8 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 — Taped Top Flaps & Taped Bottom Flaps

INFORMATION USED FOR CALCULATIONS

Overall Packaging Tare Weight (PTW):	1,492.0	Grams	
Overflow Capacity (OFC):			Methanol/Water SG
Methanol/Water	3,855.9	Grams	SG: 0.958
Water	4,025.0	Grams	
Number of Inner Packagings (# IP):	4		
Packing Group	II		
Product Specific Gravity (PSG):	1.400		
Packing Group Multiplication Factor (MF):	1.00		
Overall Height of one Package (OH):	13.88	Inches	
Stack Test-# of Samples Tested Simultaneously:	3		

98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

OFC	x	98%			
3,855.9	x	98%	=	3,778.8 Grams	Methanol/Water
4,025.0	x	98%	=	3,944.5 Grams	Water

PACKAGE TEST WEIGHTS

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

PTW	+	(98% OFC	x	# IP)	
1,492	+	3,778.8	x	4	Methanol/Water
1,492	+	3,944.5	x	4	Water

Methanol/Water:	16.6	Kg	36.5	Lbs.
Water:	17.2	Kg	37.9	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)
1,492	+	1.4	x	3,945	x	4

	23.5	Kg	51.8	Lbs.

DROP HEIGHT

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

PSG	x	MF		Packing Group:	II
1.4	x	1.00		Required Drop Height	Actual Drop Height
		1.40	Meter	55.1 Inches	56 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	/	13.88	-1	=	7.6

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
23.5	x	7.6

178.6 Kg 393.7 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	23.5	x	7.6

535.8 Kg 1,181.2 Lbs.

SECTION IV: MATHEMATICAL CALCULATIONS — Taped Top Flaps & Glued Bottom Flaps

INFORMATION USED FOR CALCULATIONS

Overall Packaging Tare Weight (PTW):	1,504.0	Grams	
Overflow Capacity (OFC):			Methanol/Water SG
Methanol/Water	3,855.9	Grams	SG: 0.958
Water	4,025.0	Grams	
Number of Inner Packagings (# IP):	4		
Packing Group	II		
Product Specific Gravity (PSG):	1.400		
Packing Group Multiplication Factor (MF):	1.00		
Overall Height of one Package (OH):	13.88	Inches	
Stack Test-# of Samples Tested Simultaneously:	3		

98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

OFC	x	98%			
3,855.9	x	98%	=	3,778.8 Grams	Methanol/Water
4,025.0	x	98%	=	3,944.5 Grams	Water

PACKAGE TEST WEIGHTS

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

PTW	+	(98% OFC	x	# IP)	
1,504	+	3,778.8	x	4	Methanol/Water
1,504	+	3,944.5	x	4	Water

Methanol/Water:	16.6	Kg	36.5	Lbs.
Water:	17.2	Kg	37.9	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)
1,504	+	1.4	x	3,945	x	4

23.5	Kg	51.8	Lbs.

DROP HEIGHT

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

PSG	x	MF		Packing Group:	II
1.4	x	1.00		Required Drop Height	Actual Drop Height
		1.40	Meter	55.1 Inches	56 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	/	13.88	-1	=	7.6

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
23.5	x	7.6

178.6 Kg 393.7 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	23.5	x	7.6

535.8 Kg 1,181.2 Lbs.

APPENDIX A: MANUFACTURER'S CLOSURE INSTRUCTIONS

PurePak Technology Corporation	PACKAGING ASSEMBLY INSTRUCTIONS One Gallon 150 gram bottle
	Page 1 of 1

Package: One Gallon 150 gram bottle Issue Date: July 16, 2013 Revision: C UN Cert # +CC7715

4 x 150 gram Plastic Bottle Packaging

NO. / CASE	LIST OF COMPONENTS	CONFIGURATION	SPEC / PART #
4	Rexam 38-439 A Stock Acid Closures with Foam Liner	A & B	20038485
4	150 gram Bottles with 38-439 neck and finish	A & B	812144
(1)	Regular Slotted Corrugated Container, Pre-assembled	A & B	731197
(1) Roll	2" Clear Pressure Sensitive Tape (Scotch 3M Packaging Tape)	A & B	
Adhesive	H.B. Fuller Hot Melt Adhesive PHC-9200	A	

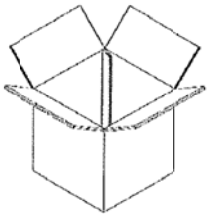
PACKAGING CONFIGURATIONS:	Case Sealing Method
Configuration A: 4 X 150 gram Bottles	Top: 2" Clear Pressure Sensitive Tape
	Bottom: Glued
Configuration B: 4 X 150 gram Bottles	Top: 2" Clear Pressure Sensitive Tape
	Bottom: 2" Clear Pressure Sensitive Tape

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 threaded closure to bottle with an application torque of 35 to 50 in/lbs using an appropriate closing tool.
2. For Configuration A, place four (4) bottles into a pre-assembled carton with the bottle closures facing upward.
3. Tape the tops closed with 2" 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.
4. For Configuration B, fold in two opposite bottoms flaps of carton. Then fold in the remaining two adjacent bottom flaps making sure that the exposed flaps display the Box Maker's Certificate or the Guarantee Stamp.
5. Tape the bottom flaps closed with 2" 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.
6. Then place four (4) bottles in the with the bottle closures facing upward.
7. 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.
8. Apply product labels and DOT hazard warning labels as required by work order instructions. Do not cover up any UN markings with labels or tape of any kind.

Configuration
A & B



4G/Y23.5/S/**
USA/+CC7715

** (Year of Manufacture)