

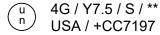
# UNITED NATIONS / DOT PERFORMANCE CERTIFICATION



### **4G PERIODIC RETEST**

6 x 500mL Round Plastic Bottle Packaging with Two Neck Finishes

**TEST REPORT #: 24-CA20128** 



\*\*Insert the last two digits of the year of manufacture

### **TESTING PERFORMED FOR:**

### PUREPAK TECHNOLOGY CCORPORATION

75 West Baseline Road Suite D44 Gilbert, AZ 85233

**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

August 6, 2024



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# **NOTES AND COMMENTS**

6 x 500mL Round Plastic Bottle Packaging (2) Closure Variables:

#1) 38-439 Closure

#2) 45mm Closure



### **SECTION I: CERTIFICATION**

# Periodic Retest of the PurePak Technology Corporation 6 x 500mL Round Plastic Bottle with Two Neck Finishes

**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	49 CFR REFERENCE	TEST LEVEL	TEST CONTENTS	TEST COMPLETED	TEST RESULTS
Drop	178.603	1.9 m	Methanol/Water Solution	August 5, 2024	PASS
Stacking	178.606	113.4 Kg – 24 Hours	Empty	August 5, 2024	PASS
Pressure	173.27	300 kPa - 30 Minutes	Water	August 6, 2024	PASS
Vibration	178.608	3.8 Hz – 1 Hour	Water	July 31, 2024	PASS
Cobb	178.516	30 Minutes		August 6, 2024	PASS
TEST REPOR	T NUMBERS:		<b>24-CA20128</b> , 16-CA2016	3	
UN MARKING: (CFR 49 – 178.503) u 4G / Y7.5 / S / ** USA / +CC7197					
PACKAGING IDENTIFICATION CODE:			4G - Fiberboard Box (178	3.516)	
PERFORMANCE STANDARD:		Y (Packaging meets Pack	king Group II and III	tests)	
AUTHORIZED GROSS MASS:		7.5 Kg (16.5 Lbs.)			
"S" DESIGNATION:			Denotes Inner Packaging	S	
YEAR OF MA	NUFACTURE:		**Insert the last two digits	of the year of man	ufacture
STATE AUTH	ORIZING THE M	ARK:	USA		
PACKAGING CERTIFICATION AGENCY:		(+CC) TEN-E Packaging (Ontario, CA CAA #20060			
THIRD PARTY PACKAGING IDENTIFICATION:		+CC7197			
PERIODIC RE	TEST DATE:		August 6, 2026		
SP NUMBER:			DOT-SP 14656		
ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY WARRANTY THAT THE PACKAGING					

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** 75 West Baseline Road Suite D44 Gilbert, AZ 85233 Matthew C. Anderson Project Manager TEN-E Packaging Services, Inc. 326 North Corona Avenue Ontario, CA 91764



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

6 x 500 mL Round Plastic B	ottle Packaging	With 38-439 Nec	k Finish	
ASSEMBLY DRAWING		TEST LEVE	LS	
	Certification Typ	e:	Periodic	Retest
	Packaging Code	e Designation:	4G	
	Packing Group:		II	
	Specific Gravity		1.9	
	Internal Pressur	e:	300 kPa	
	Т	EST SAMPLE PRE (Refer to Section		
	Overall Packagi	ng Tare Weight:	639.0 Gra	ams
	Fill Capacity (98	8% Maximum Capac	ity):	
	Methanol/Wa	ter Solution	587.1 Gr	
	Water		605.7 Gr	ams
	Package Test W			
	Methanol/Wa	ter Solution	4.1 Kg	9.0 Lbs.
	Water		4.2 Kg	9.2 Lbs.
		kage Gross Mass:	7.5 Kg	16.5 Lbs.
	CLOSIN	IG METHODS – INN	IER PACKA	GING
	Application Torc			
	Equipment:	Snap-On To	rque Wrencl	n
	CL	OSING METHODS	- SHIPPER	1
		Top Flaps	:	
	Manufacturer:	3M, St. Paul, MN		
	Type:	3M Part Number Sensitive Tape	MMM11599	4 Pressure
	Width:	48 mm (2")		
	Overlap:	2" Minimum		
	Tape Pattern:	Center Seam		
		Bottom Flag	os:	
	Manufacturer:	3M, St. Paul, MN		
	Type:	3M Part Number Sensitive Tape	MMM11599	4 Pressure
	Width:	48 mm (2")		
	Overlap:	2" Minimum		
	Tape Pattern:	Center Seam		



6 x 500 mL Round Plastic Bottle Packaging With 45mm Neck Finish				
ASSEMBLY DRAWING	TEST LEVELS			
	Certification Typ		Periodic	Retest
	Packaging Code		4G	
	Packing Group:		II	
	Specific Gravity:		1.9	
	Internal Pressur	e:	300 kPa	
	TI	EST SAMPLE PRE	PARATION	
		(Refer to Section	on IV)	
	Overall Packagii	ng Tare Weight:	633.0 Gra	ams
	Fill Capacity (98	3% Maximum Capac	ity):	
	Methanol/Wa	ter Solution	602.7 Gra	ams
	Water		625.3 Gr	ams
	Package Test W	/eight:		
	Methanol/Wa	ter Solution	4.2 Kg	9.2 Lbs.
	Water		4.3 Kg	9.4 Lbs.
	Authorized Pack	kage Gross Mass:	7.7 Kg	16.9 Lbs.
	CLOSIN	IG METHODS – INN	NER PACKA	GING
	Application Torq	ue: 25 In-Lbs.		
	Equipment:	Snap-On To	rque Wrencl	า
	CL	OSING METHODS	- SHIPPER	1
		Top Flaps		
	Manufacturer:	3M, St. Paul, MN		
	Type:	3M Part Number	MMM11599	4 Pressure
		Sensitive Tape		
	Width:	48 mm (2")		
	Overlap:	2" Minimum		
	Tape Pattern:	Center Seam		
		Bottom Flag		
	Manufacturer:	3M, St. Paul, MN		
	Type:	3M Part Number Sensitive Tape	MMM11599	4 Pressure
	Width:	48 mm (2")		
	Overlap:	2" Minimum		
	Tape Pattern:	Center Seam		

### 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**

CLC	DSURE (500093)	DRAWING
Manufacturer: Berry Plas		<u> </u>
Description:	38mm Threaded Closure	
Quantity:	6	
Material:	Polypropylene	
Tare Weight:	10.64 Grams	
Overall Dimensions:	Total Grains	Marian Ma
Height	1.024"	
Diameter	1.702"	
Thread:		
• Type	38mm	
Style	439	
Finish Dimensions:		
• T	1.483"	
• E	1.347"	
Markings (QC Audit):	3	
LINER:		
Description:	Polyethylene Foam Liner	
Tare Weight:	0.61 Grams	
Thickness:	0.056"	
Diameter:	1.397"	
PLASTIC	C BOTTLE (1046059)	
Manufacturer: PurePak To	echnology, Chandler, AZ	
Description:	500mL Plastic Bottle	
Quantity:	6	
Material:	High Density Polyethylene	
Method of Manufacture:	Blow Molded	The second second
Tare Weight:	52.0	
Capacity:		
Rated	500mL	
Overflow	618.0 Grams	
Overall Dimensions:	<u>'</u>	
Height	6.987"	
Diameter	3.060"	
Thread Dimensions:	1	
• T	1.459"	
• E	1.361"	
• Pitch	0.1640"	
Wall Thickness:	0.1040	
	0.027"	
• Minimum		
Markings (QC Audit):	2 10/14 SPI "2" HDPE Recycling Symbol	



CL	OSURE (500001)	DRAWING
Manufacturer: George ME	ENSHEN GmbH, Finnentrop, Germany	
Description:	45mm Threaded Closure	
Quantity:	6	
Material:	Polyethylene	
Tare Weight:	10.63 Grams	
Overall Dimensions:		
Height	1.245"	
• Diameter	1.992"	
Thread:		
Type	45mm	
Style	Buttress	
Finish Dimensions:		
• T	1.766"	
• E	1.682"	
Thread Pitch	4mm	
Markings (QC Audit):	None	
LINER:		
Description:	PTFE Liner	
Tare Weight:	0.91 Grams	
Thickness:	0.008"	
Diameter:	1.793"	
PLAST	IC BOTTLE (1046096)	
Manufacturer: PurePak T	echnology, Chandler, AZ	
Description:	500mL Plastic Bottle	10 mm
Quantity:	6	
Material:	High Density Polyethylene	
Method of Manufacture:	Blow Molded	
Tare Weight:	50.01 Grams	
Capacity:	·	
Rated	500mL	
Overflow	618.0 Grams	
Overall Dimensions:		
Height	6.988"	
Diameter	3.098"	
Thread Dimensions:		
• T	1.774"	
• E	1.651"	
• Pitch	0.1587"	
Wall Thickness:		
Minimum	0.025"	
Markings (QC Audit):	3/12	
markings (QC Addit).	SPI "2" HDPE Recycling Symbol	



SHIPPER (Project #: P369-14230-3 / Design #: 3690203809-3)						
Manufacturer: Packaging Co	Manufacturer: Packaging Corporation of America, Phoenix, AZ					
Description:	Regular Slotted Container					
Material/Flute (Outer to Inner):	Double Wall Natural Kraft Corrugated Fib	erboard; B/C-Flute				
Basis Weight (Outer to Inner) Lbs./MSF:						
Specification	35 / 23 / 35 / 23 / 35					
Tare Weight:	263.0 Grams					
	DIMENSIONS					
	Specification Dimensions (Inside)	Measured Dimensions (Outside)				
• Length	9-3/8"	10"				
• Width	6-5/16"	7"				
Height	7-1/8" 8-3/8"					
Board Caliper (Nominal):	0.249"					
Manufacturer's Joint:	Inside Glued, 1-3/8" Lap					
Markings (QC Audit):	### 4G/Y7.5/S/21 USA/+CC7197					
	DOT-SP 14656 ART WORK DATE 9 3/8 X 6 5/16 X 7 1/8					
	BOX CERTIFICATE					
(A) Corrugated Manufacturer:	PACKAGING CORPORATION OF AMERICA	A				
(B) Structure:	Double Wall	BOX CERTIFICATE  B				
(C) Bursting Test	275 Lbs. Per Sq. Inch	BOX MEETS ALL CONSTRUCTION REQUIREMENTS OF APPLICABLE FREIGHT CLASSIFICATION				
(D) Min comb Wt. Facings:	110 Lbs. Per M Sq. Ft	BURSTING C LBS PER TEST SQ INCH MIN COMB D LBS PER				
(E) Size Limit:	95"	MIN COMB D LBS PER M SQ FT SIZE LIMIT E INCHES				
(F) Gross Wt. Lt:	100 Lbs.					
(G) Location:	PHOENIX, AZ	G				



# **SECTION III: TEST PROCEDURES AND RESULTS**

DROP TESTS Design #1

TEST	INFO	RMATION	TEST CRITERIA
TEST CONTENTS:	Met	hanol/Water Solution (0.969 SG)	For packaging containing liquid, each packaging does not leak.
SAMPLE PREPARATION:	Refer to Section II		There can be no damage to the outer packaging likely to adversely affect safety during transport. Inner
CONDITIONING:	-18°	°C (0°F) Freezer #W201	receptacles, inner packagings or articles must remain completely
CONTENTS TEMP.:	-18.	4°C (-1.1°F)	within the outer packaging and there must be no leakage of the
DROP HEIGHT:		Meters (75.0") fer to Section IV)	filling substance from the inner packaging.  • Any discharge from a closure is slight and ceases immediately after
TEST EQUIPMENT:	L.A.	B. Accu Drop 160	impact with no further leakage. (§178.603)
	ROP	ORIENTATIONS AND TEST RE	SULTS
Sample #1: Flat on Botton	า	Sample #2: Flat on Top	*Sample #3: Flat on Long Side
PASS: No leakage or damag	e.	PASS: No leakage or damage.	PASS: No leakage or damage.
*Sample #4: Flat on Short S	de	*Sample #5: Bottom Corner	**Sample #1: Top Corner
PASS: No leakage or damag	e.	PASS: No leakage. Slight deformation at impact corner.	PASS: No leakage. Slight deformation at impact corner.

<sup>\*</sup>Side and corner drops were conducted to impact the manufacturer's joint.

<sup>\*\*</sup>Flat on bottom drop sample was also used for the top corner drop.



# DROP TESTS Design #2

TEST	INFO	RMATION	TEST CRITERIA
TEST CONTENTS:	Methanol/Water Solution (0.969 SG)		For packaging containing liquid, each packaging does not leak.
SAMPLE PREPARATION:	Ref	er to Section II	There can be no damage to the outer packaging likely to adversely
CONDITIONING:	-18°	°C (0°F) Freezer #W201	affect safety during transport. Inner receptacles, inner packagings or articles must remain completely
CONTENTS TEMP.:	-18.	4°C (-1.1°F)	within the outer packaging and there must be no leakage of the
DROP HEIGHT:		Meters (75.0") fer to Section IV)	filling substance from the inner packaging.  • Any discharge from a closure is slight and ceases immediately after
TEST EQUIPMENT:	L.A.	B. Accu Drop 160	impact with no further leakage. (§178.603)
	ROP	ORIENTATIONS AND TEST RE	SULTS
Sample #12: Flat on Botton	n	Sample #13: Flat on Top	*Sample #14: Flat on Long Side
PASS: No leakage or damag		PASS: No leakage or damage.	PASS: No leakage or damage.
*Sample #15: Flat on Short S	ide	*Sample #16: Bottom Corner	**Sample #12: Top Corner
PASS: No leakage or damag	e.	PASS: No leakage. Slight deformation at impact corner.	PASS: No leakage. Slight deformation at impact corner.

<sup>\*</sup>Side and corner drops were conducted to impact the manufacturer's joint.

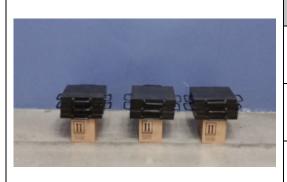
<sup>\*\*</sup>Flat on bottom drop sample was also used for the top corner drop.



# **STACKING TEST**

TEST IN	TEST CRITERIA	
TEST CONTENTS:	Empty	
SAMPLE PREPARATION:	Refer to Section II	There can be no deterioration that could adversely affect transport safety or any
CONDITIONING:	Ambient	distortion liable to reduce the package's
TEST LOAD APPLIED:	113.4 Kg (250.0 Lbs.) (Refer to Section IV)	strength, cause instability in stacks of packages, or cause damage to inner packagings that is likely to reduce safety
TEST DURATION:	24 Hours	in transport. (§178.606)
TEST EQUIPMENT:	Dead Load Weights	

# **STACKING TEST SET-UP & RESULTS**



Sample #	Maximum Deflection After 24 Hours	Results
6	1/16"	PASS
7	1/16"	PASS
8	0"	PASS

**Comments/Observations:** Following the 24-hour stack test, there was no damage likely to affect the performance of the packaging.

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



### PRESSURE DIFFERENTIAL TEST 38-439 Neck Finish

TEST INFO	TEST CRITERIA	
TEST CONTENTS:	Water	
WATER TEMPERATURE:	(75.6°F)	
FILL CAPACITY:	Maximum Capacity	
CLOSURE APPLICATION:	Refer to Section II	Packaging for which retention of
CONDITIONING:	Ambient	liquid is a basic function must be capable of withstanding the pressure
TEST PRESSURE:	300 kPa	requirements without leakage.
TEST DURATION:	30 Minutes	(§173.27(c))
AREA OF PRESSURIZATION:	Through the Bottom	
TEST EQUIPMENT:	Regulated Water Source Digital Pressure Gauge #: 605	

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



Sample #	Results
1	PASS
2	PASS
3	PASS

### **Comments/Observations**

All three samples maintained the 300 kPa test pressure for 30 minutes without leakage.



### PRESSURE DIFFERENTIAL TEST 45mm Neck Finish

TEST INFO	TEST CRITERIA	
TEST CONTENTS:	Water	
WATER TEMPERATURE:	(75.6°F)	
FILL CAPACITY:	Maximum Capacity	
CLOSURE APPLICATION:	Refer to Section II	Packaging for which retention of
CONDITIONING:	Ambient	liquid is a basic function must be capable of withstanding the pressure
TEST PRESSURE:	300 kPa	requirements without leakage.
TEST DURATION:	30 Minutes	(§173.27(c))
AREA OF PRESSURIZATION: Through the Bottom		
TEST EQUIPMENT:	Regulated Water Source Digital Pressure Gauge #: 605	

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



Sample #	Results
1	PASS
2	PASS
3	PASS

### **Comments/Observations**

All three samples maintained the 300 kPa test pressure for 30 minutes without leakage.



VIBRATION TEST Design #1

TEST	TEST CRITERIA	
TEST CONTENTS:	Water	Immediately following the period of
SAMPLE PREPARATION:	Refer to Section II	vibration, each package must be removed from the platform, turned on its side and observed for any
CONDITIONING:	Ambient	evidence of leakage.
TABLE DISPLACEMENT:	1"	A packaging passes the vibration test if there is no rupture or leakage from any of the packages.
TEST FREQUENCY:	3.8 Hz	No test sample should show any deterioration which could
TEST DURATION:	1 Hour	adversely affect transportation safety or any distortion liable to
TEST EQUIPMENT:	Vertical motion using L.A.B. Palletizer Vibration System	reduce packaging strength. (§178.608)

VIBRATION TEST SET-UP AND RESULTS				
	Sample #	Results	Comments/Observations	
	9	PASS		
	10	PASS	No leakage or damage.	
	11	PASS		



VIBRATION TEST Design #2

TEST	TEST CRITERIA	
TEST CONTENTS:	Water	Immediately following the period of
SAMPLE PREPARATION:	Refer to Section II	vibration, each package must be removed from the platform, turned on its side and observed for any
CONDITIONING:	Ambient	evidence of leakage.
TABLE DISPLACEMENT:	1"	A packaging passes the vibration test if there is no rupture or leakage from any of the packages.
TEST FREQUENCY:	3.8 Hz	No test sample should show any deterioration which could
TEST DURATION:	1 Hour	adversely affect transportation safety or any distortion liable to
TEST EQUIPMENT:	Vertical motion using L.A.B. Palletizer Vibration System	reduce packaging strength. (§178.608)

VIBRATION TEST SET-UP AND RESULTS				
	Sample #	Results	Comments/Observations	
	17	PASS		
	18	PASS	No leakage or damage.	
	19	PASS		



# **COBB WATER ABSORPTION TEST**

TES	TEST CRITERIA	
NUMBER OF SAMPLES:	5	
SAMPLE SIZE:	5" x 5" (Minimum)	- An increase in mass greater
CONDITIONING:	73°F / 50% RH Quality Room #W202	<ul> <li>An increase in mass greater than 155 g/m² over the 30</li> </ul>
WATER APPLIED:	100 mL / Sample	minute duration represents an unacceptable level of water
TEST DURATION:	30 Minutes / Sample	resistance. (§178.516)
TEST EQUIPMENT:	UWE Analytical Balance Gurley Cobb Water Absorption Fixtures	(3 )

COBB WATER ABSORPTION TEST RESULTS				
REPRESENTATIVE SET-UP PHOTO	Water Absorbed			
	1	120.0 g/m²		
TEN-E Setting the Standard	2	120.0 g/m²		
	3	123.0 g/m²		
	4	105.0 g/m²		
	5	123.0 g/m²		
	AVERAGE:	118.2 g/m²		
	RESULT	PASS		



### **REGULATORY AND INDUSTRY STANDARD REFERENCES**

	REGULATORY REFERENCES				
	49 CFR①	UN@	IMDG3	ICAO@	IATA®
TEST	October 2022 Edition	22 <sup>nd</sup> Edition	2022 Edition	2023-2024 Edition	64 <sup>th</sup> 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;1.1.6	5.0.2.9
Vibration:	178.608			4;1.1.1 & 4;1.1.4	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)
- Technical Instructions for the Safe Transport of Dangerous Good by Air (ICAO)
- © International Air Transport Association (IATA) Dangerous Goods Regulations

INDUSTRY STANDARD REFERENCES			
	ASTM® D5276:	Standard Test Method for Drop Test of Loaded Containers by Free Fall	
Drop: ASTM® D7790:		Standard Test Method for the Preparation of Plastic Packagings Containing Liquids for United Nations (UN) Drop Testing	
	ISO⑦ 2248:	Packaging – Complete, Filled Transport Packages – Vertical Impact Test by Dropping	
	ASTM® D8409:	Standard Guide for Conducting Stacking Tests on UN Packagings Using Guided or Unguided Loads	
Stacking:	ASTM® 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:	ASTM® D7660:	Standard Guide for Conducting Internal Pressure Tests on United Nations (UN) Packagings	
	ASTM® D999:	Standard Test Method for Vibration Testing of Shipping Containers	
Vibration:	ISO⑦ 2247:	Packaging – Complete, Filled Transport Packages – Vibration Test at Fixed Low Frequency	
Cobb:	ISO⊘ 535:	Paper and Board – Determination of Water Absorption – Cobb Method	

### **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.

② International Organization for Standardization (ISO)



# **SECTION IV: MATHEMATICAL CALCULATIONS**

# Design #1

INFORMATION USED FOR CALCULATIONS			
Overall Packaging Tare Weight (PTW):	639.0 Grams		
Overflow Capacity (OFC):		Methanol/Water	
Methanol/Water	599.0 Grams	SG: 0.969	
Water	618.0 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):	8.38 Inches		
Stack Test-# of Samples Tested Simultaneously:	1		

98% OF OVERFLOW								
Overflow Capacity (OFC) x 98%								
OFC	_ x _	98%	_					
599.0	x	98% =	587.1	Grams	Methanol/Water			
618.0	X	98% =	605.7	Grams	Water			

PACKAGE TEST WEIGHTS											
Over	Overall Pkg Tare Weight (PTW) + (98% Overflow Capacity (OFC) x # of Inner Pkg (# IP)										
PTW	_ + _	(98% OFC	_ x	# IP)	_						
639.0	+	587.1	x	6	Methanol/Water						
639.0	+	605.7	X	6	Water						
Methanol/Wate	r:	4.1	kg	9.0	lb						
Water:		4.2	kg	9.2	lb						

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)				
639.0	_ + _	1.9	x	605.7	x	6				
		7.5	kg	16.5	lb					



Produc			DROP HEIGHT  uct Specific Gravities Exceeding ? i) x Packing Group Multiplication	
_ x	MF		Pac	king Group: II
x	1.00		Required Drop Height	Actual Drop Height
	1.90	Meter	74.8 Inches	75 Inches
	_ ×	x MF x 1.00	x MF x 1.00	x 1.00 Required Drop Height

	STACKING TEST MINIMUM LOAD CALCULATIONS										
	Number of Packages in a 3m High Stack (118.2 / Overall Pkg Height (OH) -1)										
	118.2 / Overall Height of one Pkg (OH) - 1										
(1	18.2	/	OH)	-1	_ =	# 3m HS					
1	18.2	1	8.38	-1	=	13.2					
						Individual Package)					
		Author	ized Pkg Gros	s Mass (APG	SM) x # of Pk	kg in a 3m High Stack (# 3m HS)					
A	PGM	x _	# 3m HS								
	7.5	x	13.2								
			99.0 k	g	218	8.3 lb					



# Design #2

INFORMATION USED FOR CALCULATIONS								
Overall Packaging Tare Weight (PTW):	633.0 Grams							
Overflow Capacity (OFC):		Methanol/Water						
Methanol/Water	615.0 Grams	SG: 0.969						
Water	638.0 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):	8.38 Inches							
Stack Test-# of Samples Tested Simultaneously:	1							

98% OF OVERFLOW								
Overflow Capacity (OFC) x 98%								
OFC	_ x _	98%	_					
615.0	x	98% =	602.7 Grams	Methanol/Water				
638.0	X	98% =	625.3 Grams	Water				

	PACKAGE TEST WEIGHTS										
Overa	Overall Pkg Tare Weight (PTW) + (98% Overflow Capacity (OFC) x # of Inner Pkg (# IP)										
PTW	_ + .	(98% OFC	_	x	# IP)	<u>_</u>					
633.0	+	602.7		X	6	Methanol/Water					
633.0	+	625.3		X	6	Water					
Methanol/Water	:	4.2	kg		9.2	lb					
Water:		4.3	kg		9.4	lb					
Water:		4.3	kg		9.4	lb					

	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)				
,	633.0	_ + _	1.9	x	625.3	x	6				
			7.7	kg	16.9	lb					



Packing Group: II
i deking Group.
Required Drop Height Actual Drop Heigh
er 74.8 Inches 75 Inches

	STACKING TEST MINIMUM LOAD CALCULATIONS										
	Number of Packages in a 3m High Stack (118.2 / Overall Pkg Height (OH) -1)										
	118.2 / Overall Height of one Pkg (OH) - 1										
(118.2	/ _	OH)	-1	_ =	# 3m HS						
118.2	1	8.38	-1	=	13.2						
					Individual Package)						
	Author	rized Pkg Gross	Mass (APG	iM) x # of Pk	kg in a 3m High Stack (# 3m HS)						
APGM	x _	# 3m HS									
7.7	x	13.2									
		101.7 kg	g	224	4.2 lb						