DOT/UNITED NATIONS
Performance Oriented Packaging Certification

PriorityPlastics

3H1 PERIODIC RETEST

7647 5 Liter Priority Pour HDPE Jerrican Packaging
No Vent- Group II
Chevron Phillips 50100
70 – 150 in-lb

Test Report #: 2022-02

u
n

3H1/Y1.8/150/**
USA/M5105
**Insert year the packaging is manufactured

TESTING PERFORMED FOR:

PRIORITY PLASTICS, INC.
500 Industrial Park Rd.
Portland, IN 47371

AND

PRIORITY PLASTICS, INC
704 Pinder Avenue
Grinnell, IA 50112

TESTING PERFORMED BY:

Priority Plastics, Inc.
500 Industrial Park Rd.
Portland, IN 47371
Phone: (260) 726-7000
Fax: (260) 726-8111

Certification Date: 1/10/22
Re-Certification Date: 1/10/23

TABLE OF CONTENTS

SECTION I: Certification

Periodic Retest

5 Liter Priority Pour HDPE Jerrican Packaging (Chevron Phillips 50100 Resin)

Priority Plastics, Inc. certifies that the packaging referenced above has passed the standards of the DEPARTMENT OF TRANSPORTATION'S TITLE 49 CFR; Performance Oriented Packaging Standards, Section 178. 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	1.8m (70.9 in.)	Windshield Fluid/Antifreeze (WW/A) Coolant 50/50 Diluted	January 11, 2022	PASS
Leakproofness	178.604	20 kPa – 5 Min. 3 PSI	Empty	January 11, 2022	PASS
Hydrostatic	178.605	150 kPa – 30 Min.	Water	January 11, 2022	PASS
Stack/ Dynamic Compression	178.606	409 lbs.	Water	January 11, 2022	PASS
Vibration	178.608	1.6mm – 1 Hr	Water	January 11, 2022	PASS

TEST REPORT NUMBERS:	**2017-25,** 2018-30,2019-06, 2020-02,2021-02, 2022-02
UN MARKING: (CFR 49 – 178.503)	u n 3H1/Y1.8/150/** USA/M5105
PACKAGING IDENTIFICATION CODE:	3H1 (178.509)
PERFORMANCE STANDARD:	Y (Packaging meets Packing Group II test)
MAXIMUM PRODUCT SPECIFIC GRAVITY:	1.8
INTERNAL TEST PRESSURE:	150 kPa
YEAR OF MANUFACTURE:	**Insert year the packaging is manufactured
STATE AUTHORIZING THE MARK:	USA
PACKAGING CERTIFICATION AGENCY:	(M5105) Priority Plastics, Inc.
PACKAGE IDENTIFICATION:	M5105 (Portland), M6167 (Grinnell)
PERIODIC RETEST DATE:	January 10, 2023

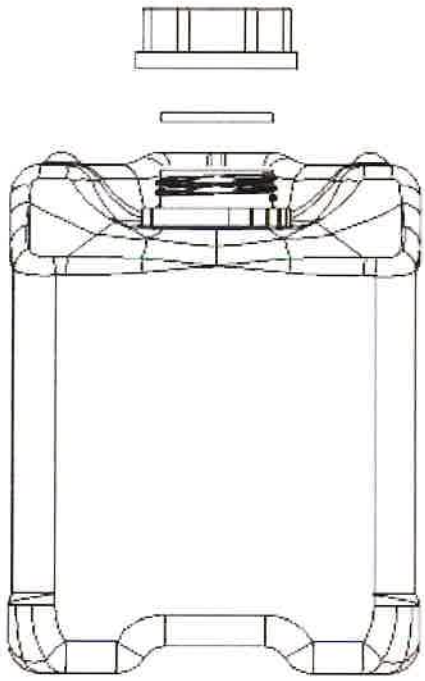
Note: It is the responsibility of the packaging user to ensure that all items shipped within this package are allowed to be shipped via this package in accordance with USDOT 49CFR and/or modal regulations applicable to the intended mode of transportation. The use of packaging methods other than those provided by Priority Plastics or the use of components other than those documented in this report may render this certification invalid.

MANUFACTURER:
Priority Plastics, Inc.
500 Industrial Park Road
Portland, IN 47371

Judy Wendel
Quality Manager Assistant
Priority Plastics, Inc.
500 Industrial Park Rd
Portland, IN 4737

SECTION II: PACKAGING DESCRIPTION / COMPONENTS

5 Liter Priority Pour Jerrican, HDPE Packaging



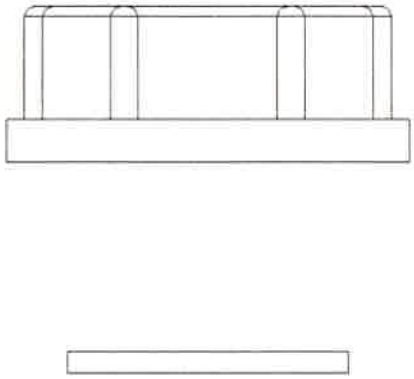
Certification Type:	Periodic Retest
Packaging Code Designation:	3H1
Packing Group:	II
Specific Gravity:	1.8
Hydrostatic Pressure:	150 kPa
TEST SAMPLE PREPARATION (Refer to Section IV)	
Overall Package Tare Weight:	0.393 Kg
Fill Capacity (98% Overflow):	
• Windshield Washer/Antifreeze (WW/A):	5.017 Kg
• Water	5.223Kg
Package Test Weight:	
• WW/A:	5.41 Kg
• Water	5.616 Kg
Calculated Package Gross Mass:	9.79 Kg (21.58 Lbs.)
CLOSING METHODS	
Application Torque:	70 – 150 In-Lbs.
Equipment:	Snap on Tool ED2600 Electronic Dial Hand Torque Wrench GP-052 & V-GP-129-A

COMPONENT INFORMATION

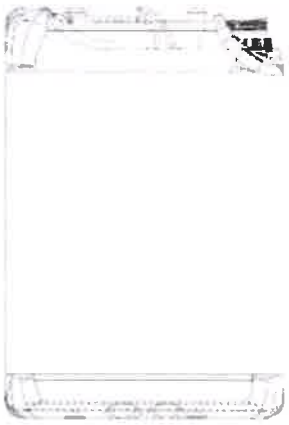
CLOSURE (8233-301)

Manufacturer: Rieke Corporation, Auburn, Indiana

Description: 50 mm Tamper Evident Threaded Closure	
Priority Item Number:	8233-301
Tare Weight:	18.32 Grams
Closure Overall Dimensions:	
• **Height**	1.004"
• **Diameter**	2.588"
Finish Dimensions:	
• **T**	1.984"
• **E**	1.797"
Markings (QC Audit):	No Markings, 6 Ribs Around the outside of the cap. Rieke® PAT PEND "4" LDPE Recycling Symbol, SC – 550 , 1
Liner/Gasket	EPDM Gasket
Identification:	Blue mark
Wall Thickness:	0.190"
Height Thickness:	0.132"
Diameter:	1.748"



TIGHT HEAD PLASTIC JERRICAN (7647)				
Manufacturer: Priority Plastics, Portland, IN				
Description: 5 Liter Priority Pour Jerrican				
Material /Pigment: High Density Polyethylene /Natural				
Method of Manufacturer:	Blow Molded			
Tare Weight:	0.375 Kg			
Capacity:				
• **Rated:**	5 Liters (1.406 Gal.)			
• **Overflow:**	5.330 Kg (1.406 Gallons) (5.33 Liter)			
Overall Dimensions:				
• **Height:**	8.738"			
• **Length:**	7.820"			
• **Width:**	6.518"			
Finish Dimensions:				
• **T**	1.915"			
• **E**	1.798"			
• **Neck Height**				
Wall Thickness:	Body	Top Head	Btm Head	
• **Minimum**	0.028"	0.022"	0.033"	
• **Minimum From Design Qualification Report 2018-02**	0.028"	0.022"	0.029"	
• **Material:**	High Density Polyethene			
Markings (QC Audit)	u n 3H1/Y1.8/150/21 USA/M5105 "2" HDPE Recycling Symbol, Month/Year Clock, 2 PRIORITYPLASSTICS.COM			



SECTION III: TEST PROCEDURES AND RESULTS

DROP TESTS

TEST INFORMATION	TEST CRITERIA
TEST CONTENTS: Windshield Washer/Antifreeze(0.977SG) **SAMPLE PREPARATION:** REFER TO Section II **CONDITIONING:** -18°C (0°F), Chamber # **TEST CONTENTS TEMP.:** -19.9° C **DROP HEIGHT:** 1.83 Meters (72") (Refer to Section IV) **TEST EQUIPMENT:** L.A.B. Accu drop 160	• For packaging containing liquid, each packaging does not leak when equilibrium has been reached between the internal and external pressures. • Any discharge from a closure is slight and ceases immediately after impact with no further leakage. (§ 178.603)

DIAGONAL TOP CHIME DROP TEST SET-UP AND RESULTS

Sample #	Results	Comments / Observations
1	PASS	No leakage or Breakage
2	PASS	No leakage or Breakage
3	PASS	No leakage or Breakage

FLAT ON SIDE NECK DOWN DROP TEST SET-UP AND RESULTS

Sample #	Results	Comments / Observations
5	PASS	No leakage or Breakage
6	PASS	No leakage or Breakage
7	PASS	No leakage or Breakage

LEAKPROOFNESS TESTS

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Empty	• A packaging passes the test if there is no leakage of air from the packaging. (§ 178.604)
CLOSURE APPLICAATION:	Refer to Section II	
CONDITIONING:	Ambient	
TEST PRESSURE:	20.7 kPa (3 PSI)	
TEST DURATION:	5 Minutes	
AREA OF PRESSURIZATION:	Through the Sidewall	
TEST EQUIPMENT:	Regulated Air Source Pressure Monitoring Gauge	

LEAKPROOFNESS TEST SET-UP & RESULTS

Sample #	Results	Comments / Observations
11	PASS	**All three samples maintained the 20.7 kPa test pressure for 5 minutes without leakage.**
12	PASS	
13	PASS	

HYDROSTATIC PRESSURE TEST

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Water	• For each test sample, there is no leakage of liquid from the package. (§ 178.604)
FILL CAPACITY:	Maximum Capacity	
CLOSURE APPLICATION:	Refer to Section II	
CONDITIONING:	Ambient	
TEST PRESSURE:	150 kPa (21.76 psi)	
TEST DURATION:	30 Minutes	
AREA OF PRESSURATION:	Through the Sidewall	
TEST EQUIPMENT:	Regulated Water Source Pressure Monitoring Gauge	

HYDROSTATIC PRESSURE TEST SET-UP & RESULTS

Sample #	Results	Comments / Observations
14	PASS	**All three samples maintained the 150 kPa test pressure for 30 minutes without leakage.**
15	PASS	
16	PASS	

DYNAMIC COMPRESSION TEST RESULTS

TEST INFORMATION		TEST CRITERIA
TEST CONTENTS:	Empty and Without Closure	• After application of the required load, there can be no buckling of the sidewalls sufficient to cause damage to its expected contents. • In no case may the maximum deflection exceed one inch. (§ 178.606)
SAMPLE PREPARATION:	Refer to Section II	
CONDITIONING:	Ambient	
PRE-LOAD APPLIED:	50 Lbs.	
MINIMUM TEST LOAD REQUIRED:	185.625Kg (409.2 Lbs.) (Refer to Section IV.)	
TEST EQUIPMENT:	TLS(Tech Lab Systems)	

DYNAMIC COMPRESSION TEST SET-UP & RESULTS

Sample #	Load	Deflection	Results
17	409.2 Lbs.	0.490"	Passed
18	409.2 Lbs.	0.499"	Passed
19	409.2 Lbs.	0.473"	Passed

NOTE: After meeting the minimum to load requirement of 178.606 ©(2)(ii), each container was taken to failure. Refer to Section VI for the Load vs Deflection Graphs and the maximum compression strength of each test sample.

REPETITIVE SHOCK VIBRATION TESTS

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 package 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:	Ambient	
TABLE DISPLACEMETN:	1"	
TEST FREQUENCY:	4.0 Hz	
TEST DURATION:	1 Hour	
TEST EQUIPMENT:	Vertical motion using Vibration Tester	

VIBRATION TEST SET-UP & RESULTS

Sample #	Results	Comments / Observations
8	PASS	No leakage or damage.
9	PASS	
10	PASS	

REGULATORY AND INDUSTRY STANDARD REFERENCES

REGULATORY REFERENCES	
TEST	**49 CFR 2020 EDITION**
Drop:	178.603
Leakproofness:	178.604
Hydrostatic Pressure:	178.605
Stack:	178.606
Vibration:	178.608

1. United States Department of Transportation Code of Federal Regulations (CFR) Title 49, Transportation, Parts 100-185

SECTION IV: MATEMATICAL CALCULATIONS

INFORMATION USED FOR CALCULATIONS

Overall Packaged Tare Weight (PTW):	**0.393 Kg**	**WW/A SG**
Overflow Capacity (OFC) :		**SG: 0.984**
Windshield Washer/Antifreeze	**5.120 Kg**	
Water	**5.330 Kg**	**1.406 Gallons (GAL)**
Packing Group:	**Ii**	
Product Specific Gravity (PSG):	**1.8**	
Packing Group Multiplication Factor (MF):	**1.00**	
Nesting Height of one Package (NH):	**8.738 Inches**	
Stack Test # of Samples Tested Simultaneously:	**0**	

98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

OC	x	98%		
5.120	x	98% =	**5.017 Kg**	**WW/A**
5.330	x	98% =	**5.223 Kg**	**Water**

PACKAGED TEST WEIGHT

Overall Pkg Tare Weight (PTW) + 98% Overflow Capacity (OFC)

PTW	+	98% OFC =		
0.393	+	5.017	**5.410Kg**	**11.927 Lbs. WW/A**
0.393	+	5.223	**5.616 Kg**	**12.381 Lbs. Water**

CALCULATED PACKAGE GROSS MASS (CPGM)

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

PTW	+	(PSG	x	98%OFC)
0.406	+	1.8	x	5.194
		9.795 (9.795) Kg		**21.594Lbs.**

DROP HEIGHT CALCULATION (FOR SPECIFIC GRAVITIES EXCEEDING 1.2)

Product Specific Gravity (PSG) x Packing Group Multiplication Factor (MF)

PSG	x	MF		Packing Group: II	
1.8	x	1.00		Required Drop Height	Actual Drop Height
		1.80	**Meter**	**70.9 Inches**	**72 Inches**

DYNAMIC COMPRESSION TEST LOAD CALUCLATIONS

Dynamic Compression Test Load Calculation

Where

A = Applied Load in Lbs.
n = Minimum number of containers that, when stacked reach a height of 3m (120 inches) **(See Calculation Below)**
s = Product Specific Gravity---**(PSG)**
w = Overall package tare weight **(Lbs.)**
v = Maximum Container Capacity **(Gal.)**
8.3 = Weight in pounds of 1 gallon of water
1.5 = Compensation factor that converts the static load of the stacking test into a load suitable for Dynamic Compression Testing

A =	n	x	(w	+	(s	x	v	x	8.3	x	0.98))	x	1.5
401.658	12.517		0.895		1.8		1.4		8.3		0.98		1.5

182.189 Kg **401.658 Lbs.**

Minimum Required Top Load Used in Design Qualification Testing x 1.5 Compensation Factor*

Top Load used in Design Qualification Testing: 123.75 Kg. x 1.5 = 185.625 Kg 409.2 Lbs

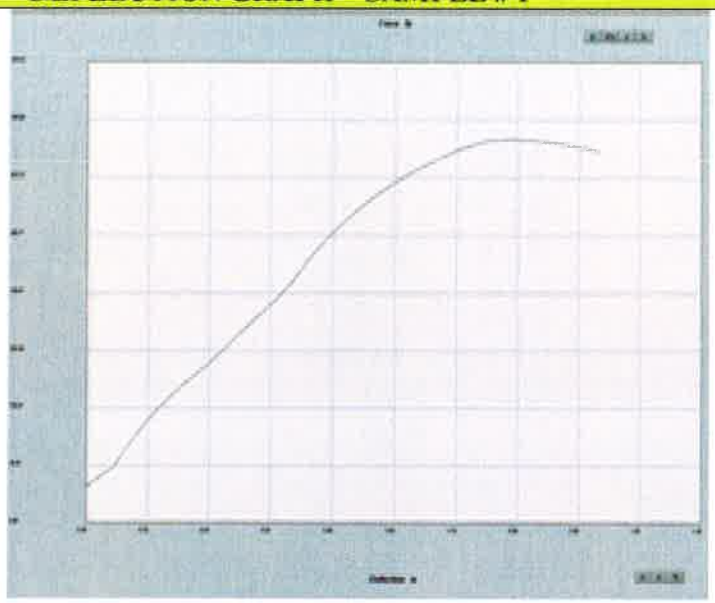
N = Number of Packages in a 3m High Stack (118/Nesting Height (NH)-1)

118/Nesting Height of one Pkg (NH)-1

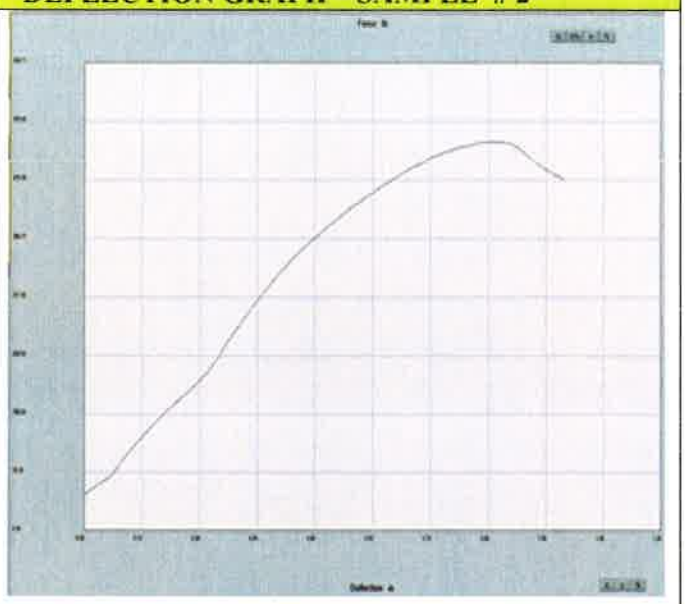
(118.11	/	NH)	-	1	=	n
118.11	/	8.738	-	1	=	12.517

SECTION V: INDIVIDUAL LOAD VS. DEFLECTION GRAPHS AND DATA

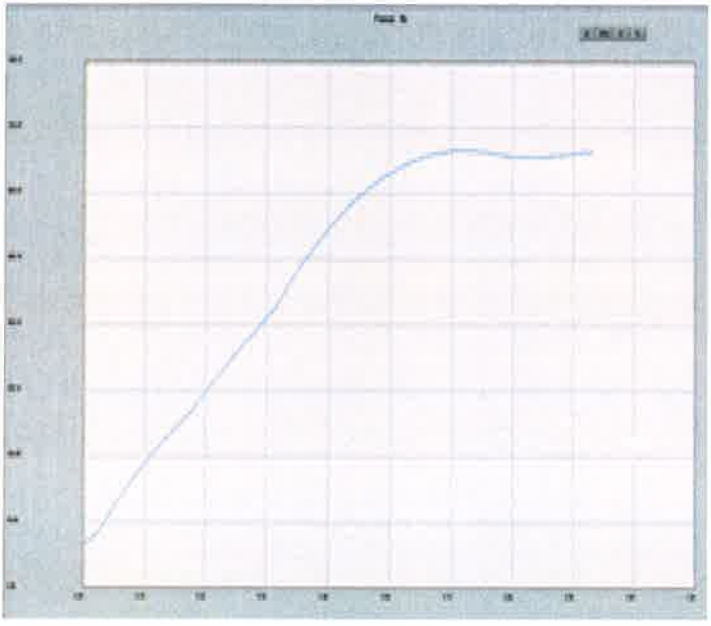
DEFLECTION GRAPH – SAMPLE # 1



DEFLECTION GRAPH – SAMPLE # 2



DEFLECTION GRAPH – SAMPLE # 3



MAXIMUM LOAD VS. DEFLECTION

Sample #	Maximum Load – Lbs.	Deflection – Inch
21	533.02 Lbs.	1.00”
22	528.98 Lbs.	1.00”
23	506.93 Lbs.	1.00”

PriorityPlastics

PriorityPlastics

Closing Instructions

Corporate Office
500 Industrial Park Dr.
Portland IN 47371
Tel 260.726.7000 Fax 260.726.8111

Date Created:
Updated to New Format: 8.08.2019

Closing Instructions for 5Liter, 4 Liter, 2.5 Liter Priority Pours

Caps that this closing instruction includes are:
Rieke Cap SC-550 with an EPDM Gasket.(Rieke Drawing # 28000976,Rieke Item # 03950100, Priority # 8233-301)

Step 1. Place the correct SC 550 cap as listed above on the container.

Step 2. Turn the 50mm cap to get started over the threads of the 50mm neck.

Step 3. Place an overcap fixture over the 50mm cap.

Step 4. Torque the cap to 70 in-lbs. - 150 in-lbs.

NOTE: Priority Plastics, Inc. certifies that these containers have been manufactured and certified in accordance with Performance Requirements of Part 178 Subpart M of title 49CFR. The chemical filler and the shipper may rely upon the marking as certification that the package meets the applicable UN performance standards. The shipper is responsible for ensuring the product is authorized in the package and must consult and General Shipper Requirements, including modal requirements. To meet UN standards, the package must be properly closed for shipment. Failure to follow the closure instructions or substitution of packaging components other than those identified in the closure instructions will render the UN Certification invalid.