DOT/UNITED NATIONS
Performance Oriented Packaging Certification

PriorityPlastics

1H1 PERIODIC RETEST

7923 5 Gallon Round
No Vent- Group II
HDPE
8229-202-060 Cap

Test Report #: 2025-05

u
n

1H1/Y1.8/150/**
USA /M5105
**Insert year the packaging is manufactured

TESTING PERFORMED FOR:

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

TESTING PERFORMED BY:

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

Certification Date: 1/29/2025
Re-Certification Date: 1/29/2026

TABLE OF CONTENTS

SECTION I: Certification

Periodic Retest
5 Gallon Round HDPE Packaging (HDPE 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	Windshield Washer/ Antifreeze Coolant 50/50 Diluted (WW/A)	January 29, 2025	PASS
Leakproofness	178.604	20 kPa –5 Min. 3 PSI	Empty	January 22, 2025	PASS
Hydrostatic	178.605	150 kPa – 30 Min.	Water	January 22, 2025	PASS
Stacking/ Dynamic Compression	178.606	880.8 lbs	Water	January 24, 2025	PASS
Vibration	178.608	1.6 MM – 1Hr	Water	January 22, 2025	PASS

TEST REPORT NUMBERS: **2018-13,** 2019-03, 2020-04,2021-04.2022-05, 2023-06, 2024-04, 2025-05	
UN MARKING: (CFR 49 – 178.503)	u n 1H1/Y1.8/150/** USA /M5105
PACKAGING IDENTIFICATION CODE:	1H1 (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
PERIODIC RETEST DATE:	January 29, 2026

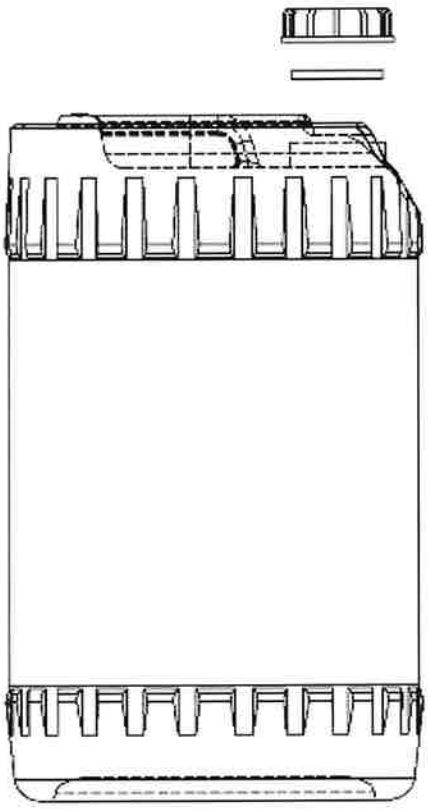
Note: It is the responsibility of the packaging user to ensure that all items shipped within this package are allowed to be shipped via this package in accordance with USDOT 49 CFR and/or modal regulations applicable to the intended mode of transportation. The use of packaging methods other than those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

Michelle Hill
Quality Specialist
Priority Plastics, Inc.
500 Industrial Park Rd
Portland, IN 47371

SECTION II: PACKAGING DESCRIPTION / COMPONENTS

5 Gallon Round HDPE Packaging



Certification Type:	Periodic Retest
Packaging Code Designation:	1H1
Packing Group:	II
Specific Gravity:	1.8
Hydrostatic Pressure:	150 kPa

TEST SAMPLE PREPARATION
(Refer to Section IV_)

Overall Package Tare Weight: 1.166 Kg

Fill Capacity (98%Overflow):

- Windshield Washer/Antifreeze(WW/A) 19.742 Kg
- Water 20.638 Kg

Package Test Weight:

- WW/A: 20.909 Kg
- Water 21.805 Kg

Calculated Package Gross Mass: 38.32 Kg (84.47 Lbs.)

CLOSING METHODS

Application Torque: 175-185 In-Lbs.

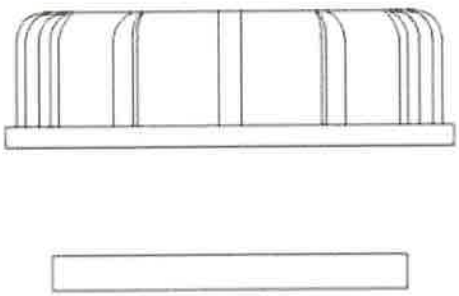
Equipment: GP-052 & V-GP-081-A

COMPONENT INFORMATION

CLOSURE (8229-202-060)

Manufacturer: Miami Valley Plastics, Eldorado, OH

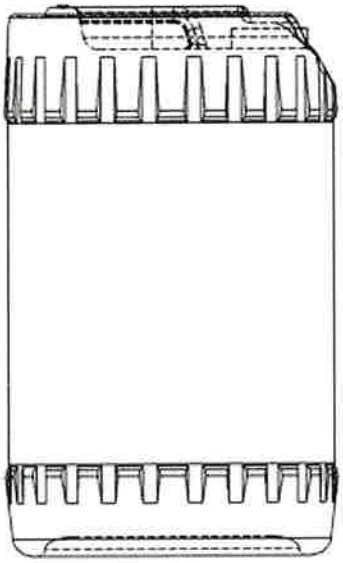
Description: 70MM CAP WITH ¾" NPT and EPDM Gasket	
Priority Item Number:	8229-202-060
Tare Weight:	41.61 Grams
Closure Overall Dimensions:	
• **Height**	0.955"
• **Diameter**	3.229"
Finish Dimensions:	
• **T**	2.787"
• **E**	2.620"
Markings (QC Audit):	6, 12 ribs around the outside
Liner/Gasket	EPDM Gasket
Identification:	None
Wall Thickness:	0.175"
Height Thickness:	0.250"
Diameter:	2.580"



TIGHT HEAD PLASTIC JERRICAN (7923)

Manufacturer: Priority Plastics, Portland, IN

Description: 5 Gallon Round			
Material /Pigment: High Density Polyethylene /Natural			
Method of Manufacturer:	Blow Molded		
Tare Weight:	1.125 Kg		
Capacity:			
• **Rated:**	5 Gallons		
• **Overflow:**	21.060 Kg (5.56 Gallons)		
Overall Dimensions:			
• **Height:**	14.912"		
• **Bottom Diameter:**	11.800"		
• **Middle Diameter:**	11.680"		
Finish Dimensions:			
• **70mm T**	2.760"		
• **70mm E**	2.605"		
• **70mm Neck Height**	0.758"		
Wall Thickness:	Body	Top Head	Btm Head
• **Minimum**	0.043"	0.035"	0.040"
• **Minimum from Design Certification 2018-13**	0.043"	0.029"	0.039"
• **Material:**	High Density Polyethene		
Markings (QC Audit)	1H1/Y1.8/150/25/ USA/M5105 "2" HDPE Recycling Symbol, Month Clock, 3 WWWPRIORITYPLASTICS.COM		



SECTION III: TEST PROCEDURES AND RESULTS

DROP TESTS

TEST INFORMATION	TEST CRITERIA
TEST CONTENTS: Windshield Washer/Antifreeze(0.988SG) **SAMPLE PREPARATION:** REFER TO Section II **CONDITIONING:** -18°C (0°F), Chamber # **TEST CONTENTS TEMP.:** -22.5 °C (-8.5°F) **DROP HEIGHT:** 1.83 Meters (72") (Refer to Section IV) **TEST EQUIPMENT:** L.A.B. Accu drop	• 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, CAP FACING 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:	399.48 Kg (880.70 Lbs.) (Refer to Section IV.)	
TEST EQUIPMENT:	TLS(Tech Lab Systems)	

DYNAMIC COMPRESSION TEST SET-UP & RESULTS

Sample #	Load	Deflection	Results
8	880.70 Lbs.	0.942"	Passed
9	880.70 Lbs.	0.993"	Passed
10	880.70 Lbs.	0.953"	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
11	**PASS**	**No leakage or damage.**
12	**PASS**	
13	**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):	**1.166 Kg**	**WW/A SG**
Overflow Capacity (OFC) :		**SG: 0.988**
Windshield Washer/Antifreeze	**20.145 Kg**	
Water	**21.060 Kg**	**5.56 Gallons (GAL)**
Packing Group:	**II**	
Product Specific Gravity (PSG):	**1.8**	
Packing Group Multiplication Factor (MF):	**1.00**	
Nesting Height of one Package (NH):	**14.85 Inches**	

98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

OC	x	98%		
20.145	x	98% =	**19.742 Kg**	**WW/A**
21.060	x	98% =	**20.638 Kg**	**Water**

PACKAGED TEST WEIGHT

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

PTW	+	98% OFC =		
1.166	+	19.742	**20.909 Kg**	**46.096 Lbs. WW/A**
1.166	+	20.638	**21.805 Kg**	**48.072 Lbs. Water**

CALCULATED PACKAGE GROSS MASS (CPGM)

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

PTW	+	(PSG	x	98%OFC)
1.166	+	1.8	x	20.638
		38.32 Kg		**84.47 Lbs.**

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
866.51	6.95		2.57		1.8		5.56		8.3		0.98		1.5

393.04 Kg **866.51 Lbs.**

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

Top Load used in Design Qualification Testing: 266.32 Kg x 1.5 = 399.48 Kg 880.70 Lbs.
Minimum Required Top Load

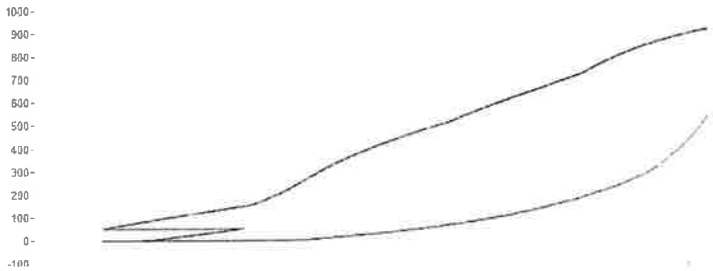
N = Number of Packages in a 3m High Stack (118/Nesting Height (NH)-1)

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

(118.11	/	NH)	-	1	=	n
118.11	/	14.85	-	1	=	6.95

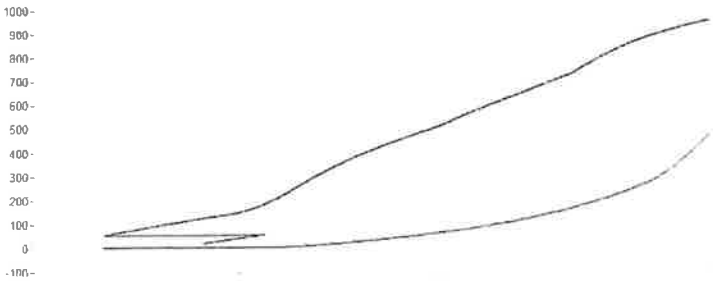
SECTION V: INDIVIDUAL LOAD VS. DEFLECTION GRAPHS AND DATA

DEFLECTION GRAPH – SAMPLE # 1



DEFLECTION GRAPH – SAMPLE # 2

DEFLECTION GRAPH – SAMPLE # 3



MAXIMUM LOAD VS. DEFLECTION

Sample #	Maximum Load – Lbs.	Deflection – Inch
8	940.93 Lbs.	1.00”
9	924.80 Lbs.	1.00”
10	987.39 Lbs.	1.00”

PriorityPlastics

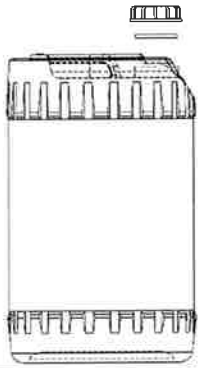
Closing Instructions

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

Date Created:
Updated to New Format: December 15, 2019

Closing Instructions for 5 Gal. Rd. – Integrated Handle70MM 8TPI, No Vent

Caps that this closing instruction includes are:
Priority Plastics 70mm caps manufactured by Miami Valley Plastics are: 8229-202-060 (70mm Cap W/EPDM Gasket)



Step 1. Ensure the gasket is in the 70mm closure.

Step 2. Turn the 70mm cap to get started over the threads of the 70mm neck.

Step 3. Place an overcap fixture over the 70mm cap.

Step 4. Torque the cap to 175 - 185 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.