

DOT/UNITED NATIONS
Performance Oriented Packaging Certification

PriorityPlastics

3H1 PERIODIC RETEST

7940 20 Liter Rectangle
70MM
22MM Vent Group II
8229-236-060 & 6043-000-070

2025-14



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.
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Phone: (260) 726-7000

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Certification Date: 04/04/2025

Re-Certification Date: 04/04/2026

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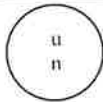
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SECTION I: Certification

PERIODIC RETEST 20 Liter Rectangle HDPE Packaging

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.

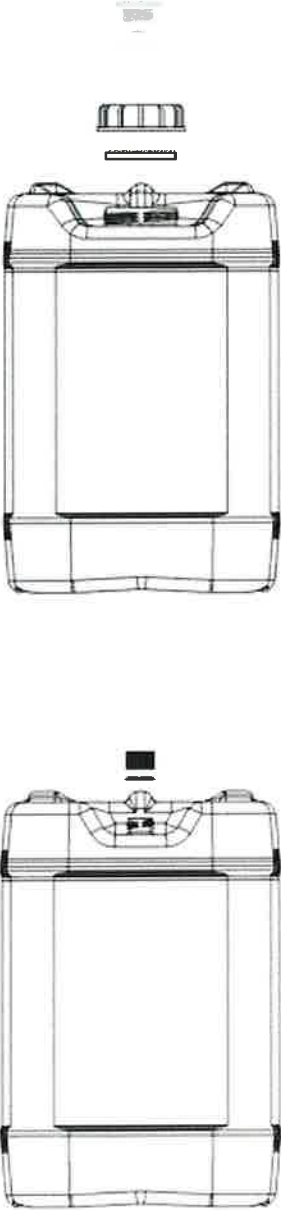
| SUMMARY OF PERFORMANCE TESTS | | | | | |
|--|---------------|---|--|----------------|--------------|
| UN/DOT TEST | CFR REFERENCE | TEST LEVEL | TEST CONTENTS | TEST COMPLETED | TEST RESULTS |
| Drop | 178.603 | 1.8 m | Windshield Fluid/Antifreeze Coolant 50/50 Diluted (WW?A) | April 04, 2025 | PASS |
| Leakproofness | 178.604 | 20 kPa – 5 Min. 3 PSI | Empty | April 01, 2025 | PASS |
| Hydrostatic | 178.605 | 150 kPa – 30 Min. | Water | April 01, 2025 | PASS |
| Stack/Dynamic Compression | 178.606 | 394.48 Kg (869.68 Lbs.) | Empty | April 03, 2025 | PASS |
| Vibration | 178.608 | 1.6mm – 1 Hr | Water | April 03, 2025 | PASS |
| TEST REPORT NUMBERS: 2019-86, 2019-87, 2025-14 | | | | | |
| UN MARKING: (CFR 49 – 178.503) | |  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: | | | April 04, 2026 | | |

In the event of future changes to the above referenced test standard, it is the responsibility of Priority Plastics to determine whether additional testing or updating of past testing is necessary to verify that the packaging tested remains in compliance with those standards.

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 | |
|--|---|
| 20 Liter Rectangle, 22MM Vent, Hole, 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: 1.239 Kg |
| | Fill Capacity (98% Overflow): |
| | <ul style="list-style-type: none"> Windshield Washer/Antifreeze 20.031 Kg Water 20.859 Kg |
| | Package Test Weight: |
| | <ul style="list-style-type: none"> WW/A: 21.271 Kg Water 22.099 Kg |
| | Calculated Package Gross Mass: 38.79 Kg (85.52 Lbs.) |
| | CLOSING METHODS |
| | Application Torque for 70mm Cap: 175 & 185 In-Lbs. |
| | Application Torque for Vent Plug: 50 In-Lbs. |
| | Application Torque for 22mm Cap: 25-30 In-Lbs. |
| | Equipment for 70mm Cap: GP-052 & V-GP-081-B |
| | Equipment for Vent Plug: GP-053 & V-GP-164-B |
| | Equipment for 22mm Cap: GP-055-A, GP-056-A & V-GP-171-A |
| | |

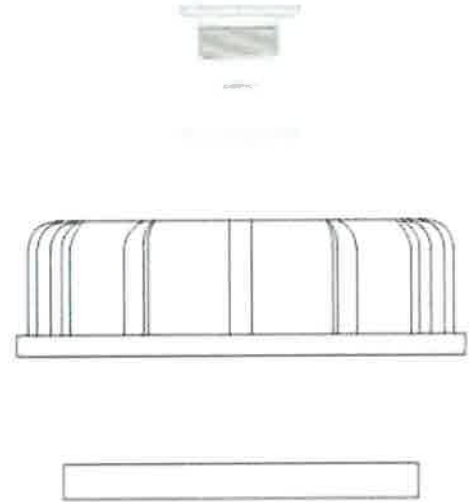
COMPONENT INFORMATION

CLOSURE (8229-236-060)

Manufacturer: Miami Valley Plastics, Eldorado, OH

Description: 70MM CAP WITH 3/4" NPT KNOCKED OUT & A POLYTEC 3/4" VENTED PLUG W/PTFE-CV4 VENT MATERIAL

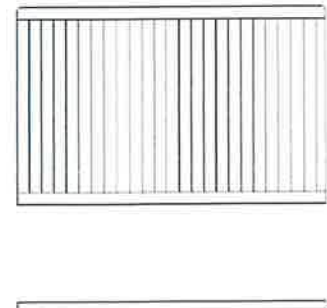
| | |
|------------------------------------|---------------------------------------|
| Priority Item Number: | 8229-236-060 |
| Tare Weight: | 48.68 Grams |
| Closure Overall Dimensions: | |
| • Height | 0.958" |
| • Height w/vent plug | 1.195" |
| • Diameter | 3.241" |
| Finish Dimensions: | |
| • T | 2.789" |
| • E | 2.627" |
| Markings (QC Audit): | Cavity #2, 12 ribs around the outside |
| Liner/Gasket | EPDM Gasket |
| Identification: | None |
| Wall Thickness: | 0.182" |
| Height Thickness: | 0.254" |
| Diameter: | 2.582" |
| Vent Plug Gasket: | EPDM |
| Vent Plug Diameter: | 1.502" |
| Vent Plug Height: | 0.642" |
| Welded in Vent Material: | Vent Medla' Oleophobic PTFE Laminate |
| Water Entry Pressure: | *: 15psi |
| Air Flow/Gurly No | **7 seconds |

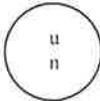


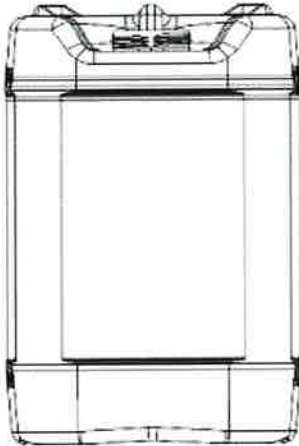
CLOSURE 6043-000-070

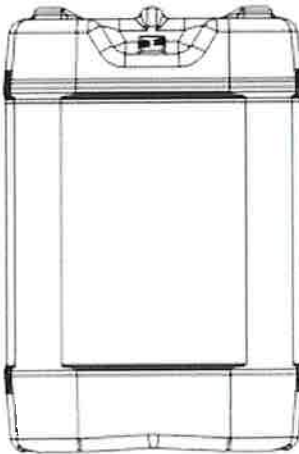
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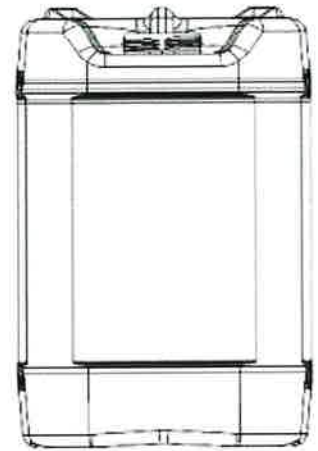
| | |
|-------------------------------------|--|
| Manufacturer: Berry Plastics | |
| Description: | 22/410 Fine Rib Serrated Closure-Lined |
| Material: | Polypropylene |
| Tare Weight: | 2.30 Grams |
| Overall Dimensions: | |
| • Height | 0.637" |
| • Diameter | 1.000" |
| Thread Dimensions: | |
| • T | 0.875" |
| • E | 0.788" |
| Liner: | |
| Description: | F-217 Foam Liner |



| TIGHT HEAD PLASTIC JERRICAN (7940) | | | | |
|--|--|---|----------|----------|
| Manufacturer: Priority Plastics, Portland, IN | | | | |
| Description: 20 Liter Rectangle with Integrated Handle, 70MM and 22MM Vent, Hole | | | | |
| Material /Pigment: High Density Polyethylene /Natural | | | | |
| Method of Manufacturer: | | Blow Molded | | |
| Tare Weight: | | 1.189 Kg | | |
| Capacity: | | | | |
| • Rated: | | 5Gallons (20 Liters) | | |
| • Overflow: | | 21.285 Kg (5.62 Gallons) | | |
| Overall Dimensions: | | | | |
| • Height: | | 15.200" | | |
| • Length: | | 10.917" | | |
| • Width: | | 10.240" | | |
| Finish Dimensions: | | | | |
| • 70mm T | | 2.757" | | |
| • 70mm E | | 2.582" | | |
| • 70mm Neck Height | | 0.776" | | |
| • 22mm T | | 0.782" | | |
| • 22mm E | | 0.764" | | |
| • 22mm H | | 0.663" | | |
| Wall Thickness: | | Body | Top Head | Btm Head |
| • Minimum | | 0.044" | 0.038" | 0.040" |
| • Minimum from Design Qualification 2019-86 | | 0.044" | 0.038" | 0.039" |
| | | | | |
| • Material: | | High Density Polyethylene | | |
| Markings (QC Audit) | | <div></div> <div>3H1/Y1.8/150/25 USA/M5105 “2” HDPE Recycling Symbol, Month Clock, Logo, 3</div> | | |








SECTION III: TEST PROCEDURES AND RESULTS


DROP TESTS

| TEST INFORMATION | TEST CRITERIA |
|--|---|
| <p>TEST CONTENTS: Windshield Washer/Antifreeze(0.985SG)</p> <p>SAMPLE PREPARATION: REFER TO Section II</p> <p>CONDITIONING: -18°C (0°F), Chamber #</p> <p>TEST CONTENTS TEMP.: -21.4°C (-6.52°F)</p> <p>DROP HEIGHT: 1.83 Meters (72") (Refer to Section IV)</p> <p>TEST EQUIPMENT: L.A.B. Accu drop</p> | <ul style="list-style-type: none"> 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 |
|---|----------|---------|-------------------------|
| | 4 | PASS | No leakage or Breakage |
| | 5 | PASS | No leakage or Breakage |
| | 6 | PASS | No leakage or Breakage |


BOTTOM DIAGONAL CHIME DROP TEST SET-UP AND RESULTS

|  | Sample # | Results | Comments / Observations |
|---|----------|---------|-------------------------|
| | 9 | PASS | No leakage or Breakage |
| | 10 | PASS | No leakage or Breakage |
| | 11 | PASS | No leakage or Breakage |

LEAKPROOFNESS TESTS

| TEST INFORMATION | | TEST CRITERIA |
|--------------------------------|---|---|
| TEST CONTENTS: | Empty | <ul style="list-style-type: none"> A packaging passes the test if there is no leakage of air from the packaging. (§ 178.604) |
| CLOSURE APPLICATION: | 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 |
|---|----------|---------|--|
| | 12 | PASS | All three samples maintained the 20.7 kPa test pressure for 5 minutes without leakage. |
| | 13 | PASS | |
| | 14 | PASS | |

HYDROSTATIC PRESSURE TEST

| TEST INFORMATION | | TEST CRITERIA |
|------------------------------|---|---|
| TEST CONTENTS: | Water | <ul style="list-style-type: none"> 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 |
|---|----------|---------|--|
| | 15 | PASS | All three samples maintained the 150 kPa test pressure for 30 minutes without leakage. |
| | 16 | PASS | |
| | 17 | PASS | |

DYNAMIC COMPRESSION TEST RESULTS

| TEST INFORMATION | | TEST CRITERIA |
|------------------------------------|---|--|
| TEST CONTENTS: | Empty and Without Closure | <ul style="list-style-type: none"> 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: | 394.48 Kg (869.68 Lbs.) (Refer to Section IV.) | |
| TEST EQUIPMENT: | TLS(Tech Lab Systems) | |

DYNAMIC COMPRESSION TEST SET-UP & RESULTS


|  | Sample # | Load | Deflection | Results |
|---|----------|-------------|------------|---------|
| | 21 | 869.68 Lbs. | 1.0" | Passed |
| | 22 | 869.68 Lbs. | 1.0" | Passed |
| | 23 | 869.68 Lbs. | 1.0" | 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 | <p>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.</p> <ul style="list-style-type: none"> 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 DISPLACEMENT: | 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 |
|---|----------|---------|-------------------------|
| | 27 | PASS | No leakage or damage. |
| | 28 | PASS | |
| | 29 | PASS | |

REGULATORY AND INDUSTRY STANDARD REFERENCES

| REGULATORY REFERENCES | |
|-----------------------|---------------------|
| TEST | 49 CFR 2019 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: MATHEMATICAL CALCULATIONS

INFORMATION USED FOR CALCULATIONS

| | | |
|--|--------------|---------------------------|
| Overall Packaged Tare Weight (PTW): | 1.239 Kg | <u>WW/A SG</u> |
| Overflow Capacity (OFC) : | | SG: 0.985 |
| Windshield Washer/Antifreeze | 20.440 Kg | |
| Water | 21.285 Kg | 5.62 Gallons (GAL) |
| Packing Group: | II | |
| Product Specific Gravity (PSG): | 1.8 | |
| Packing Group Multiplication Factor (MF): | 1.00 | |
| Nesting Height of one Package (NH): | 15.19 Inches | |
| Stack Test # of Samples Tested Simultaneously: | 0 | |

98% OF OVERFLOW

Overflow Capacity (OFC) x 98%

| | | | | |
|-----------|---|------------|------------------|--------------|
| <u>OC</u> | x | <u>98%</u> | | |
| 20.440 | x | 98% = | 20.031 Kg | WW/A |
| 21.285 | x | 98% = | 20.859 Kg | Water |

PACKAGED TEST WEIGHT

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

| | | | | |
|------------|---|------------------|------------------|--------------------------|
| <u>PTW</u> | + | <u>98% OFC =</u> | | |
| 1.239 | + | 20.031 | 21.271 Kg | 46.894 Lbs. WW/A |
| 1.239 | + | 20.859 | 20.099 Kg | 44.311 Lbs. Water |

CALCULATED PACKAGE GROSS MASS (CPGM)

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

| | | | | | |
|------------|---|-----------------|---|-------------------|--|
| <u>PTW</u> | + | <u>(PSG</u> | x | <u>98%OFC)</u> | |
| 1.239 | + | 1.8 | x | 20.859 | |
| | | 38.79 Kg | | 85.52 Lbs. | |

| DROP HEIGHT CALCULATION (FOR SPECIFIC GRAVITIES EXCEEDING 1.2) | | | | | |
|---|---|-----------|-----------------------------|---------------------------|-----------|
| Product Specific Gravity (PSG) x Packing Group Multiplication Factor (MF) | | | | | |
| <u>PSG</u> | x | <u>MF</u> | | <u>Packing Group: II</u> | |
| 1.8 | x | 1.00 | <u>Required Drop Height</u> | <u>Actual Drop Height</u> | |
| | | 1.80 | Meter | 70.9 Inches | 72 Inches |

| STACKING TEST MINIMUM LOAD CALCULATIONS | | | | | |
|--|---|--------------|---|-------------|----------|
| Number of Packages in a 3m High Stack (118/Nesting Height (NH))-1 | | | | | |
| 118.11/Nesting Height of one Pkg (NH) - 1 | | | | | |
| <u>(118.11</u> | / | <u>NH)</u> | - | <u>1</u> | = |
| 118.11 | / | 15.19 | - | 1 | = |
| | | | | | <u>n</u> |
| | | | | | 6.78 |
| Stack Test Load Calculation (Individual Package) | | | | | |
| Calculated Pkg Gross Mass (CPGM) x # of Pkg in a 3m High Stack (#3mHS) | | | | | |
| <u>CPGM</u> | x | <u>#3Mhs</u> | | | |
| 38.79 | x | 6.78 | | | |
| | | 262.99 Kg | | 579.79 Lbs. | |

DYNAMIC COMPRESSION TEST LOAD CALCULATIONS

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

$$\frac{A}{855.33} = \frac{n \times (w + (s \times v \times 8.3 \times 0.98)) \times 1.5}{6.78 \times 2.73 \times 1.8 \times 5.62 \times 8.3 \times .98 \times 1.5}$$

373.00 Kg

855.33 Lbs.

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

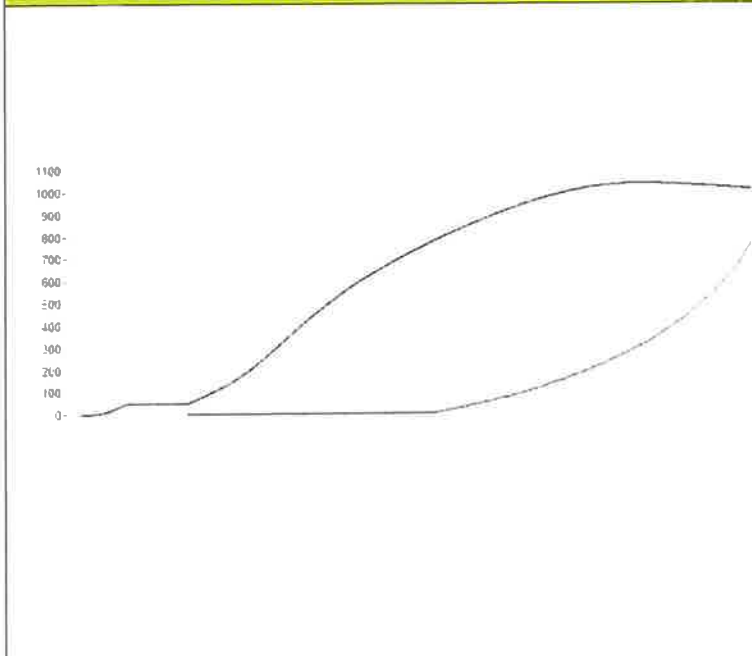
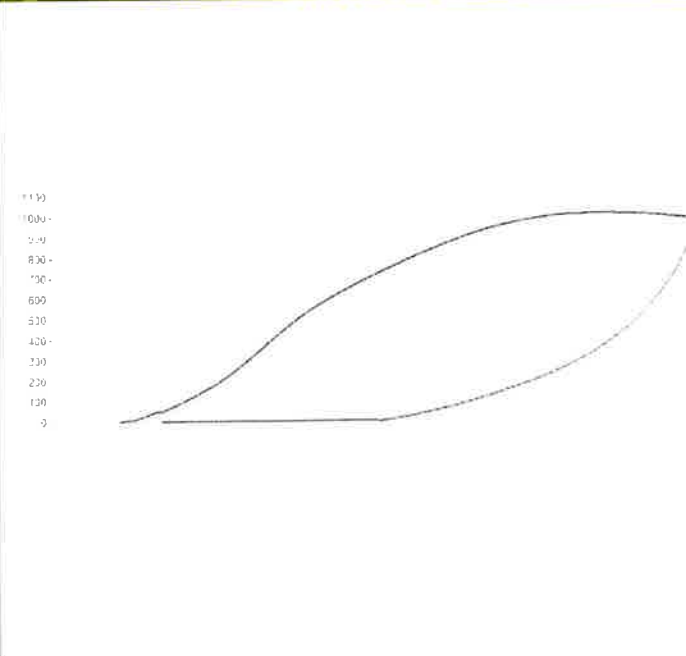
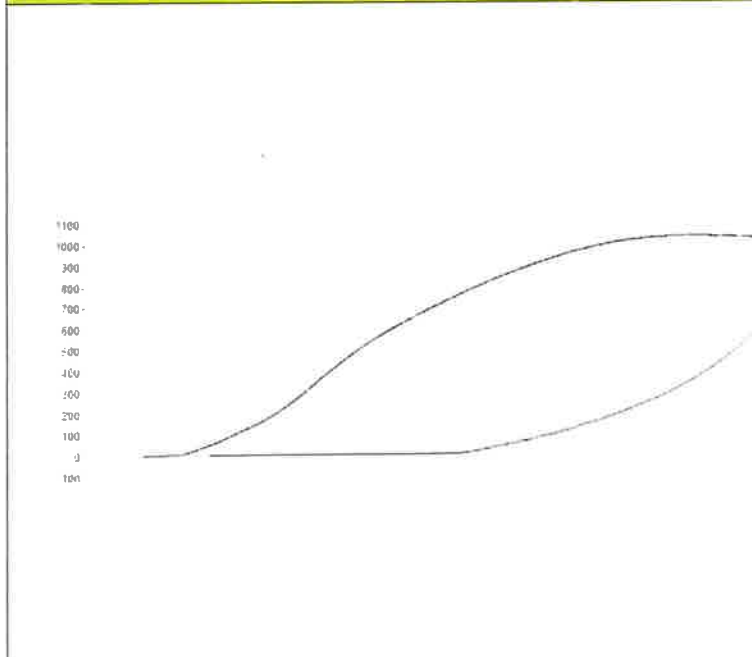
Top Load used in Design Qualification Testing: 262.99 Kg x 1.5 = 394.48 Kg 869.68 Lbs.
 Minimum Required Top Load

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

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

$$\frac{(118.11)}{118.11} \div \frac{(NH)}{15.19} - \frac{1}{1} = \frac{n}{6.78}$$

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 |
| | | 17 | 1027.44 Lbs. | 1.00" |
| | | 18 | 1002.42 Lbs. | 1.00" |
| | | 19 | 1019.13 Lbs. | 1.00" |

Closing Instructions

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

Date Created: May 23, 2019
Updated to New Format: August 16, 2019

Closing Instructions for 20 Liter – 70MM 8TPI, 22MM

Caps that this closing instruction includes are:
Priority Plastics 70mm caps manufactured by Miami Valley Plastics are: 8229-236-060 (70mm Cap W/EPDM Gasket & 3/4" NPT knocked out and yellow vent plug installed. Cap: Amcor Rigid Plastics USA, Inc: Priority item number 6043-000-060 with F-217 Liner.22mm.



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.



Step 5. Place a fixture in the plug



Step 6. Torque the plug in the cap to 50 in-lbs.



Step 7. Ensure the gasket is in the 22 mm closure. Note: If using Induction Seal 22MM cap, ensure the foil liner is induction sealed on the 22mm vent.



Step 8. Place an overcap fixture over the 22 mm cap.



Step 9. Torque the cap to 25-30 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.