M&M Industries, Inc.

UN SOLIDS TEST REPORT

12.0 Drum with 12.0 Slotted Gasketed Cover

Test Type: Periodic Retest

Additional Package Designs Covered by this report:

12.0 Drum with Non-Slotted Gasketed Cover

Test Report Number: 12DGASLOT-04

Completion Date: 3/9/2025

Test Facility/Packaging Manufacturer

Test Facility: M&M Industries
316 Corporate Place
Chattanooga, TN 37419

Packaging Manufacturer: M&M Industries
316 Corporate Place
Chattanooga, TN 37419

Completed By: _____
Title : Quality Assurance Manager

Samples Prepared By: Christian Honeycutt
QC Tech II

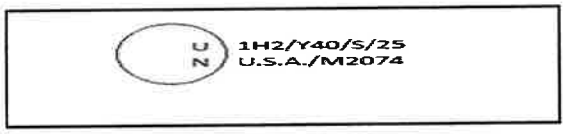
M&M Industries, Inc.

REPORT # 12DGASLOT-04

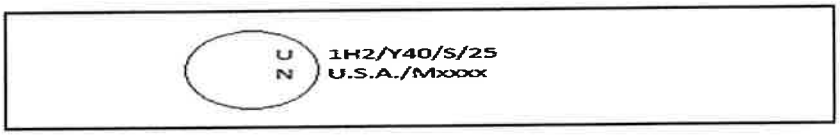
PACKAGE FILL WEIGHT INFORMATION

Overall package tare weight:	3.59 kg	
Filling Substance weight:	36.41 kg	80.27 lbs. (Approx.)
Package UN weight - Gross:	40 kg	

UN MARKING



Additional UN Marks covered by this report:



CLOSURE METHOD: PER ATTACHED INSTRUCTIONS

NOTES:

It is the responsibility of the end user to determine authorization for use of the packaging under the Hazardous Materials Regulations.

The use of packaging methods or components other than those documented in this report may render this certification invalid.

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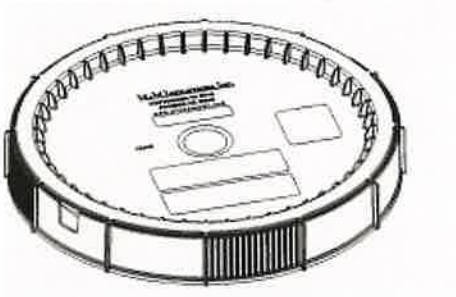
COVER		DRAWING
Description		
Cover Size:	12.0	
Style:	Drum Cover	
Fittings:	N/A	
Gasket:	12.0 - .200"-.240" Dia x 42.125"-44.094" L Neoprene	
Wall Thickness:	0.100	
Method of Manufacture: Injection Molded		
Material:	High Density Polyethylene	
Mold #	12440	
Tare Weight (kg):	0.86	
Overall Dimensions		
Height:	2.55"	
Top Diameter:	15.66"	
Bottom Diameter:	16.07"	
Thread Dimensions		
Major Diameter:	15.84"	
Minor Diameter:	15.16"	
Markings	M&M Industries, Inc. Chattanooga, TN 37419 Phoenix, AZ 85043 www.ultimatepail.com SPI "2" HDPE Recycling Symbol Open/Close Instructions in Multiple Languages	



M&M Industries, Inc.

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DRUM		DRAWINGS
Description		
Pail Size:	12.0	
Style:	Drum	
Gasket	NA	
Method of Manufacture: Injection Molded		
Material:	High Density Polyethylene	
Wall Thickness:	0.140	
Mold#	12439	
Tare Weight (kg):	2.73	
Capacity		
Overflow without cover in place (Water)(kgs):	48.05	
Overall Dimensions		
Height:	21.23"	
Diameter Below Stacking Lug:	13.95"	
Bottom Diameter:	13.00"	
Diameter at Curl (M2 Only):	N/A	
Thread Dimensions		
Major Diameter:	14.96"	
Minor Diameter:	14.66"	
Markings	M&M Industries, Inc. Chattanooga, TN 37419 Phoenix, AZ 85043 www.ulitmatepail.com SPI "2" HDPE Recycling Symbol 12.0 U.S. Gals N.R.C. .140 U N 1H2/Y40/S/25 U.S.A./M2074	

M&M Industries, Inc.

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DROP TEST CALCULATIONS

Maximum Fill Capacity with cover in place(water):	44.75 kg	
95% Of Maximum fill Capacity (water):	42.51 kg	
Overall Package Tare Weight:	3.59 kg	
Actual Filling substance weight:	36.41 kg	80.27 lb.
Package Test Weight:	40 kg	88.18 lb.

1 lb.= 0.4535924kg 1 kg = 2.204622 lb.

Packing Group Allowed (Chemical): **Y(PG II&III)** Package Test Level: **Y(PG II&III)**

Gross Mass (UN Mark on pail) 40 kg

DROP TEST						
Sample Size:	6 Samples/3 per orientation					
Test Contents:	Sand Mesh 2-635					
Additional Test Contents:	Vermiculite	30 Bags		Approx. Weight of Add. Contents	6 KG	
Conditioning:	-18 C (0 F) sample temperature at time of test, min. 24 hr. conditioning.					
Drop Height:	Inches:	48	Meters:	1.2 (PG II)	1 m=3.280840 ft.	
Test Equipment:	Mechanical Drop Tester and thermometer in filled sample (inside freezer)					
Test Standard:	Title 49 CFR; Section 178.603					
Target:	A rigid, non-resilient, flat and horizontal surface.					

Criteria for passing the test for solids:

Any discharge from a closure is slight and ceases immediately after impact with no further leakage; and no rupture is permitted in packaging's for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging.

DROP TEST SET-UP AND RESULTS		
Drop Orientation	**Sample**	**Results**
Diagonal Top Chime	1	Pass
Diagonal Top Chime	2	Pass
Diagonal Top Chime	3	Pass
Flat on Side	1	Pass
Flat on Side	2	Pass
Flat on Side	3	Pass

M&M Industries, Inc.

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STACKING & STACKING STABILITY TEST CALCULATIONS/RESULTS

Stack Test Minimum Load Calculation

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

(118	/	NH)	=	#	-	-1	=	#3m HS
118	/	20.38	=	5.80	-	1	=	4.80

Stack Test Load Calculation (Individual Package)

Gross Mass	X	#3m HS	=	Load		
40	X	4.80	=	192.00	kg	
				Appox.	423.28	lbs.

Actual Weight Placed on Pails: 597.5 lbs 271.02 kgs

TEST INFORMATION

Stack Test

Test contents:	Sand mesh size 2-635		
Additional test contents:	Vermiculite 30 bags	Approx. Weight of Add. Contents	6 KG
Conditioning:	Standard room temperature/RH		
Equipment:	Dead load weight/Guided load fixture		
Test Duration:	24 hours		
Test Standard:	Title 49 CFR; Section 178.606		

Criteria for passing the Stack Test

No test sample may leak or show any deterioration which could adversely affect transportation safety or any distortion likely to reduce its strength, or cause instability In stacks of packages.

STACK TEST RESULTS

SAMPLE #	START TIME	DURATION	END TIME	RESULTS
1	11PM	24 hours	11PM	Pass
2	11PM	24 hours	11PM	Pass
3	11PM	24 hours	11PM	Pass

STACK STABILITY RESULTS

RESULTS	CRITERIA FOR PASSING THE TEST
Pass	·In guided load tests, stacking stability must be assessed after test completion. ·Two filled packaging's of the same type must be placed on the test sample ·The stacked packages must maintain their position for 1 hour.
	For stack stability, M&M 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

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Additional Drops (If REQUIRED for Variation 5)

Criteria for passing the test for solids

Any discharge from a closure is slight and ceases immediately after impact with no further leakage; and no rupture is permitted in packaging's for materials in Class 1 which would permit spillage of loose explosive substances or articles from the outer packaging.

Description:

Sample	Drop Orientation	Results
1	Diagonal Top Chime	
2	Diagonal Top Chime	
3	Diagonal Top Chime	

Description:

Sample	Drop Orientation	Results
1	Diagonal Top Chime	
2	Diagonal Top Chime	
3	Diagonal Top Chime	

Description:

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1	Diagonal Top Chime	
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Description:

Sample	Drop Orientation	Results
1	Diagonal Top Chime	
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3	Diagonal Top Chime	

M&M INDUSTRIES, INC.

MANUFACTURER'S NOTIFICATION FOR M & M INDUSTRIES, INC. UN/DOT PACKAGING FOR HAZARDOUS SOLIDS General Information:

At M&M Industries, we understand your goal to safely transport your valuable products along roads and highways. You want to provide your customers with value while keeping their trust. While we are legally bound to provide you with the following information, M&M Industries also wants you to know we value your endeavor and want to help you reach your goal, every day.

Under the **U.S. Department of Transportation's Title 49CFR** it is the **Shipper's Responsibility** to determine that the packaging or container is an authorized packaging, including all part 173 requirements. The selected packaging must be properly assembled for transportation in accordance with the manufacturer's notification. **Please do all testing and research necessary to ensure that you have selected the proper M & M Industries container for use with your product.**

To meet UN/DOT Standards, this package must be properly closed for shipment. At the time of transfer, the packaging does not meet the UN standard because it is disassembled. Only when assembled as specified in the closing instructions below, and using the components described herein, is this packaging certified to meet the UN standard. Failure to follow the closing instructions or substituting package components with components other than those identified in the following paragraph will render the UN/DOT Certification invalid.

A copy of the manufacturer's notification, including closing instructions, must be made available for inspection by a representative of the Department of Transportation upon request for at least 90 days once the package is offered to the initial carrier for transportation in commerce. However, M&M Industries recommends that you retain these documents for a minimum of 365 days after the package is offered for shipment. The current record retention requirements are subject to change and are found in 49CFR 173.22(a)(4), http://www.ecfr.gov

M&M Industries takes superb pride in our Quality Assurance program and systems. However, even with our best efforts, fittings on covers / pails can become damaged or shift during transportation or storage after leaving our facility. M&M Industries recommends that fillers/offerors take all steps deemed necessary to check the fittings on each pail / cover, to meet your quality standards. An example of this is a screw cap on a cover that may vibrate or back off during transportation. The offeror of a hazardous material may be open to liability if they do not take the necessary precautions. Should you have any questions, please contact customer service at **(800) 331-5305**.

THESE CLOSING INSTRUCTIONS REMAIN IN EFFECT UNTIL FURTHER NOTICE.

CLOSING INSTRUCTIONS FOR:
Life Latch Drum

Identification of Packaging: This packaging type is identified by:

Size	Pail ID numbers	Matching lid ID numbers	Lid diameter (Ref only, measured at bottom of lid)
12 Gallon	**12439,14948**	12440	16.29"

This packaging may or may not use a gasket and/or vent plug. If a gasket or vent plug is used it must meet the specification below for **SOLIDS**:

UN Markings for Life Latch Drums:

An appropriate UN marking must be maintained for each M&M Industries container design. The UN markings for M&M Industries Life Latch Drum containers are listed below.

Container Sizes	UN Rating (Without gasket)	UN Rating (With gasket)
12.0 Gallon	1H2/Y53/S	1H2/Y40/S

In accordance with the U.S. Department of Transportation's Title 49CFR, Section 178.2, manufacturers of U.N.
Standard/DOT Specification packages are required to notify in writing each person to whom that packaging is transferred of all requirements in this part not met at the time of transfer, and with information specifying the type(s) and dimensions of the closings, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests. This information must include any procedures to be followed, including closing instructions for inner packaging and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation.

Specifically, the following items pertain to the **Life Latch Drums**:

- **Life Latch Drums** are certified to the UN/DOT performance-oriented packaging standards and are marked with the appropriate UN markings on the container.

- The Life Latch Drum must always be used with the correct Life Latch Drum lid to meet the UN/DOT performance-oriented packaging standards.
- **Life Latch Drums are not** UN certified for liquids.

CLOSING INSTRUCTIONS FOR SOLIDS:

NOTE: This container is not UN certified for liquid hazardous materials

Non-Gasketed lid:

Packaging Components required:

- Drum
- Lid (non-gasketed)

To close: Seat lid on top of drum. Rotate lid counter-clockwise until it drops down (this will help prevent cross-threading). Then, rotate lid clockwise until the raised rectangular mark on the lid (see Figure 1) is located to the left of the raised capsule-shaped marks on the left side of the drum trigger (see Figure 2). Continue rotating until the lid is fully tightened (see Figure 3). Inspect lid after application to confirm it is properly seated.

Figure 1

Figure 2

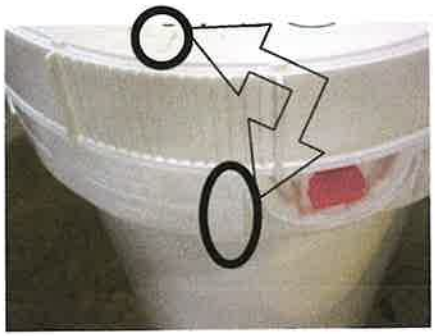

Figure 3

Gasketed Lid:

Packaging Components required:

- Drum
- Lid (gasketed)

To close: Seat lid on top of drum. Rotate lid counter-clockwise until it drops down (this will help prevent cross-threading). Then, rotate lid clockwise until the raised rectangular

mark on the lid (see Figure 1) is located to the left of the raised circular mark on the right side of the drum trigger (see Figure 2). Continue rotating until the lid is fully tightened. Inspect lid after application to confirm it is properly seated.

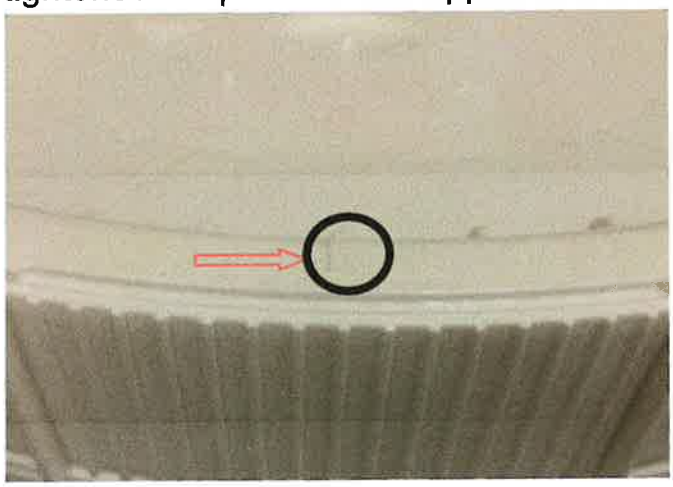

FIGURE 1

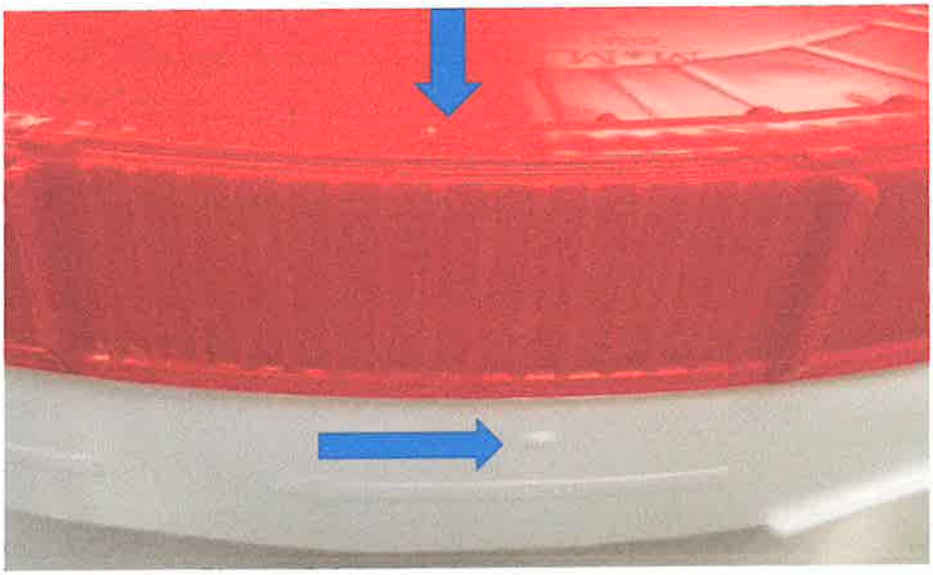

FIGURE 2

Tamper Evident (Slotted) Gasketed Lid:

To close: Seat lid on top of drum. Rotate lid counter-clockwise until it drops down (this will help prevent cross-threading). Then, rotate lid clockwise until the raised rectangular mark on the lid (see Figure 1) is located to the left of the raised circular mark on the right side of the drum trigger approximately ¼" (see Figure 2). Slot in lid should be lined up even to see the trigger through the window (see Figure 3) Inspect lid after application to confirm it is properly seated.

FIGURE 1

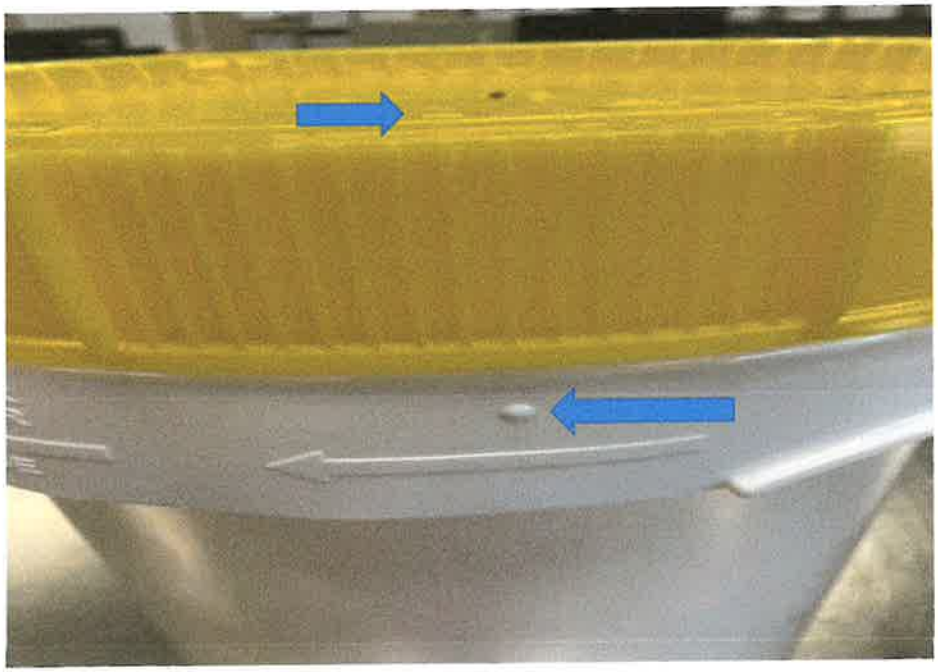

FIGURE 2

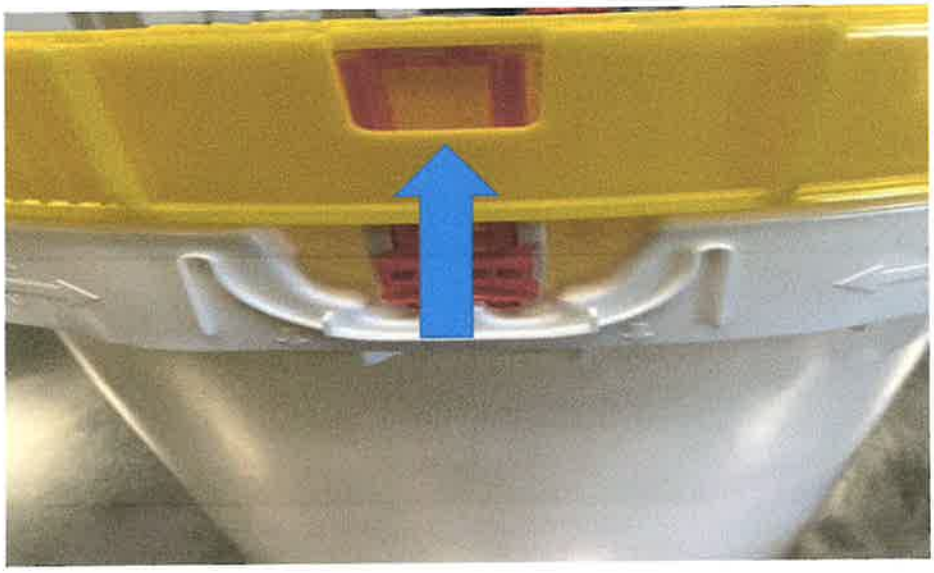

FIGURE 3

Revision History

Rev	Description of Change (s)	Written by:	Approved by:	Date:
2	Changed Gasketed Closing Instructions	Ahron Bobbin	Terry Iker	1/2/2020
3	Added 14948 Mold Number	Ahron Bobbin	Tenna Minwell	11/14/2021
4	Added Tamper Evident Gasketed Lid Closing Instructions. Removed June 2013 on page 1, paragraph 4	Ahron Bobbin	Kim Holley	12/23/2022