UN SOLIDS TEST REPORT

2.5 New Generation Pail with Gasketed Cover

Test Type: Periodic Retest

Additional Package Designs Covered by this report:

N/A

Test Report Number: NG25-16G

Completion Date: 10/4/2026

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 Manager

Samples Prepared By: Christian Honeycutt
QA Lead

M&M Industries, Inc.

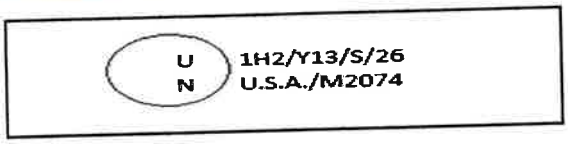
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PACKAGE FILL WEIGHT INFORMATION

Overall package tare weight: 0.97 kg
Filling Substance weight: 12.03 kg
Package UN weight - Gross: 13 kg

26.52 lbs. (Approx.)

UN MARKING



Additional UN Marks covered by this report:

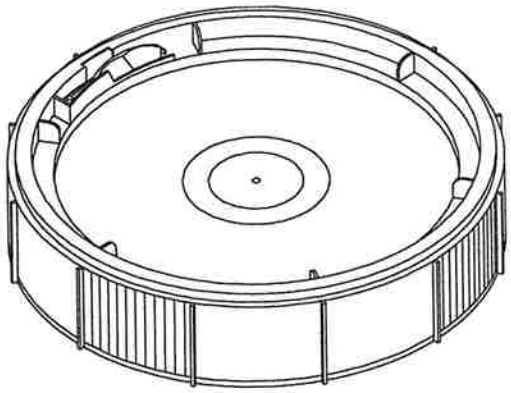


CLOSURE METHOD: PER ATTACHED INSTRUCTIONS

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:	2.0-2.5	
Style:	New Generation	
Fittings:	N/A	
Gasket:	2.0-2.5 NG - .105" - .145" Dia x 28.607" - 29.393" L Neop	
Wall Thickness:	0.075	
Method of Manufacture: Injection Molded		
Material:	High Density Polyethylene	
Mold #	20NGCA	
Tare Weight (kg):	0.32	
Overall Dimensions		
Height:	2.36"	
Top Diameter:	11.17"	
Bottom Diameter:	11.49"	
Thread Dimensions		
Major Diameter:	11.28"	
Minor Diameter:	10.94"	
Markings	"M" www.mmpail.com For Patent Details Reference www.mmpail.com SPI "2" HDPE Recycling Symbol Opening and closing instructions in multiple languages	



M&M Industries, Inc.

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DRUM	
Description	
Pail Size:	2.5
Style:	New Generation
Gasket	NA
Method of Manufacture: Injection Molded	
Material:	High Density Polyethylene
Wall Thickness:	0.075
Mold#	11302
Tare Weight (kg):	0.65
Capacity	
Overflow without cover in place (Water)(kgs):	11.23
Overall Dimensions	
Height:	9.80"
Diameter Below Stacking Lug:	10.09"
Bottom Diameter:	9.46"
Diameter at Curl (M2 Only):	N/A
Thread Dimensions	
Major Diameter:	11.09"
Minor Diameter:	10.69"
Markings	M&M Industries, Inc. Chattanooga, TN 37419 Phoenix, AZ 85043 www.ulitmatepail.com SPI "2" HDPE Recycling Symbol 2.5 U.S. GALS N.R.C. .075 (U N) 1H2/Y13/S/26 U.S.A./M2074 Other Pat Pending China Pat. No. ZI03809142.9 Pat. No. 4,732,288 Pat. No. D504,987S Pat. No. 4,967,926 Pat. No. 6,776,302B2 Pat. No. 6,866,162B2

DRAWINGS



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DROP TEST CALCULATIONS

Maximum Fill Capacity with cover in place(water):	10.92 kg	
95% Of Maximum fill Capacity (water):	10.38 kg	
Overall Package Tare Weight:	0.97 kg	
Actual Filling substance weight:	12.03 kg	26.52 lb.
Package Test Weight:	13 kg	28.66 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) 13 kg

DROP TEST					
Sample Size:	6 Samples/3 per orientation				
Test Contents:	Sand Mesh 2-635				
Additional Test Contents:	Vermiculite	3 Bags	Approx. Weight of Add. Contents	.60KG	
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

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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	/	9.59	=	12.32	-	1	=	11.32

Stack Test Load Calculation (Individual Package)

Gross Mass	X	#3m HS	=	Load	
13	X	11.32	=	147.16	kg
				Appox. 324.43	lbs.

Actual Weight Placed on Pails: 397.5 lbs 180.30 kgs

TEST INFORMATION

Stack Test

Test contents:	Sand mesh size 2-635		
Additional test contents:	Vermiculite	3 bags	Approx. Weight of Add. Contents .60KG
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	7PM	24 hours	7PM	Pass
2	7PM	24 hours	7PM	Pass
3	7PM	24 hours	7PM	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:

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	

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.**

Life Latch New Generation containers/lids are UN certified for air transportation with limitations, depending on product being transported. Refer to 49CFR 172.10, Subpart B for the limitations/restrictions on the specific hazardous material being transported.

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, as of this time (March 2015). 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**.

CLOSING INSTRUCTIONS FOR:

Life Latch® New Generation Containers

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)
6.5 Gallon New Gen	11391,11393,12057, 10778	11074,11386,11390, 11394, 11392,40NGCA,18402, 18403, 22083,22082,40NGCB, 40NGCC	12.87"
5.9 Gallon New Gen	12057	11074,11386,11390, 11394, 11392,40NGCA,18402, 18403, 22083,22082,40NGCB, 40NGCC	12.87"
5.5 Gallon New Gen	15503	11074,11386,11390, 11394, 11392,40NGCA,18402, 18403, 22083,22082,40NGCB, 40NGCC	12.87"
5.0 Gallon New Gen	11387,11389, 10975,13272,13271,40NGPA	11074,11386,11390, 11394,	12.87"

		11392,40NGCA,18402, 18403, 22083,22082,40NGCB, 40NGCC	
3.5 Gallon New Gen	11385,10777,11073,13972	11074,11386,11390, 11394, 11392, 40NGCA,18402, 18403, 22083, 22082,40NGCB, 40NGCC	12.87"
2.5 Gallon New Gen	11302	11303,20NGCA	11.72"
2.0 Gallon New Gen	13189	11303,20NGCA	11.72"
1.25 Gallon New Gen	13905, 18792	13904,18793	8.9"
0.6 Gallon New Gen	13906, 18794	13907,18795	7.03"

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**:

Cover Size	**Gasket Material**	**Gasket Length**	**Gasket Diameter**	**Vent Plug (Optional)**
0.6 Gallon New Gen	Closed Cell Neoprene	18.110" to 18.897"	0.94" -.124"	N/A
1.25 Gallon New Gen	Closed Cell Neoprene	23.510" to 24.470"	.100" to .140"	Rieke Rubber Umbrella Vent PV-21 Part# 02500002
2.0 Gallon New Gen	Closed Cell Neoprene	28.607" to 29.393"	.109" to .141"	Rieke Rubber Umbrella Vent PV-21 Part# 02500002
2.5 Gallon New Gen	Closed Cell Neoprene	28.607" to 29.393	.109" to .141"	Rieke Rubber Umbrella Vent PV-21 Part# 02500002
3.5 through 6.5 Gallon New Gen	Closed Cell Neoprene	33.075" to 34.425"	.134" to .166"	Rieke Rubber Umbrella Vent PV-21 Part# 02500002

UN Markings for Life Latch® New Generation Containers:

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

Container Sizes	UN Rating
0.6 Gallon New Generation	1H2/Y4/S
1.25 Gallon New Generation	1H2/Y6/S
2.0 Gallon New Generation	1H2/Y15/S
2.5 Gallon New Generation	1H2/Y13/S
3.5 Gallon New Generation	1H2/Y19/S
5.0 Gallon New Generation	1H2/Y30/S & 1H2/X11.5/S
5.5 Gallon New Generation	1H2/Y30/S & 1H2/X11.5/S
5.9 Gallon New Generation	1H2/Y30/S & 1H2/X11.5/S
6.5 Gallon New Generation	1H2/Y30/S & 1H2/X11.5/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's 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® New Generation** containers:

- **Life Latch® New Generation** containers are certified to the UN/DOT performance-oriented packaging standards and are marked with the appropriate UN markings on the container.
- The **Life Latch® New Generation** pail must always be used with the correct **Life Latch® New Generation** lid in order to meet the UN/DOT performance-oriented packaging standards.

CLOSING INSTRUCTIONS FOR SOLIDS:

Packaging Components required:

- Appropriately marked UN/DOT certified M&M Industries Pail
- Matching lid size with trigger attached, **gasketed or non-gasketed**

2.0, 2.5, 3.5, 5.0, 5.5, 5.9 and 6.5 gallon NON-GASKETED lid: (Engraved MM on lid)

To close: Seat lid on top of pail (engraved MM on bottom of pail). Rotate lid clockwise until the small window by the trigger (see Ill. 1) is located to the left of the mark (see Ill. 2) on the side of the pail and continue rotating until the lid is fully tightened (see Ill. 4). **Inspect lid after application to confirm it is properly seated.**

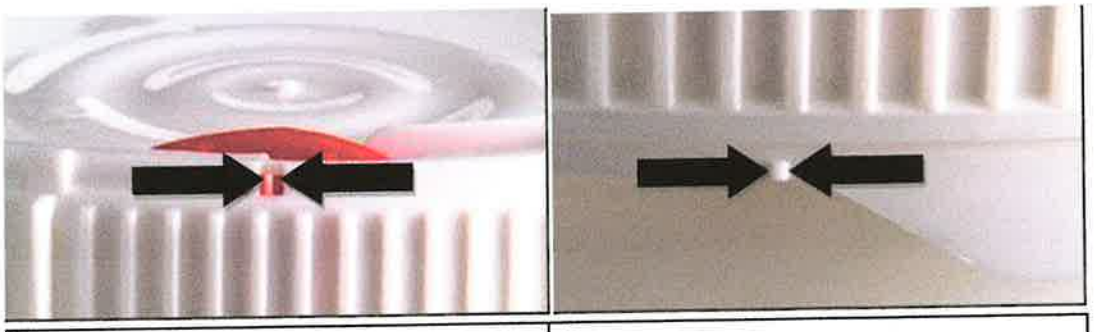


Illustration 1	Illustration 2

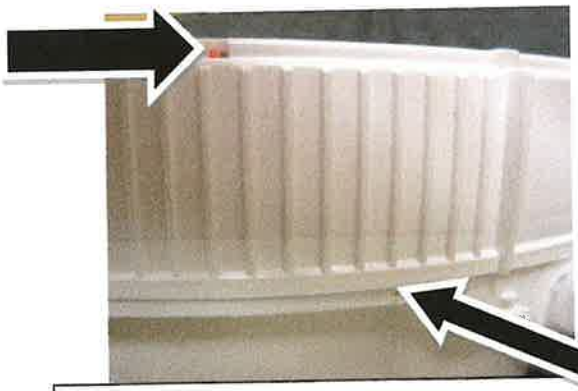


Illustration 4 – Example of lid fully tightened with the window to the left of the mark on pail, non gasketed lid.

2.0, 2.5, 3.5, 5.0-, 5.5-, 5.9- and 6.5-gallon Gasketed lid: (Marked MM on lid):

To Close: Seat lid on top of pail (Marked MM on bottom of pail). Rotate lid clockwise until the small window by the trigger (see Ill. 1) is located to the left of the UN mark (see Ill.3) on the side of the pail and continue rotating until the lid is fully tightened (see Ill.5). **Inspect lid after application to confirm it is properly seated.**

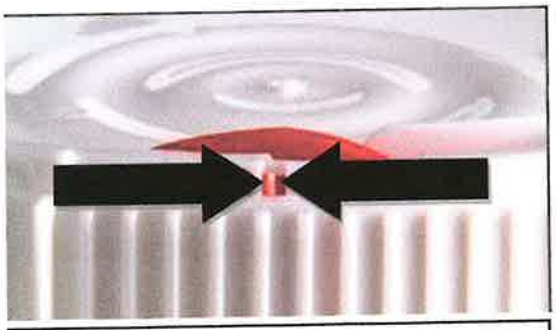


Illustration 1

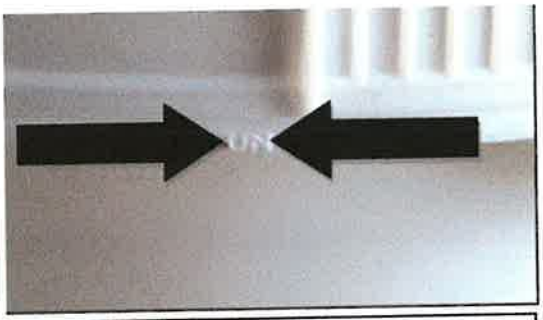


Illustration 2

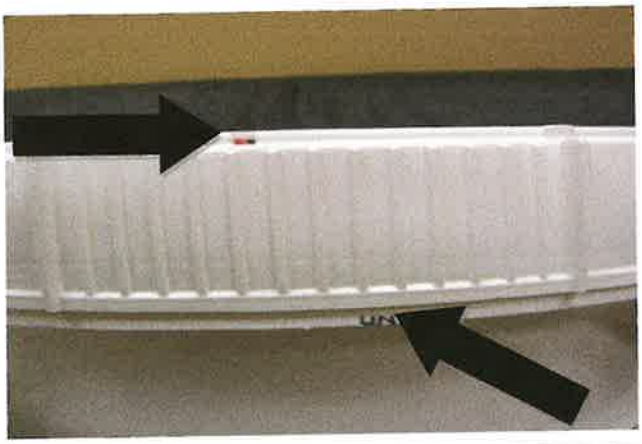


Illustration 5- Example of lid fully tightened, gasketed pail, window to left of UN mark.

0.6 and 1.25 gallon NON-GASKETED lid:

To close: seat lid on top of pail. Rotate lid clockwise until the trigger post (see III.6) is located to the left of the mark (see III. 7) on the side of the pail and continue rotating until lid is fully tightened. **Inspect lid after application to confirm it is properly seated.**

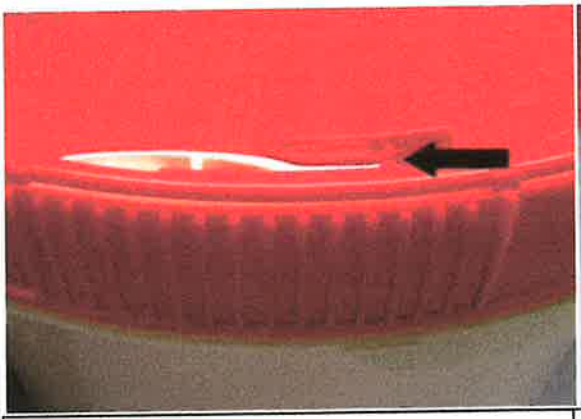


Illustration six

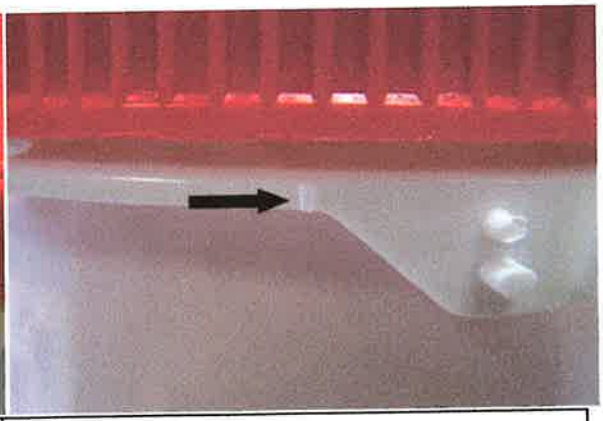


Illustration seven

0.6- and 1.25-gallon GASKETED lid:

To Close: seat lid on top of container. Rotate lid clockwise until trigger post (see Ill. 6) is located to the left of the UN mark (see Ill.8) on the side of the pail and continue rotating until the lid is fully tightened. **Inspect lid after application to confirm it is properly seated.**



Illustration six

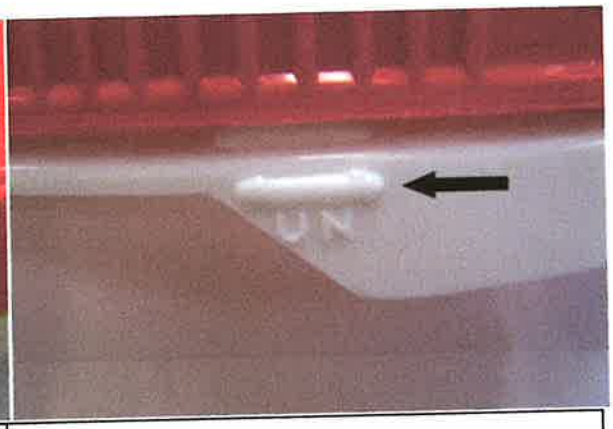


Illustration eight

Revision History

Rev	Description of Change (s):	Written by:	Approved by:	Date:
1	Added Various New Molds	Ahron Bobbin	Tenna Minwell	11/14/2021
2	Added Air Transportation Information	Ahron Bobbin	Tenna Minwell	4/27/2022
3	Added Various New Molds	Ahron Bobbin	Tenna Minwell	6/27/2022
4	Added Various New Molds	Ahron Bobbin	Kim Holley	1/4/2023