Quality Assurance and Regulatory Affairs
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September 1, 2026

UN/DOT Design Type Certification

Report No:	S-1305-AL-260831	**Test Type:**	Periodic Retest
Test Date:	August 31, 2026	**Expiration Date:**	August 31, 2027
Test Facility:	Greif Packaging LLC 4300 West 130th St. Alsip, IL 60803	**Manufacturing Plant:** **Registered Symbol:**	Alsip Sd GBC

Attached are our laboratory test result sheets of the UN/DOT Performance Test on the steel drums that were conducted at the above test facility location.

These sample containers, that were made with the proper components, passed the required tests for the following UN Marking(s):

1A2/Y1.2/100 1A2/Z1.2/100

Thank you and best regards.

John Foryt
Director, Quality Assurance and Regulatory Affairs

This test report is the property of Greif. The know-how, methods and techniques disclosed in this report are confidential information which can only be used by those persons with specific written authorization from Greif.

Quality Assurance and Regulatory Affairs
United Nations/IMO/DOT
Performance Test

DESIGN TYPE Details

Report No:	S-1305-AL-260831
Date Tested:	August 31, 2026
Qualification Date:	July 12, 2019
Drum Style:	OHBR
Drum Type:	Steel Open Head Bolt Ring
UN Certified Marking(s):	1A2/Y1.2/100 1A2/Z1.2/100
Diameter:	14 inches
Overall Height:	27.5 inches
Tare Weight:	18 lbs
Gallon Capacity:	10 - 16 gal
Steel (T/B/B):	.9 / .9 / .9
Hoops / Corrugations:	2 Hoops
Necked-In Top:	No
Necked-In Bottom:	Yes
Tapered:	No
Bag/Tubing/Liner Mil:	None
Seal Top:	None
Composite Bottle:	None
Agitator:	No
End Seam Type:	Double
Chime Bands:	No
Cover Gasket:	EPDM Solid

Additional components - see next page

Drum Construction:
Shell body is formed with longitudinally welded side seam, bottom end is mechanically seamed as indicated to lock bottom and shell together. Top end is mechanically seamed as indicated, or rolled outward to form a curl that allows for the attachment of a cover and locking ring. When top is removable, the cover has a sealing gasket inserted in the channel around the periphery of the cover. The cover is fixed with a locking band. Body or cover may contain fittings that are mechanically inserted as described in this report.

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Performance Test

DESIGN TYPE Details - Additional Components

Report No: S-1305-AL-260831
Date Tested: August 31, 2026
UN Certified Marking(s): 1A2/Y1.2/100 1A2/Z1.2/100

The following components have undergone DOT qualification testing as described in the Original Design Type Result Sheet using the same conditions and procedures, and meet the requirements of §178.601(g)(5):

CLOSING RINGS

Material	Style / Thickness	Bolt Size
Steel	BR 12ga	5/8"
Steel	BR 12ga	5/8"

FITTINGS

Size	Flange Material	Plug Material	Plug Gasket	Location
2"	Steel	Steel	Buna Gasket	Cover
2"	Steel	Nylon	Poly Gsk	Cover
3/4"	Steel	Steel	Buna Gasket	Cover
3/4"	Steel	Nylon	Poly Gsk	Cover
2"	Steel	Steel	Poly Gsk	Cover
3/4"	Steel	Steel	Poly Gsk	Cover
2"	Steel	Nylon	Buna Gasket	Cover
3/4"	Steel	Nylon	Buna Gasket	Cover

Notes:

1. Plug elastomer gaskets include EPDM, BUNA. All other gasket materials should be denoted in the tested design. For specific plug gasket and torque instructions, please refer to your product specific closure instruction on the packing slip.
2. See attached closure notification for torque values for applicable rings on test drum.
3. If torques for components are not included on the attached closure, the components were supplied by the customer for testing. Proper closure of the unit is the responsibility of the shipper.
4. Closures supplied by Greif for this design have been fully qualified throughout the packaging design history, and the closures on this report may not include all qualified closures for this design. Please consult Greif Quality Assurance and Regulatory Affair for specific questions regarding closure qualification. In the event a closure that is not qualified by Greif is substituted by the customer, the certified mark should be voided and removed from the package. It is the responsibility of the customer to ensure that any substituted closures meet the requirement of CFR 49 178.601 and this report cannot be used as evidence of compliance to the certified marking.

Quality Assurance and Regulatory Affairs
United Nations/IMO/DOT
Performance Test

RETEST RESULT SHEET

Report No:	S-1305-AL-260831	
Date Test:	August 31, 2026	
Qualification Date:	July 12, 2019	
Drum Style:	Steel Open Head Bolt Ring	
UN Certified Marking(s):	1A2/Y1.2/100	1A2/Z1.2/100
Maximum Capacity:	64.5 Litres	17 Gallons
Capacity Range:	37.9 - 60.7 Litres	10 - 16 Gallons
Test Mass - Gross with water:	71.4 kg	157.3 Lbs
Tare:	8.2 kg	18.0 Lbs
Net:	63.2 kg	139.3 Lbs

Static Compression Test (49 CFR 178.606)
Package Preparation: Fill to 98% minimum capacity with water
Conditioning: Ambient

Total Mass:	414 kg (3.4 Units x kg each)
Duration:	24 Hours
Results:	3 Units Passed

Drop Test (49 CFR 178.603)
Package Preparation: Fill to 98% capacity minimum with water
Conditioning: Ambient

Drop Height:	1.2 Metres / 47.3 Inches
Diagonal Top, At ring juncture & largest fitting, 180° from the side seam:	3 Units Passed
Diagonal Bottom, On bottom chime at weld seam, 180° from the ring closure:	3 Units Passed

Vibration Test (49 CFR 178.608)
Capable of withstanding, without rupture or leakage, the vibration test procedure in 49 CFR 178.608.

Leakproofness Test (49 CFR 178.604)
Package Preparation: Drum are to be empty for the duration of the test
Conditioning: Ambient

Pressure Applied:	20 kPa / 3.0 psi
Duration:	5 Minutes
Results:	3 Units Passed

Hydraulic (Hydrostatic) Test (49 CFR 178.605)
Package Preparation: Filled with ambient temperature water greater than 12°C.
Conditioning: Ambient

Pressure:	100 kPa / 14.6 psi
Duration:	5 Minutes
Results:	3 Units Passed

TEST RESULTS CERTIFIED BY:
Quality Assurance and Regulatory Affairs

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John Foryt
Director, Quality Assurance and Regulatory Affairs

S71 Greif Packaging LLC

********** BOLT RING CLOSURE NOTIFICATION **********

Pursuant to the requirements of the Department of Transportation in CFR 49 Part 178.2(c)(1), this is your notification of the closing method used for the containers sold to you.

These instructions for closure are based upon the closure methods used to enable these containers to pass the United Nations test requirements as outlined by the UN marking on the package. This method of closure should be used to ensure that your containers have been closed in the same manner as when they were initially tested. To be UN certified, this drum must be closed with the same cover, closing ring, gasket and plugs (if applicable) used for certification. If the drum is purchased without these parts, contact the supplying Greif plant for the correct components.

Your product may adversely affect container materials, bung threads or closing devices. According to CFR 49 Part 173.24(e)(1), it is the responsibility of the person offering a hazardous material for transportation to ensure that the packaging is compatible with their lading.

The closure recommendations do not take into account any hazards present at your facility, or the handling, filling or shipping of your product.

Any container used for packaging hazardous materials should be inspected before filling and shipment. Containers with obvious damage or deterioration should not be filled or shipped.

NOTE: If drums are filled with products outside the marked rating, the warranty is null and void.

Ring Closing Instructions:

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1) Place cover on the drum, making sure that the gasket is in place.
2) Snap the closing ring over the cover and top lip of the drum. Make sure that the ring's lugs point down below the ring. Also, make sure the bottom edge of the closing ring engages under the lip of the drum.
3) Insert the bolt completely through the lug without threads. Next, screw on the jam nut if included. Finally screw the bolt into the threaded lug.
4) An impact gun can be used to start tightening the bolt to approximately 1” gap between the ends of the locking band (not lugs). As the impact gun is being used, tap along the entire perimeter of the ring with a mallet, starting directly across from the bolt.
5) Once a 1” gap is achieved, switch to a calibrated torque wrench and continue tightening the bolt according to the manufacturer's recommended torque and gap listed below. The cover and ring should not spin. The gap between the ends of the locking band (not lugs) need to meet the required gap and the torque of the bolt meets the required torque.
6) If used, tighten the jam nut or locking nut against the lug without threads. This prevents the bolt from backing out of the closing ring.

Plug Closing Instructions:

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1) Place the plugs into the appropriate bung.
2) Turn the plug gently clockwise, making sure that the plug is entering the bung properly.
3) Using a torque wrench, tighten the plug according to the manufacturer's recommended torque below.

Drums with rings and plugs closed in this manner have met the UN performance requirement as specified in the container markings.

November 18, 2024 - rev.2

SCAN QR CODE BELOW TO SEE VIDEO GUIDANCE MATERIALS ON HOW TO CLOSE YOUR PACKAGE

For Item # DRST00324NA20005

Closing Ring	Torque	Gap

12ga Bolt Ring with EPDM Gasket	60	ft-lbs	1/8" to 5/8"

Plugs

Tri-Sure 2" Steel with Poly Irradiated	20	ft-lbs
Tri-Sure 3/4" Steel with Poly Irradiated	16	ft-lbs
Tri-Sure 2" Nylon with Buna	22	ft-lbs
Tri-Sure 3/4" Nylon with Buna	9	ft-lbs

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Your product may adversely affect container materials, bung threads or closing devices. According to CFR 49 Part 173.24(e)(1), it is the responsibility of the person offering a hazardous material for transportation to ensure that the packaging is compatible with their lading.

The closure recommendations do not take into account any hazards present at your facility, or the handling, filling or shipping of your product.

Any container used for packaging hazardous materials should be inspected before filling and shipment. Containers with obvious damage or deterioration should not be filled or shipped.

NOTE: If drums are filled with products outside the marked rating, the warranty is null and void.

Ring Closing Instructions:

---

1) Place cover on the drum, making sure that the gasket is in place.
2) Snap the closing ring over the cover and top lip of the drum. Make sure that the ring's lugs point down below the ring. Also, make sure the bottom edge of the closing ring engages under the lip of the drum.
3) Insert the bolt completely through the lug without threads. Next, screw on the jam nut if included. Finally screw the bolt into the threaded lug.
4) An impact gun can be used to start tightening the bolt to approximately 1” gap between the ends of the locking band (not lugs). As the impact gun is being used, tap along the entire perimeter of the ring with a mallet, starting directly across from the bolt.
5) Once a 1” gap is achieved, switch to a calibrated torque wrench and continue tightening the bolt according to the manufacturer's recommended torque and gap listed below. The cover and ring should not spin. The gap between the ends of the locking band (not lugs) need to meet the required gap and the torque of the bolt meets the required torque.
6) If used, tighten the jam nut or locking nut against the lug without threads. This prevents the bolt from backing out of the closing ring.

Plug Closing Instructions:

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1) Place the plugs into the appropriate bung.
2) Turn the plug gently clockwise, making sure that the plug is entering the bung properly.
3) Using a torque wrench, tighten the plug according to the manufacturer's recommended torque below.

Drums with rings and plugs closed in this manner have met the UN performance requirement as specified in the container markings.

November 18, 2024 - rev.2

SCAN QR CODE BELOW TO SEE VIDEO GUIDANCE MATERIALS ON HOW TO CLOSE YOUR PACKAGE

For Item # DRST00324NA20002

Closing Ring	Torque	Gap

12ga Bolt Ring with EPDM Gasket	60	ft-lbs	1/8" to 5/8"

Plugs

Tri-Sure 2" Steel with Buna	20	ft-lbs
Tri-Sure 3/4" Steel with Buna	13	ft-lbs
Tri-Sure 2" Nylon with Poly Irradiated	22	ft-lbs
Tri-Sure 3/4" Nylon with Poly Irradiated	9	ft-lbs