Quality Assurance and Regulatory Affairs
366 Greif Parkway
Delaware, Ohio 43015
Phone: 740 657 6500

March 4, 2025

UN/DOT Design Type Certification

Report No:	P-404-XX-250304	**Test Type:**	Periodic Retest
Test Date:	March 4, 2025	**Expiration Date:**	March 4, 2026
Test Facility:	Greif – Alsip, IL Technical Center 4300 W 130th Street Alsip, IL 60803		

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

This design is manufactured under the registered symbol GBC at the following locations: Chino, Lockport.

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

1H2/Y105/S 1H2/Z105/S

Thank you and best regards.

Phil Zamperin
Vice President, Quality Assurance and Regulatory Affairs

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

DESIGN TYPE Details

Report No:	P-404-XX-250304
Date Tested:	March 4, 2025
Qualification Date:	January 22, 2015
Drum Style:	O15
Drum Type:	Plastic Open Head Tapered
UN Certified Marking(s):	1H2/Y105/S 1H2/Z105/S
Diameter:	15 inches
Overall Height:	27.8 inches
Tare Weight:	8.7 lbs
Gallon Capacity:	12 - 15 gal
Resin:	GB1
Lifting Ring:	None
Poly Bag:	None

Additional components - see next page

Drum Construction:
Drum is blow molded by forming a molten tube (referred to as the parison or preform) of thermoplastic resin which is placed within a drum mold cavity and inflated with compressed air to take the shape of the cavity, which is then cooled before removing from the mold. If present in the design, the mold has inserted collars that are preformed to shape the molded threaded inserts. When top is removable, the cover will have a sealing gasket inserted in the channel around the periphery of the cover. Covers are fixed with a locking ring.

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DESIGN TYPE Details - Additional Components

Report No: P-404-XX-250304
Date Tested: March 4, 2025
UN Certified Marking(s): 1H2/Y105/S 1H2/Z105/S

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):

COVER

Material	Description	Thickness
Plastic	Rib Plain w/Flowed-in Gasket	.090
Plastic	Rib w/2" w/Flowed-in Gasket	.090
Plastic	Rib w/2" & 3/4" w/Flowed-in Gasket	.090

CLOSING RINGS

Material	Style / Thickness
Steel	Lok-Rim 16ga

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.

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RETEST RESULT SHEET

Report No:	P-404-XX-250304	
Date Test:	March 4, 2025	
Qualification Date:	January 22, 2015	
Drum Style:	Plastic Open Head Tapered	
UN Certified Marking(s):	1H2/Y105/S	1H2/Z105/S
Maximum Capacity:	77.0 Litres	20.3 Gallons
Capacity Range:	45.5 - 56.9 Litres	12 - 15 Gallons
Test Mass - Gross:	105.0 KG	231.5 Lbs
Tare:	4.0 KG	8.9 Lbs
Net:	101.0 KG	222.6 Lbs

Dynamic Compression Test (49 CFR 178.606)
Package Preparation: Empty Package
Conditioning: Ambient

Total Mass:	(4.4 Units * 105 KG Each) 1.5 x Static Load = 694 KG
Results:	3 Units Passed

Drop Test (49 CFR 178.603)
Package Preparation: Drums filled to 95% minimum capacity, with a mixture of materials including sand, metalic dust, sawdust, steel slugs/shot, resin with similar in density sufficient to represent the gross mass package weight indicated in the certification, min grain size 125 micrometers
Conditioning: Container and contents at -18°C (0°F)

Drop Height:	1.2 Metres / 47.3 Inches
Diagonal Top Drop | On closure handle:	3 Units Passed
Flat Drop | On sidewall, On closure handle:	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 (49 CFR 178.604)
Not Applicable

Hydraulic (Hydrostatic) (49 CFR 178.605)
Not Applicable

TEST RESULTS CERTIFIED BY:
Quality Assurance and Regulatory Affairs

Phil Zamperin
Vice President, Quality Assurance and Regulatory Affairs

OPEN HEAD CLOSURE NOTIFICATION

Product Type: P11 **Country:** USA

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. 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 and closing ring used for certification. If drum is purchased without these parts, contact the supplying Greif plant for the correct cover and closing ring.

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.

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.

The closure requirements 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 prior to filling and shipment. Containers with obvious damage or deterioration should not be filled or shipped.

To Close:

1. Covers supplied with the drums must be attached to the drums with lever-action or bolt ring locking bands (ring), as supplied with the drums.

2. Place the plastic cover on the top of the open head plastic drum.
   a. **For lever locking bands** – With the ring in the open position, place the ring on the cover. The ring should be placed on the cover with the lever closing from right to left.

      Starting at one end and working around the circumference of the ring, install the ring such that the channel envelopes the cover edge and top drum chime. Inspect the ring to ensure it is wrapped around the top chime of the drum and the edge of the cover.

      While beginning to close the lever lock, gently tap the ring with a rubber mallet starting on the side opposite the lever. Using constant pressure, slowly close the lever lock while gently tapping around the outside of the ring until the lever lock is flush against the side of the drum. Tapping the ring around the circumference will allow you to close the lever without damage or bending.

      If the lever becomes difficult to close and tapping is not relieving the resistance, stop and review the closure to ensure it is properly seated on the drum and cover. Engage the latch so that it fully allows for the lever and latch to have a seal applied. Apply a seal through the holes to secure the ring.

i. **Steel lever locking bands** – The channel shaped ring is drawn around the cover by the lever closing device and secured in place with a latch device. Snap the latch into the lever until it locks, then apply a sealing wire or other sealing device through the holes on the latch lever.
ii. **Plastic lever locking bands** – The channel shaped ring is drawn around the cover by the lever closing device. The lever closing device is secured in place with the locking tab that protrudes through a slot in the handle. Snap the latch into the lever until it locks, then apply a sealing wire or other sealing device through the holes on the latch lever.

b. **For bolt-ring locking bands** – With the ring in the open position, place the ring around the cover and top lip of the drum with the ring's lugs pointing down.
   i. If one of the lugs is threaded, insert the bolt first through the unthreaded lug, then screw on the jam nut, if included. Then thread the bolt through the threaded lug. Jam nut should be between the lugs.
   ii. If both lugs are unthreaded, insert the bolt completely through both lugs and screw on the jam nut to the outside of the second lug.
   iii. If a shoulder bolt is used, insert the bolt completely through both lugs.

   Starting at one end and working around the circumference of the ring, install the ring such that the channel envelopes the cover edge and top drum chime. Inspect the ring to ensure it is wrapped around the top chime of the drum and the edge of the cover.

   An impact gun can be used to start tightening the bolt to approximately a 1" gap between the ends of the ring (not lugs). As the impact gun is being used, gently tap the ring with a rubber mallet starting on the side opposite of the ring gap and then around the circumference of the ring. Tapping along the entire circumference of the ring will allow you to close and torque the bolt without damage or bending.

   Once a 1" gap is achieved, switch to a calibrated torque wrench and continue tapping along the entire circumference of the ring and tightening the bolt according to the manufacturer's required torque and gap listed below. The gap between the ends of the ring (not lugs) must meet the required gap and the torque of the bolt must meet the required torque. The cover and ring should not spin.

   If used, tighten the jam nut or locking nut against the lug without threads. This prevents the bolt from backing out of the ring.

3. For covers with fittings:
   a. 2" fittings on Tri-Sure covers should be torqued to 20 ft-lbs
   b. 3/4" fittings on Tri-Sure covers should be torqued to 9 ft-lbs
   c. 2" fittings on Container International covers should be torqued to 12.5 ft-lbs
   d. 3/4" fittings on Container International covers should be torqued to 8.3 ft-lbs
   e. 2" fittings on International Precision Components covers should be torqued to 9 ft-lbs
   f. 3/4" fittings on International Precision Components covers should be torqued to 3 ft-lbs

4. Drums closed in this manner have met the UN performance test requirements as specified in the container markings.