

## Testing and Technical Service Office

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September 20, 2005

### UNITED NATIONS/IMO/DOT PERFORMANCE TEST

<b>Test Type:</b>	Annual Retest	<b>Report No:</b>	P-105-MS-090905
<b>Plant:</b>	Mt Sterling, KY	<b>Test Date:</b>	9/9/2005
<b>Drum Code:</b>	GP55	<b>Expiration Date:</b>	9/9/2006

Mr. Doug Reeves,

Attached are our laboratory test result sheets of the U.N. Chapter 9 Performance Test on the Plastic drums that were sent to Greif - Alsip, IL Technical Center.

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

1H1/Y1.9/150/YR

Thank you and best regards.

JG:kf

A handwritten signature in black ink, appearing to read "Joseph Grebe".

Joseph Grebe

Attachments: Photographs (pages: 2)  
Closure Notifications (1)  
Performance Test Result Sheets (1)  
Drawings (1)

TESTING and TECHNICAL SERVICE OFFICE  
UNITED NATION/IMO/DOT  
PERFORMANCE TEST



Date Tested: 9/9/2005  
Report #: P-105-MS-090905  
Original Report Date 3/1/2004  
Closure Notification: FIT-1

RETEST DESIGN TYPE RESULT SHEET

Drum Style: Plastic 1 Pc Tighthead UN Code: 1H1 Packing Group: II  
GBC Code / Drum Type: GP55 / TIGHT HEAD  
Dimensions: O.D.: 577.850 MM / 22.75 In. O.H.: 884.238 MM / 34.8125 In.

UN Certified Marking:  1H1/Y1.9/150/YR  
USA/GBC

Capacity: 208.2 Litres / 55 Gallons  
Test Mass - Gross: 218.2 KG / 481.1 Lbs.  
Tare: 10.2 KG / 22.4 Lbs.  
Net: 208.0 KG / 458.7 Lbs.

Package Preparation: Drums filled with an Antifreeze Solution to a minimum of 98%

Conditioning: Container and contents at -18°C (0°F).

**Drop Tests (49 CFR 178.603)**

Drop Height: 1.90 Metres / 75.0 Inches  
Results Diagonal Top Drop: **3 Drums Passed**  
Results Flat Drop: **3 Drums Passed**

**Vibration Test (49 CFR 178.608)**

Results: Capable of withstanding, without rupture or leakage, the vibration test procedure in 49 CFR 178.608.

**Leakproofness Test (49 CFR 178.604)**

Air Pressure Applied: 3 psi  
Results after 5 minutes: **3 Drums Passed**

**Hydraulic (Hydrostatic) Test (49 CFR 178.605)**

Internal (Hydraulic) Pressure: 150 kPa for a period of 30 minutes  
Results: **3 Drums Passed**

**Dynamic Compression Test (49 CFR 178.606)**

Compression Load: ( 2.4 Drums x 405 KG each )  
1.5 x Static Load = 1,459.4 KG  
Results: **3 Drums Passed**

TEST RESULTS CERTIFIED BY: **GREIF**  
**TESTING and TECHNICAL SERVICES**

Joseph Grebe  
Director, Testing and  
Technical Services

**GREIF**  
**CLOSURE INSTRUCTIONS FOR FITTINGS**

Pursuant to the requirements of the Department of Transportation in CFR 49 Part 178.2(c)(1), 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. If there is any question regarding proper closing methods, contact your local Greif salesperson or manufacturing facility. "Effective until further notice".

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**To Close:**

- 1) Insert and tighten all fittings into their appropriate threaded flanges until snug.
- 2) Using a torque wrench, tighten each fitting to the correct torque. See the list below for correct torques. Torques are based on closure manufacturer's recommendations.
- 3) If this is an open head drum, follow the additional closing instructions for top head.
- 4) Drums closed in this manner have met the UN performance test requirements as specified in the container markings.

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**Fittings:**

<u>Size/Thread</u>	<u>Flange</u>	<u>Plug</u>	<u>Plug Gasket</u>	<u>Torque Foot Lbs</u>
2" BTR	Poly	Poly	EPDM	20
2" NPT	Poly	Poly	EPDM	20

**Drum Code:** GP55

**Report #:** P-105

**Date Tested:** 9/9/2005

**Technician:** GV (Sample drums were closed exactly as described above.)


This UN test certification report form is a sample of the closure notification form. The data on this form reflect the components of the tested sample drums; it details the closing methods followed at the lab for the fittings supplied.

The closure notification form should be completed using information from the actual customer specification, referencing fitting type, manufacturer and gasket, along with the associated torque values for the closures supplied. These values may differ from the sample closing instructions supplied with the UN test certification report.

To obtain this form for your customer service use, contact:

Greif -Testing and Technical Services  
366 Greif Parkway, Delaware, OH 4301  
(740) 657-6565

**PLASTIC DRUM STANDARD PRODUCT DESCRIPTION**

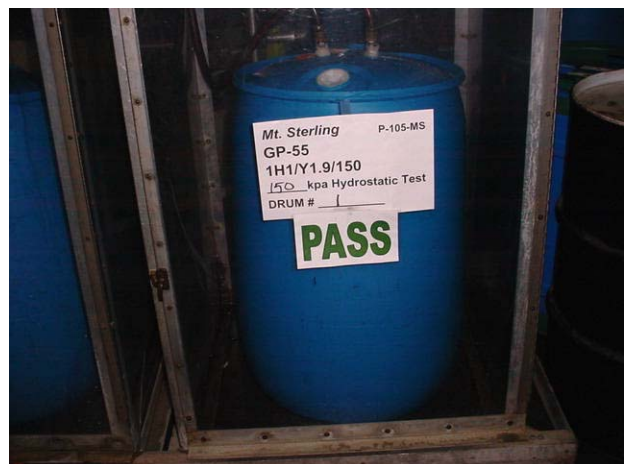
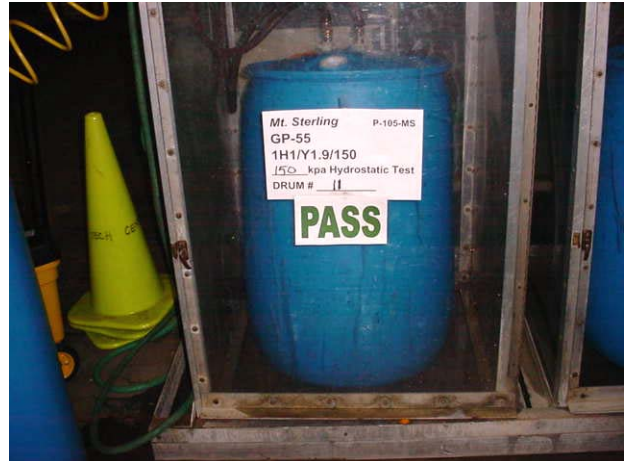
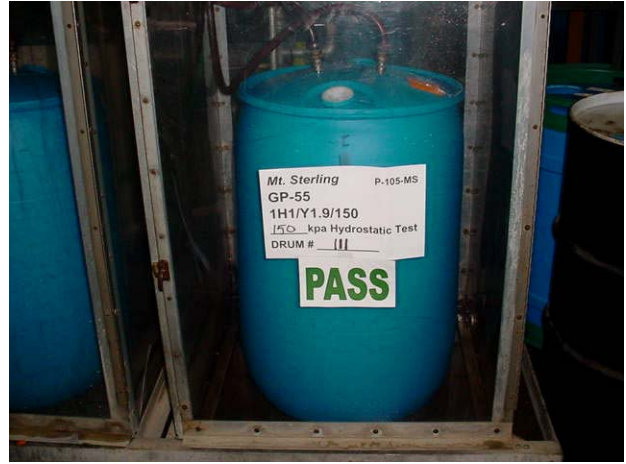
<b>Product Specification Number:</b> PGP55X-XX-XX-XX-XX-XX		<b>Product Name:</b> <b>GP-55</b>	
<b>Regulatory Information:</b>  un 1H1/Y1.9/150 (Test Report P105)  un 1H1/Y1.4/150 with vent (Test Report P104)	<b>Bill of Materials:</b>  <b>Body:</b> GP-55, extrusion blow molded high molecular weight high density polyethylene (HMW-HDPE)  <b>Fittings:</b> 2" BTR and 2" NPS. Vented bungs are available as an option. (BTR = Buttress, NPS = National Pipe Straight thread)	<b>Product Illustration:</b> 	
<b>Nominal Capacity:</b> 55.0 U.S. Gallons	<b>Outage:</b> 2.2 U.S. Gallons	<b>Overall Height:</b> 34.8 inches	<b>Total Weight:</b> 22.4 lbs.
<b>Actual Capacity:</b> 57.2 U.S. Gallons	<b>Outage %:</b> 4.0 %	<b>Body Height:</b> 34.8 inches	<b>Body Weight:</b> 22.2 lbs.
<b>Export Cubes:</b> 10.41 cu. ft.	<b>Nominal O.D.:</b> 23.3 inches	<b>Mid Panel Height:</b> 10.3 inches	<b>Min. Wall Thickness:</b> 0.140 inches
<b>Special Notes:</b> 1) Maximum filling temperature ~160°F. When filled at this maximum temperature drum should be allowed to cool to ambient prior to stacking. Drums filled at elevated temperatures should be vented properly to prevent vacuum formation within the drum. 2) Drums may be stacked 3 high (1+2) maximum with pallets between drums. For nonvented drums, maximum top load on bottom drums not to exceed 2000 lbs each. For vented drums, maximum top load on bottom drums not to exceed 1400 lbs each. Pallets should be of good quality that provides adequate support for plastic drums. 3) Handle with parrotbeak, side grabber, and sling. 4) Provides sump feature under both openings. 5) Fits four wide in standard trailer. 6) Recycle symbol embossed on bottom. 7) Compatibility with hazardous materials as listed in 49CFR are the responsibility of the filler.			
<p>Data, dimensions, and information provided on this document are considered as nominal values for general purpose use in evaluating this product for customer's application. These are not considered as manufacturing specifications. It is the responsibility of the customer or filler to select the appropriate packaging for use or resale, based on all information at their disposal, including specific application, regulatory compliance, product compatibility, transport, storage, and material handling requirements. Regulatory compliance for remanufacture, repair, or reuse of packaging is the responsibility of the reconditioner, customer and filler. Refer to appropriate regulations for packaging filling, transport, and storage requirements with your specific product.</p> <p>WE HEREBY DISCLAIM AND EXCLUDE ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.</p>			

Revision 2 : March 2004

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# Test Result Photographs



9/9/05

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