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**Oak Ridge National Laboratory (ORNL)  
Transportation and Packaging Management (TPM)  
Container Preparation and Filling Instructions/Checklist**

**Type A 7A Drums – 55 Gallon Size, Lever Lock Closure**

**ORNL-PKG-52, Rev. 0**

**Issued: 03/012004**

**Revised:**

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**INSTRUCTIONS:** Complete the activities requested below following the instructions in Section A.

**NOTE 1:** Type A 7A Drums are used for **solid material only**, any particle size (e.g., Form Nos. 1, 2 & 3.)

**NOTE 2:** The maximum gross weight for UN1A2 is 440 kilograms (968 lbs.) for Type A use.

**NOTE 3:** The drum needs to retain its original configuration as purchased.

**NOTE 4:** Complete Type A documentation must be kept on file one (1) year after latest shipment of packaging. It is necessary for the shipper to compare the physical characteristics of the planned load with the test load to show compatibility. See [Attachment A](#).

**A. UN1A2 (55 Gallon Size, Lever Lock Closure)  
Stores Catalog No. 02-112-6555**

**Operating  
Personnel**

1. Visually inspect the drum, lid, and lever lock ring for rust, damage, dents, and defects.
2. Visually inspect the lid gasket for wearing or tears.
3. Report any deficiencies to the Packaging Supervisor.
4. Securely position the contents.
5. Ensure that the gasket is properly fitted into the cover groove.
6. Position the cover on to the drum curl, being careful to ensure that the gasket sits around the bead.
7. Fully open the Toggle Lever and place the expanded ring on to the drum cover with the vertical-skirt hugging the drum body.
8. Slowly close the Toggle Lever so that the out ring engages the cover / body juncture.
9. Downward pressure along with tapping the outside of the ring may assist in an even closure.
10. Once closed for shipment, engage latch to lock the lever into place.
11. Mark the drum to indicate "Radioactive Material, USA DOT 7A TYPE A."



# 7 - Expanded ring being placed on Drum



# 8 - Lever being closed slowly

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### A. UN 1A2 (55 Gallon Size, Lever Lock Closure) Stores Catalog No. 02-112-6555

**Operating  
Personnel**

12. Attach a plain wire seal for nonaccountable materials or a controlled, numbered seal for accountable materials, if required.

Seal wires should be threaded through the lugs in the closing ring or through holes provided in the bolt and/or lugs as appropriate for each container. The seal must be installed so that it has to be broken to open a container.

13. Record the controlled, numbered seal information on the Seal Log Sheet, if applicable.

Prepared by: ORNL TPM Organization

Approved by: \_\_\_\_\_

  
Jeff Shelton, Manager (576-6401)  
ORNL TPM - Packaging Operations

March 1, 2004

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## Attachment A



Testing Facility: Skolnik Engineering Lab  
Chicago, Illinois

7A Type A Drum Qualification Test Report  
SF036

Part#: CQ5508Q  
Date Tested: April 28, 2003

<b>Drum Description:</b>			
Drum Type:	Open Head	Rolling Hoops:	Three
Material:	CRCQ Carbon Steel	Capacity:	55 Gallons
Head Thickness:	1.5mm (0.056")	Ring:	W.C. "C" Lever-Lock, UK
Body Thickness:	1.5mm (0.056")	Nut/Bolt Type:	N/A
Bottom Thickness:	1.5mm (0.056")	Gasket:	EPDM In-Cover "D"
Inside Diameter:	22.5"	Chime Type:	Triple Seam/Round
Overall Height:	34.5"	Fittings:	N/A
Packaging Group:	7A, II	Nuclear Vent:	N/A
Specific Gravity:	1.2	Seam Construction:	Lap
Solids Gross Weight:	440 Kg	Ring gap:	N/A
Hydro Test Pressure:	N/A	Bolt Torque:	N/A

U.N. MARKING: 1A2/X440/S & 1A2/Y1.4/200

**Pre-Testing Conditions:**

Was each drum examined and deemed satisfactory according to section 4.0 of QAP036?	Yes
To what capacity were the drums filled to?	98%
What contents were used during testing?	Sodium Bicarbonate & Steel Scrap

**Test Results:**

Water Spray Test (173.465(b))

Test results prior to Penetration and Free Drop Test.		
Date:	04/25/03	Comments:
Results:	Failed	No traces of water were detected inside the drum
Test results prior to Stacking Test.		
Date:	04/25/03	Comments:
Results:	Passed	No traces of water were detected inside the drum

Penetration Test (173.465(e))

Date:	04/25/03	Comments:
Results of Drops:	Passed	Maximum dent pattern 0.400 x 0.290
Drop #1:	On the edge of cover	
Drop #2:	On center of cover	
Drop #3:	On body	

Free Drop Test (173.465(c))

Date:	04/25/03	Comments:
Results of Drop(s):	Passed	No traces of fluorescent particles were detected by UV light
Drop Height:	1.2m	
Drop #1:	Diag. on Lock Mech.	
Crush Measurement:	13" x 5"	

Stacking test (173.465(d))

Date:	4/25/03 to 4/28/03	Comments:
Stacking Load	5255 Lbs	No visible or measurable damage was detected
Results:	Passed	

This steel drum and similar models meet and/or exceed the UN testing requirements of 49 CFR 178.600-178.606 and 178.608

Test Performed By: [Signature]  
Verified By: [Signature]  
Date: 4/28/2003

Where Commitments are Made... and Kept

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XP 1285/02  
Rev. B

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