

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

UN 55 Gallon Open Head (OH) Stainless Steel Drum

ORNL-CHK-15, Rev. 6

Issued: 5/15/1997

Revised: 8/2/2004

Page 1 of 4

**INSTRUCTIONS:** Complete the activities below following the instructions in Section A. Activities should be checked off as performed. The completed checklist should then be signed by the Operating Personnel completing the checklist and submitted to the Operations Supervisor for approval for shipment.

**NOTE 1:** The 55 gallon open head stainless steel drum is UN marked for filling with either liquid or solid hazardous materials.

**NOTE 2:** The maximum allowable gross weight is embossed (bottom) and marked (side) on each drum in kilograms [ex., 320 kilograms (700 lbs)]. Allowable weight applies to Packaging Groups I, II, or III solid materials.

**NOTE 3:** The maximum allowable specific gravity is embossed (bottom) and marked (side) on each drum [ex., 1.4]. Allowable specific gravity applies to Packaging Groups II and III liquid materials.

**NOTE 4:** The maximum allowable vapor pressure is embossed (bottom) and marked (side) on each drum in kilopascals [ex., 250 kPa (36 psig)]. Allowable vapor pressure applies to Packaging Group II and III liquids.

**NOTE 5:** Drum lids used during in-house storage containing vents/pressure relief devices must be removed and replaced with the original lid, which do not contain such additions, prior to offering for shipment. *The drum needs to retain its original configuration as purchased.* The only exception is the use of a NucFil\* filter (NucFil-013 or NucFil-014) torqued to 15 ft/lbs.

**NOTE 6:** Drums must be closed in accordance with the specific instructions furnished, and tested, by the manufacturer for each specific type/size drum, in order to be in compliance with DOT HazMat regulations. [49 CFR, ¶178.2(c)(1)]

**A. UN 1A2/X (for solids) UN 1A2/Y (for liquids)**  
**55 Gallon OH Stainless Steel Drum**  
**Stores Catalog No. 02-112-6085**

*Note: Items marked (#) are solely generator's/filler's responsibility.*

**Operating  
Personnel**

- \_\_\_\_\_ 1. (#) Inspect the drum to be filled to ensure that it is in good physical condition and that no critical dents/damages, severe corrosion, etc. exist that could cause or develop into a leak during normal storage or in transportation.
- \_\_\_\_\_ 2. (#) Ensure that the material being filled in the drum is compatible with (will not react, soften, or attack) the drum's internal surface.
- \_\_\_\_\_ 3. **IF** the hazardous materials/wastes is solid, **THEN** fill the drum according to the requirements/limitations specified in [NOTE 2](#) above.

\* NucFil is a trademark of Nuclear Filter Technology, Inc.

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Page 2 of 4

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**A. UN 1A2/X (for solids) UN 1A2/Y (for liquids)  
55 Gallon Stainless Steel Drum  
Stores Catalog No. 02-112-6085**

**Operating  
Personnel**

- \_\_\_\_\_ 4. **IF** the hazardous materials/wastes are liquid, **THEN** fill the drum according to the requirements/limitations specified in [NOTE 3](#) and [NOTE 4](#) on page one.
- NOTE:** For liquid hazardous materials/wastes, sufficient outage **MUST BE** left in the drum such that the drum will not completely fill if the contents were to reach a temperature of 55°C (131°F) in storage or transit.
- \_\_\_\_\_ 5. Ensure that the drum lid does not contain vents/relief devices when offered for shipment. Refer to [NOTE 5](#) on page one.
- \_\_\_\_\_ 6. (#)Ensure that the gasket is in place, is in good condition, and is adhered to the drum lid on filled drums *prior* to placing the lid on the filled drum.
- \_\_\_\_\_ 7. Place cover on drum.
- \_\_\_\_\_ 8. Snap closing ring over the cover and top lip of the drum. Ensure that the bolt section of the locking ring is extended below the ring and *not* protruding above the drum lid.
- \_\_\_\_\_ 9. Insert the bolt through the lug without threads, screw on the jam nut, and screw the bolt into the threaded lug.
- \_\_\_\_\_ 10(a). [*Packaging Specialties*<sup>1</sup>] Tap around the closing ring with a heavy rubber mallet/hammer and, at the same time, tighten the bolt with a torque wrench. The bolt should be tightened to 40-foot lb torque. The lid/locking ring must be tight such that it will not rotate/turn.

<sup>1</sup>These "Closing Instructions" are specifically for 55 gallon SS drums manufactured by Packaging Specialties -- Identification marking code on drum side is: M4492. [see [Note 6](#) on page one]

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Page 3 of 4

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**A. UN 1A2/X (for solids) UN 1A2/Y (for liquids)  
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**Operating  
cover  
Personnel**

\_\_\_\_\_ 10(b). [Skolnik<sup>2</sup>] Begin tightening bolt. Downward pressure on the  
will assist the closing process. It will be necessary to hammer the  
circumference of the bolt ring with a rubber mallet while torquing the  
bolt in order to further seat the cover onto the drum. Continue  
torquing and hammering the ring until the ends of the ring reach the  
maximum gap of 0.125" (3.175 mm). The ring ends should not touch  
and the ring must be in a fixed position.

**NOTE:** If the locking ring butts itself when completely tightened, in  
lieu of leaving a cap, the ring is too large or the gasket is too thin --  
making the lid/locking ring unusable. The lid and/or the locking ring  
must then be replaced. Contact TPM if assistance is needed.

\_\_\_\_\_ 11. Tighten the "jam nut" to prevent unintentional loosening of the closure  
during handling/transit; tighten against the lug without threads. ("Jam  
nut" must be located in between the two locking ring lugs.)

\_\_\_\_\_ 12. **IF** generator/filler is responsible for preparing package for transport,  
**THEN**  
Label and mark the drum in accordance with the current  
ORNL/Department of Transportation (DOT) requirements. For  
off-site shipments, contact the ORNL Transportation and  
Packaging Management organization for appropriate DOT marking  
and labeling.

**IF** generator/filler is *not* responsible for preparing package for  
transport, **THEN**

This item is not applicable and should be marked **N/A**.

\_\_\_\_\_ 13. Sign and date the checklist in the appropriate signature block  
verifying that the activities have been performed and the checklist  
completed.

\_\_\_\_\_ 14. Submit this completed checklist to the Operations Supervisor for  
approval for shipment.

<sup>2</sup>These "Closing Instructions" are specifically for 55 gallon SS drums manufactured by Skolnik Industries --  
Identification marking code on drum side is: SDCC. [see [Note 6](#) on page one]

**FOR INTERNAL USE ONLY**

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Page 4 of 4

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**Operations  
Supervisor**

- \_\_\_\_\_ 15. Verify that all defined activities have been successfully completed.
- \_\_\_\_\_ 16. Sign and date the checklist in the appropriate signature block, approving the container for shipment.

**APPROVED FOR SHIPMENT:**

<b>Operating Personnel:</b>	<b>Date:</b>
<b>Operations Supervisor:</b>	<b>Date:</b>

<b>Prepared by:</b> ORNL TPM Organization
<b>Approved by:</b> <u>Jeff Shelton</u> <span style="float: right;"><i>August 2, 2004</i></span>
Jeff Shelton, Manager (576-6401) ORNL TPM - Packaging Operations