

**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. 5

Issued: 5/15/1997

Revised: 5/12/2003

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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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**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*¹] 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.

¹These "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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**Operating
Personnel**

_____ 10(b). [Skolnik Industries²] While tightening the bolt, tap the entire perimeter of the ring using a mallet, starting directly across from the bolt. Tighten the bolt until 55-foot lb of torque is reached. The cover and ring should not spin, but the free ends of the rim should have a 0.125" maximum distance.

For Solids – Tighten bolt while tapping ring, as necessary, until a minimum gap of 1" is achieved and then continue torquing until a minimum torque of 25 ft-lb is achieved, but the ring ends should not touch.

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.

_____ 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.

²These "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]

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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:

Operating Personnel:	Date:
Operations Supervisor:	Date:

Prepared by: ORNL TPM Organization

Approved by: *[signature on file]* May 12, 2003
Jeff Shelton, Manager (576-6401)
ORNL TPM - Packaging Operations