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

Sugarman Cask

ORNL-PKG-01, Rev. 2

Issued: 2/27/1997

Revised: 7/31/2001

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WARNING: Sugarman casks contain radioactive material and should be opened with appropriate precaution, such as in a cell and according to site procedures. Operating personnel must be properly trained.

NOTE 1: The overpack is a Department of Transportation (DOT) Spec 20WC-6 Type B container when used with the internal Type A Sugarman cask. The Sugarman cask should not be used off site without the overpack. The gross weight of the overpack and cask is 4,000 lb. The overpack is 60" square x 56" high.

NOTE 2: The Type A Sugarman cask should be returned with external surface contamination levels of < 20 dpm/100 cm² alpha and < 200 dpm/100 cm² beta-gamma or the user will be responsible for clean-up cost. If empty, internal contamination must meet DOT requirements for empty packaging.

NOTE 3: Return packaging to ORNL Transportation and Packaging Management (TPM) Packaging Operations, One Bethel Valley Road, Building 3036, Oak Ridge, Tennessee, 37831.

NOTE 4: Records may be verified by contacting TPM Packaging Operations at (865) 576-6401.

INSTRUCTIONS: Complete the information requested below and follow the instructions in Sections A through C for Pre-loading, Loading, and Post-Loading.

Cask Serial Number: _____

Material: _____

Other: _____

A. Pre-Loading Instructions

**Loading Facility
Personnel**

1. Ensure that the Sugarman cask has been inspected within six months and has passed inspection.
2. Remove any old shipping or "empty" labels.
3. Check chokers for cask handling and lid removal for proper loading value and certification.
4. Smear the outside of the cask, decontaminate as necessary, and record the results in the space provided below.

_____ alpha

_____ beta-gamma

Readings must be < 20 dpm/100 cm² alpha and < 200 dpm/100 cm² beta-gamma.

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**Loading Facility
Personnel**

A. Pre-Loading Instructions (cont.)

5. Loosen the lid tie-down nuts and remove the lid using the lift device on the lid.
6. Smear the cavity and the lid, and record the results in the space provided below.

_____ alpha

_____ beta-gamma

As a best management practice, efforts should be made to keep the internal contamination levels as low as practical.

7. Visually check the lid closure studs, lockwashers, and nuts for burrs and proper operation.

IF the lid closure studs, lockwashers, and nuts are not operationally adequate, **THEN**

Report the inadequacy to the TPM Packaging Supervisor and record actions taken below.

8. Visually check the gasket for wear or tears.

IF the gasket is worn or has tears, **THEN**

Notify the TPM Packaging Supervisor, replace as required, and record actions taken below.

B. Loading Instructions

**Loading Facility
Personnel**

1. Replace the lid on the carrier leaving the lid tie-down nuts loosened (hand tighten).
2. Position the carrier in the cell with a lift truck by lifting the lugs on the side.
3. Remove the nuts by hand and put aside for use after loading.
4. Remove the lid.

NOTE: Materials in normal form must be placed inside a DOT Specification 2R container inside the Sugarman cask. The 2R container is not required, but may be used, for materials in special form.

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B. Loading Instructions (cont.)

Loading Facility
Personnel

5. Load the internal container into the cavity and replace the lid.
6. Replace the nuts (hand tighten).

C. Post-Loading Instructions

Loading Facility
Personnel

1. Remove the cask from the cell, decontaminate as necessary.

The cask must be cleaned to < 20 dpm/100 cm² alpha and
< 200 dpm/100 cm² beta-gamma.

2. Smear the external container and record the results below.

_____ alpha

_____ beta-gamma

3. Attach the Health Physics radiation tag (ORNL-236) to the container.
4. Check the lid closure studs for burrs or damage from in-cell loading.
5. Torque the lid closure nuts to 35 ft -lb.
6. Load the Sugarman cask into a DOT Spec 20WC-6 overpack.

NOTE: The nuts securing the inner plug and the flanged fire shield should be tight but no specific torque is required.

7. Sign and date the checklist in the appropriate signature block (*page 4 of 4*) verifying that all Loading Facility Personnel activities have been performed.
8. Submit the signed checklist and Form ORNL-28, *Request for Shipment of Radioactive Material*, to the TPM Packaging Supervisor for completion of remaining activities.

TPM
Operator

9. Install a plain wire seal or, for accountable materials, a controlled, numbered seal through the matching holes drilled in the overpack lid and body.

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C. Post-Loading Instructions (cont'd)

**TPM Packaging
Supervisor**

10. Verify that all defined activities have been successfully completed by the Loading Facility Personnel and the TPM Operator.

11. Reference this document as being completed on TPM-R-003, *Radioactive Materials Packaging Certification*.

APPROVED FOR SHIPMENT:

Loading Facility Personnel:	Date:
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Prepared by: ORNL TPM Organization

Approved by: *Jeff Shelton*

July 31, 2001

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