

U.S. NUCLEAR REGULATORY COMMISSION  
CERTIFICATE OF COMPLIANCE  
For Radioactive Materials Packages

1.(a) Certificate Number 9964	1.(b) Revision No. 1	1.(c) Package Identification No. USA/9964/B	1.(d) Pages No. 1	1.(e) Total No. Pages 3
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2. PREAMBLE

- 2.(a) This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.
- 2.(b) The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport, and Transportation of Radioactive Material Under Certain Conditions."
- 2.(c) This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. This certificate is issued on the basis of a safety analysis report of the package design or application—

3.(a) Prepared by (Name and address): E. I. duPont de Nemours & Company Savannah River Plant Aiken, South Carolina 29801	3.(b) Title and identification of report or application: E. I. duPont de Nemours & Company Report No. DPSPU 74-124-3, January 1975.
3.(c) Docket No. 71-9964	

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(a) Packaging

- (1) Model No.: LP-12-1
- (2) Description:

Packaging for large quantities of tritium. The containment vessel is a nominal 1 liter stainless steel bottle fitted with a vacuum valve assembly. The primary containment vessel has a 4 inch O.D., is 5-3/4 inches high and has 1/8-inch thick walls. It is supported by a hold-down assembly within a nominal 12 liter aluminum bucket, with a 10-inch O.D; 18.2-inch height and 0.19-inch walls. The bucket is centered and supported within an 18-gauge, 19-1/4-inch O.D. by 28-5/8-inch steel drum using celotex insulation. The drum is closed using a bolted locking ring. The package gross weight is 140 pounds.

(3) Drawings:

The packaging is fabricated in accordance with DuPont Drawing Nos.: S5-2-7145, Rev. 0; S5-2-7146, Rev. 0; S5-2-7142, Rev. 0; S5-2-7143, Rev. 0; S5-2-7144, Rev. 0; and S4-2-147; and DuPont Detail 146770 and Nuclear Products Company Drawing No. S5-8BG-TSW.

5. (b) Contents

(1) Type and form of material

Tritium gas in mixture with other gases.

(2) Maximum quantity of material per package

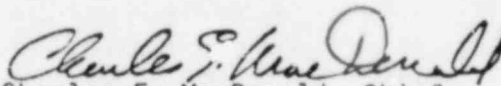
Not more than 1121 cm<sup>3</sup> of tritium at STP (1 atm, 25°C) and a maximum activity of 2881 curies.

6. The maximum internal fill pressure of the primary containment vessel at loading shall not exceed 19.3 psia at 25°C (77°F).
7. Each packaging, before first use, and after the third use shall be leak tested to show that the containment vessel maximum helium leak rate will not exceed  $7 \times 10^{-8}$  atm-cm<sup>3</sup>/sec when the containment vessel is filled to 47 psia and tested in an ambient environment of 14.7 psia. In addition, the primary containment vessel shall have been leak tested as described above, prior to use, within the preceding 12 month period.
8. Before each use the primary containment vessel and closure valve shall be leak tested in accordance with the procedures described below:
- (a) The primary containment vessel is evacuated and a rate of rise determination is made at 50 microns of pressure. The rate of rise shall be less than 1 micron for a 10 minute test period.
- (b) After filling the primary containment vessel with its contents the valve closure shall be determined by a pressure rise test. A rise of 8 microns or less over a 20 minute test period into a cavity with 20 microns pressure shall be considered acceptable.
9. The package authorized by this certificate is hereby approved for use under the general license provisions of Paragraph 71.12(b) of 10 CFR Part 71.
10. Expiration date: October 31, 1982.

REFERENCE

E. I. duPont de Nemours and Company Report No. DPSPU-74-124-3, January 1975.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION



Charles E. MacDonald, Chief  
Transportation Branch  
Division of Fuel Cycle and  
Material Safety

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Date: \_\_\_\_\_