

## U.S. NUCLEAR REGULATORY COMMISSION

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p style="text-align: center;">Licensee</p> <p>1. E. I. du Pont de Nemours and Company, Inc. Experimental Station E322/327A</p> <p>2. P.O. Box 80322 Wilmington, DE 19880-0322</p>	<p>In accordance with the letter received May 20, 2011,</p> <p>3. License number 07-00455-27 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date September 30, 2011</p> <hr/> <p>5. Docket No. 030-03859 Reference No.</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Iron 55</p> <p>B. Cadmium 109</p> <p>C. Americium 241</p> <p>D. Americium 241</p> <p>E. Nickel 63</p>	<p>7. Chemical and/or physical form</p> <p>A. Sealed Sources (Texas Nuclear DWG No. 696-696782)</p> <p>B. Sealed Sources (AEA Model CUC.D1 and CUC.P1; IPL Model XFP-3)</p> <p>C. Sealed Sources (AEA Models AMCL, AMC.P4, and AMRB102219; IPL Model XFB-4; NRD Model A-001)</p> <p>D. Sealed Sources (Amersham Model AMM.4)</p> <p>E. Plated Foils (QSA Global Model NBCD; Isotope Products Laboratories Model NER-004P)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 45 millicuries per source and 500 millicuries total</p> <p>B. 40 millicuries per source and 100 millicuries total</p> <p>C. 15 millicuries per source and 50 millicuries total</p> <p>D. 0.5 microcuries per source and 2.5 microcuries total</p> <p>E. 18 millicuries per source and 180 millicuries total</p>
<p>9. Authorized use:</p> <p>A. through C. To be used for sample analysis in TN Technologies Series 9200 and Niton Xli Series, or equivalent x-ray fluorescence analyzers that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.</p> <p>D. Calibration of the licensee's equipment.</p>		

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- E. To be used for sample analysis in compatible gas chromatography devices that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.

## CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities located at Chestnut Run Plaza, 4417 Lancaster Pike, Wilmington, Delaware, and may be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.
- If the jurisdiction status of a Federal facility within an Agreement State is unknown, the licensee should contact the Federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.
11. Licensed material shall be used by, or under the supervision and in the physical presence of, Keith A. Swain, Nicole D. Walsh, or individuals who have received the training described in the application dated March 27, 2001, and designated in writing by the Radiation Safety Officer.
12. The Radiation Safety Officer for this license is John M. Brisbin.
13. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.

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- E. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- G. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
16. Any cleaning, maintenance, or repair of the analyzers that requires removal of the source from the analyzer shall be performed by Donald F. Frank, or individuals who have received the training described in the application dated March 27, 2001, and have been designated in writing by the Radiation Safety officer, or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
17. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated March 27, 2001 (ML010960566)



For the U.S. Nuclear Regulatory Commission

Date June 7, 2011

By

***Original signed by Dennis R. Lawyer***Dennis R. Lawyer  
Commercial and R&D Branch  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406