

MATERIALS LICENSE

Amendment No. 41

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, 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> <ol style="list-style-type: none"> Union Carbide Chemicals and Plastics Company, Inc. Technical Center P. O. Box 8361 (Bldg. 740) South Charleston, WV 25303 	<p>In accordance with application dated July 21, 1989,</p> <ol style="list-style-type: none"> License number 47-00260-02 is amended in entirety to read: Expiration date March 31, 1995 Docket or Reference No. 030-06652
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<p>6. Byproduct, source, and/or special nuclear material</p> <ol style="list-style-type: none"> Any byproduct material, except alpha emitters, with atomic numbers 1 through 83 inclusive Americium 241 Any byproduct material except alpha emitters, with atomic numbers 1-83 inclusive 	<p>7. Chemical and/or physical form</p> <ol style="list-style-type: none"> Any sealed source registered pursuant to the requirement of 10 CFR 32.210. Any sealed neutron source registered pursuant to the requirements of 10 CFR 32.210. Any 	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <ol style="list-style-type: none"> 300 curies total 25 curies total 1 curie total
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9. Authorized use
- A. & B. For possession, storage and/or use in the following:
- Research and development as defined in Section 30.4(q), 10 CFR Part 30.
 - Maintenance, repair, installation, removal and replacement of sealed sources, operation testing, and servicing of gauging devices including the performance of initial radiation surveys and leak testing of sealed sources.

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9. Authorized use (cont'd)

- (3) In gas chromatographs for sample analysis.
- (4) Instrument calibration.
- (5) Field analysis of level of density.
- (6) Testing steel vessels for carbon buildup (Am-241 only).

c. For possession, storage and/or use in research and development as defined in Section 30.4(q), 10 CFR 30.

CONDITIONS

- 10. Licensed material shall be used only at the licensee's Technical Center, Kanawha Turnpike, South Charleston, West Virginia except the licensed material specified in Subitems 6.A., 6.B., and 6.D. may also 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.
- 11. The Radiation Protection Officer for the activities authorized by this license is Michael L. Green, or J. A. Boggess, alternate RPO.
- 12. Licensed material shall be used by, or under the supervision of, individuals designed by the licensee's Radiation Safety Committee, Michael L. Green, Chairman.
- 13. A. (1) Each sealed source acquired from another person and containing licensed material, other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for contamination and/or leakage before use. In the absence of a certificate from a transferor indicating that a test has been made within 6 months before the transfer, a sealed source received from another person shall not be put into use until tested.
 - (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting materials or 10 microcuries or less of alpha emitting material.
 - (3) Except for alpha sources, the periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage before any use or transfer to another person unless they have been leak tested within 6 months before the date of use or transfer.
- B. Each sealed source containing licensed material, other than hydrogen 3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed 3 months.

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13. (cont'd)

CONDITIONS

- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. If the test required by Subsection A. of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U. S. Nuclear Regulatory Commission, Region II, Division of Radiation Safety and Safeguards, Nuclear Material Safety Section, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323, describing the equipment involved, the test results, and the corrective action taken.

14. A.(1) The source(s) specified in Item 7. shall be tested for leakage and/or contamination at intervals not to exceed 6 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U. S. Nuclear Regulatory Commission, Region II, Division of Radiation Safety and Safeguards, Nuclear Material Safety Section, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

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15. The licensee shall not use licensed material in or on human beings or in field applications where activity is released except as provided otherwise by specified condition of this license.
16. This license does not authorize the possession or use of licensed material at customer facilities or customer temporary job sites, except as specifically authorized under the customer's license.
17. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
19. A. Detector cells containing titanium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
B. Detector cells containing scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 325 degrees Centigrade.
20. This license does not authorize commercial distribution of licensed material.
21. The licensee shall maintain records of information important to safe and effective decommissioning at the location specified in Condition 10 per the provisions of 10 CFR 30.35(g) until the license is terminated by the Commission.
22. 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 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. Applications dated:
 - o March 16, 1984
 - o July 21, 1989

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22. (cont'd)

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B. Letters dated:

◦ July 25, 1989

C. Technical Center Radiological Control Manual (Revised July, 1989)



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

EARL G. WRIGHT

Date MAY 09 1990

By Earl G. Wright

Region II, Nuclear Materials
Safety Section
101 Marietta Street, Suite 2900
Atlanta, GA 30323

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