

BYPRODUCT MATERIAL LICENSE No. 47-260-6 Amendment No. 17
(C67)

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. Name Union Carbide Corporation Chemicals - Olefins - Plastics</p> <p>2. Address Divisions Technical Center South Charleston, West Virginia</p>		<p>In accordance with application dated February 22, 1965,</p> <p>3. License number 47-260-6 is amended in its entirety to read as follows:</p> <p>4. Expiration date March 31, 1967</p> <p>5. Reference No.</p>
---	--	--

<p>6. Byproduct material (element and mass number)</p> <p>A. Hydrogen 3 B. Carbon 14</p> <p>(See page 2)</p>	<p>7. Chemical and/or physical form</p> <p>A. through K. Any</p>	<p>8. Maximum amount of radioactivity which licensee may possess at any one time</p> <p>A. 25 curies B. 250 millicuries</p>
--	--	---

9. Authorized use

A. through M. Research and Development as defined in Section 30.4(k), Title 10, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation."

CONDITIONS

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. Byproduct material may also be used at other laboratories of Union Carbide Corporation throughout the United States, except in Agreement States as defined in Section 30.4(u), Title 10, Code of Federal Regulations, Part 30.
12. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation."
13. Byproduct material shall be used by, or under the supervision of, individuals designated by Radioactive Materials Committee, W. J. Skraba, Chairman.
14. A. Each sealed source acquired from another person and containing byproduct material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage prior to use. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, the sealed source shall not be put into use until tested.

(See page 2)

A-183

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary Sheet

Page 2 of 3 Pages

License Number 47-260-6
(C67)

Continued from page one

Amendment Number 17

6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
C. Phosphorus 32	C. through K. (See page one)	C. 100 millicuries
D. Sulfur 35		D. 150 millicuries
E. Chlorine 36		E. 100 millicuries
F. Calcium 45		F. 100 millicuries
G. Iodine 131		G. 200 millicuries
H. Gold 198		H. 300 millicuries
I. Potassium 42		I. 100 millicuries
J. Krypton 79		J. 50 millicuries
K. Cesium 137		K. 10 millicuries
L. Strontium 90	L. Sealed sources (Radiochemical Centre SIC-9)	L. Three sources not to exceed 10 millicuries each
M. Strontium 90	M. Sealed sources (Jordan BB1010A)	M. Two sources not to exceed 3 microcuries each

CONDITIONS

14. A. continued

Notwithstanding the periodic leak test required by the preceding paragraph, any licensed sealed source containing byproduct material is exempted from periodic leak tests provided the quantity of byproduct material contained in the source does not exceed ten times the quantity specified for the byproduct material in Column II, Schedule B, Section 30.72, 10 CFR 30.

- B. Each sealed source fabricated by the licensee shall be tested for contamination and/or leakage immediately after fabrication. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall repair and/or decontaminate and retest the source. Sealed sources fabricated for distribution and containing byproduct material (with the exception of byproduct material with a half-life not exceeding thirty days, byproduct material in the form of gas, and Iridium 192) shall, in addition to an initial test upon fabrication, be stored for a period of seven days and retested prior to transfer to another person or as otherwise specifically provided for in this license.

(See page 3)

U. S. ATOMIC ENERGY COMMISSION
BYPRODUCT MATERIAL LICENSE
Supplementary SheetPage 3 of 3 PagesLicense Number 47-260-6
(C67)

Continued from page two

Amendment Number 17.

CONDITIONS

14. continued

- C. Each sealed source containing byproduct material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months.
- D. 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.
- E. If the test required by Subsection A. or C. 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 five days of the test with the Director, Division of Materials Licensing, U. S. Atomic Energy Commission, Washington, D. C., 20545, describing the equipment involved, the test results, and the corrective action taken. A copy of such report shall also be sent to the Director, Region II, Division of Compliance, USAEC, 50 Seventh Street, Northeast, Atlanta, Georgia, 30323.
15. Byproduct material shall not be used in or on human beings, in products distributed to the public nor in field applications where such activity is released.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7 and 8 of this license in accordance with statements, representations and procedures contained in his applications dated January 29, 1959; July 30, 1959; August 3, 1959; February 8, 1961; January 24, 1963; and February 22, 1964, and in related documents and amendments as follows:
- A. Administrative instructions entitled "Manual for the Use of Radioactive Materials" dated March 31, 1960, as revised by enclosures to N. H. Ketcham's letter dated August 3, 1960.
- B. Letter dated January 27, 1959 from L. J. Rogers.
- C. Letter dated September 2, 1959 from H. T. Sessions.

For the U. S. Atomic Energy Commission

Original Signed by
Robert E. Brinkmanby Isotopes BranchDivision of Materials Licensing
Washington, D. C. 20545

MAR 22 1965

Date

I. ReB / Howard

REB 2/22/65