

**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, 37, 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>Licensee</p> <p>1. Sigma-Aldrich Manufacturing LLC</p> <p>2. P.O. Box 14508 St. Louis, Missouri 63178</p>	<p>In accordance with letter dated <b>January 12, 2016,</b></p> <p>3. License No. 24-16607-03 is amended in its entirety to read as follows:</p> <p>4. Expiration Date: August 31, 2022</p> <p>5. Docket No. 030-28992 Reference No. 030-11303</p>
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6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Hydrogen-3	A. Bound, non-volatile	A. 5 millicuries
B. Carbon-14	B. Bound, non-volatile	B. 5 millicuries
C. Phosphorous-32	C. Bound, non-volatile	C. 5 millicuries
D. Phosphorous-33	D. Bound, non-volatile	D. 5 millicuries
E. Iodine-125	E. Bound, non-volatile	E. 5 millicuries

9. Authorized Use:
- A. through E. For analytical testing of biochemical products.
- A. and B. For possession incident to decommissioning.

**CONDITIONS**

10. Licensed material in Subitems A. through E. shall be used only at the licensee's facilities located at 3300 South Second Street, St. Louis, Missouri, and 2909 Laclede Avenue, St. Louis, Missouri. Licensed material in Subitems **A. and B.** may be possessed incident to decommissioning of the facilities at **3300 South Second Street, St. Louis, Missouri.**
11. A. The Radiation Safety Officer (RSO) for this license is Thomas K. Spencer.
- B. Licensed materials shall be used by, or under the supervision of:

Authorized User

Thomas K. Spencer

Material and Use

All

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License No.

24-16607-03

Docket or Reference No.

030-28992/030-11303

Amendment No. 11

Authorized UserMaterial and Use

Vernon Reisenbichler

All

Brian Ward

All

Paul Klueh

Phosphorus-32

12. Licensed material shall not be used in or on humans except as provided otherwise by specific condition of this license.
13. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
14. 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 **three** 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.
15. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
16. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash provided:
  - A. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
  - B. A record of each disposal permitted under this License Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
17. This license does not authorize commercial distribution of licensed material.

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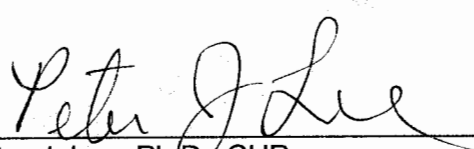
18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern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

- A. Application dated August 20, 2012
- B. Letter dated January 12, 2016 (ML16012A363)
- C. Letter dated **March 29, 2016 (Attachment 3)** (ML16091A266)
- D. Letter received **December 23, 2005 (with attachment)** (ML 020120516)

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

Date JUN 08 2016

By

  
Peter J. Lee, Ph.D., CHP  
Materials Control, ISFSI, and  
Decommissioning Branch  
Region III