

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 style="text-align: center;">Licensee</p> <p>1. Sigma-Aldrich Company</p> <p>2. P.O. Box 14508 St. Louis, Missouri 63178</p>	<p>In accordance with letter dated May 6, 2015,</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. 030-28992/030-11303 Reference No.</p>
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| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Hydrogen-3</p> <p>B. Carbon-14</p> <p>C. Phosphorous-32</p> <p>D. Phosphorous-33</p> <p>E. Iodine-125</p> <p>F. Cobalt-57</p> | <p>7. Chemical and/or physical form</p> <p>A. Bound, non-volatile</p> <p>B. Bound, non-volatile</p> <p>C. Bound, non-volatile</p> <p>D. Bound, non-volatile</p> <p>E. Bound, non-volatile</p> <p>F. Any</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 5 millicuries</p> <p>B. 5 millcuries</p> <p>C. 5 millicuries</p> <p>D. 5 millicuries</p> <p>E. 5 millicuries</p> <p>F. 50 microcuries</p> |
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9. Authorized Use:

- A. through E. For analytical testing of biochemical products.
- F. For possession incident to decommissioning of facilities at 3500 DeKalb Street, St. Louis, Missouri.

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., B. and F. may be possessed incident to decommissioning at 3500 DeKalb Street, St. Louis, Missouri.
11. A. Licensed materials shall be used by, or under the supervision of, Thomas K. Spencer, Vernon Reisenbichler, Ernest Mueller, or Brian Ward.
- B. The Radiation Safety Officer (RSO) for this license is Thomas K. Spencer.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License No.

24-16607-03

Docket or Reference No.

030-28992/030-11303

Amendment No. 09

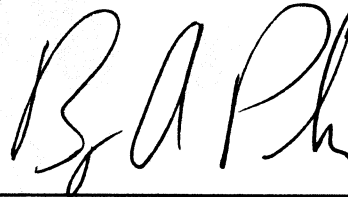
12. Licensed material shall not be used in or on humans except as provided otherwise by specific condition of this license.
13. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
14. The licensee 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 five 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. In addition to the possession limits in item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35 (d) for establishing decommissioning financial assurance.
17. 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.
18. This license does not authorize commercial distribution of licensed material.

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19. 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

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

Date JUN 26 2015

By

Bryan A. Parker
Materials Licensing Branch
Region III