

OFFICIAL USE ONLY - SECURITY RELATED INFORMATION

STATE OF ILLINOIS  
ILLINOIS EMERGENCY MANAGEMENT AGENCY AND OFFICE OF HOMELAND SECURITY  
OFFICE OF NUCLEAR SAFETY  
1035 OUTER PARK DRIVE  
SPRINGFIELD, ILLINOIS 62704  
(217) 785-9947

RADIOACTIVE MATERIAL LICENSE

Pursuant to the Illinois Radiation Protection Act and the rules and regulations in 32 Illinois Administrative Code promulgated thereunder, 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 and transfer radioactive material(s) listed herein; and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Agency now or hereafter in effect and to any conditions specified in the license.

LICENSEE

Microbac Laboratories, Inc.  
Midwest Laboratory  
700 Landwehr Road  
Northbrook, IL 60062

LICENSE NUMBER

IL-01574-01

EXPIRATION DATE

June 30, 2031

AMENDMENT NUMBER

9

Attention: **Michelle L.Z. Carpenter, Ph.D.**  
Laboratory Director

In accordance with electronic mail, with attachments, dated September 5, 2025, License Number IL-01574-01 is amended as follows. Previous amendments are void.

ITEM	RADIONUCLIDE	CHEMICAL and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT
A.	Any radioactive material with atomic numbers 1 thru 82	Liquid or Solid		50 mCi
B.	Any radioactive material with atomic numbers 83 thru 105, except source or special nuclear material	Liquid or Solid	500 $\mu$ Ci	5 mCi
C.	Special nuclear material	Liquid or Solid		5 g
D.	Ra-226	Sealed Source - American Radium Corp., Serial Number 37852		93 $\mu$ Ci
E.	U-238	Liquid		1 mCi

\*  $\mu$ Ci-microcurie; mCi-millicurie; Ci-Curie; MBq-Megabecquerel; GBq-Gigabecquerel; TBq-Terabecquerel; g-gram;  $\mu$ g-microgram; kg-kilogram

APPROVED BY

DATE

PAGE of PAGES

Whitney N. Cox, Manager of Radioactive Materials Licensing

October 27, 2025

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IL 473-0059

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STATE OF ILLINOIS  
IEMA-OHS OFFICE OF NUCLEAR SAFETY  
RADIOACTIVE MATERIAL LICENSE

<u>LICENSEE</u>	<u>LICENSE NUMBER</u>	<u>AMENDMENT NUMBER</u>	<u>EXPIRATION DATE</u>
Microbac Laboratories, Inc.	IL-01574-01	9	June 30, 2031

AUTHORIZED USE:

- A. thru C., and E. For sample analysis and laboratory radiotracer analysis as a service.
- D. For efficiency determination of thermoluminescent dosimeters.

CONDITIONS

1. Radioactive material shall be used only at the licensee's facilities located at 700 Landwehr Road, Northbrook, Illinois in accordance with statements, representations and procedures listed in other conditions of this license.
2. Radioactive material shall be used by, or under the direct supervision of **Michelle L.Z. Carpenter, Ph.D.**
3. The Radiation Safety Officer for this license is **Michelle L.Z. Carpenter, Ph.D.**
4. A. Each sealed source possessed under this license shall be tested for leakage and/or contamination as specified in 32 Ill. Adm. Code 340.410. Tests for leakage and/or contamination shall be performed by persons specifically licensed to provide such services.  
B. Tests for leakage and/or contamination performed by the licensee shall be performed in accordance with procedures described in the application dated May 26, 2015 and letters, with attachments dated December 18, 2015 and March 11, 2016. This license does not authorize this licensee to provide leakage and/or contamination tests as a service for other licensees.
5. The licensee shall not use radioactive material in or on humans or in applications where radioactive material is released to the environment except as provided otherwise by specific condition of this license.
6. Individuals who work in, or whose duties may require them to work in, areas where radioactive materials are used or stored, shall be instructed in the items specified in 32 Ill. Adm. Code 400.120, application dated May 26, 2015, and letter with attachments dated December 18, 2015, prior to performing duties in the area and at least annually thereafter. The licensee shall maintain records of initial and annual training for Agency inspection for 5 years from the date on which the training was given.
7. This license does not authorize distribution to persons exempted from 32 Ill. Adm. Code 330 or licensed pursuant to 32 Ill. Adm. Code 330.30, 330.40, 330.210, or 330.220(b) or equivalent regulations of an Agreement State or the U.S. Nuclear Regulatory Commission.

\*  $\mu$ Ci-microcurie; mCi-millicurie; Ci-Curie; MBq-Megabecquerel; GBq-Gigabecquerel; TBq-Terabecquerel; g-gram;  $\mu$ g-microgram; kg-kilogram

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8. Sealed sources containing radioactive material shall not be opened.
9. In addition to the possession limits stated in License Schedule Items A. and B., the licensee shall further restrict the possession of licensed material to quantities not to exceed the applicable limits referenced in Appendix A to 32 Ill. Adm. Code 326. For combinations of radionuclides, the licensee must maintain a record for Agency inspection demonstrating for all possessed radionuclides that the sum of the ratios of the quantity authorized and the limit established in Appendix A is not greater than one.
10. In accordance with 32 Ill. Adm. Code 620, the licensee shall register with the Agency as a waste generator if any activity conducted under this radioactive materials license results in the generation or possession of low-level radioactive waste as defined in 420 ILCS 20/3. In addition, the licensee must maintain for Agency inspection for a period of five (5) years, all annual reporting records required under 32 Ill. Adm. Code 620 and all records generated in compliance with 32 Ill. Adm. Code 340.1060 (e).
11. Except as specifically provided otherwise by the license, the licensee shall possess and use radioactive material described in all schedules of this license in accordance with statements, representations and procedures contained in, referenced in, or enclosed with the documents listed below. The regulations contained in 32 Ill. Adm. Code: Chapter II, Subchapters b and d shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations. The most recent statements, representations and procedures listed below shall govern if they conflict with previously submitted documents.
  - A. Applications dated May 26, 2015 and February 24, 2023.
  - B. Letters, with attachments, dated December 18, 2015, March 11, 2016, April 20, 2016, May 30, 2023, May 31, 2023 **and October 22, 2025.**
  - C. **Electronic mail, with attachments, dated September 5, 2025.**

WNC:AMR

\*  $\mu$ Ci-microcurie; mCi-millicurie; Ci-Curie; MBq-Megabecquerel; GBq-Gigabecquerel; TBq-Terabecquerel; g-gram;  $\mu$ g-microgram; kg-kilogram

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