

EXPORT LICENSE

NRC FORM 250P
(12/10)



United States of America
Nuclear Regulatory Commission
Washington, D.C. 20555

NRC LICENSE NO.: PXB3.07

LICENSE EXPIRES: December 31, 2020

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Pursuant to the Atomic Energy Act of 1954, as amended, and the regulations issued by the Nuclear Regulatory Commission (NRC) pursuant thereto, and in reliance on statements and representations heretofore made by the applicant/licensee, this license is hereby issued authorizing the licensee to export the byproduct materials listed below, subject to the terms and conditions herein. This license is only valid if the licensee or 'Other Party(ies) to Export' maintain the requisite NRC or Agreement State domestic license(s).

LICENSEE	ULTIMATE FOREIGN CONSIGNEE(S)
Nordion (Canada), Inc. Attn: Jackie Kavanagh 447 March Road Ottawa, Ontario K2K 1X8 Canada APPLICANT'S REFERENCE: February 2, 2011	Nordion (Canada), Inc. 447 March Road Ottawa, Ontario K2K 1X8 Canada
INTERMEDIATE CONSIGNEE(S) IN FOREIGN COUNTRY(IES)	OTHER PARTY(IES) TO EXPORT
NONE	Listed on Page(s) 3 and 4 (Suppliers)

COUNTRY(IES) OF ULTIMATE DESTINATION: Canada

**CONDITIONS, NOTES, AND DESCRIPTIONS OF 10 CFR PART 110, APPENDIX P,
BYPRODUCT AND SOURCE MATERIALS TO BE EXPORTED**
(NOTE: SEE PAGE 2 FOR DEFINITIONS OF CATEGORY 1 AND CATEGORY 2)

Export, to Nordion (Canada) Inc., of Category 1 quantities of Co-60, contained in sealed sources used in irradiators by the gamma processing industry for disposition in Canada, is authorized.

Licensee is responsible for compliance with all applicable export and other domestic regulatory requirements, including all terms and conditions of domestic material possession licenses. Licensee is exempt from the requirement in 10 CFR §110.53(a) to maintain an office within the United States.

Licensee, if not already submitted with your application, must submit information required by 10 CFR §110.32(d) and pertinent documentation required by 10 CFR §110.32(g) at least **24 hours prior to shipment**. See Page 2 for Mandatory Pre-shipment Notifications.

License expiration date is based on established limits. This license replaces PXB3.06 and amends its authority by: 1) changing the name of twelve suppliers; 2) revising one supplier address; and 3) removing one supplier address.

Neither this license nor any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954, as amended.

This license is subject to the right of recapture or control by Section 108 of the Atomic Energy Act of 1954, as amended, and to all of the other provisions of said Acts, now or hereafter in effect and to all valid rules and regulations of the NRC.

THIS LICENSE IS INVALID UNLESS SIGNED BELOW
BY AUTHORIZED NRC REPRESENTATIVE

NAME AND TITLE:

Nader L. Mamish
Nader L. Mamish, Acting Deputy Director
Office of International Programs

DATE OF ISSUANCE:

April 1, 2011

MANDATORY PRE-SHIPMENT NOTIFICATIONS PER 10 CFR PART 110.50(c)

The following Prior Shipment Notifications must be made to both the NRC and, in case of exports, the government of the importing country in advance of each shipment:

Prior Shipment Notifications to the NRC are to be emailed to hoo.hoc@nrc.gov (preferred method) or faxed to the NRC at 301-816-5151. In the subject line of the email or on the fax cover page include: "10 CFR 110.50(c) Notification." For technical assistance, use the same e-mail address or call 301-816-5100.

Prior Shipment Notifications to the government of the importing country must be emailed or faxed to the appropriate foreign government authorities. To locate the point-of-contact for international Prior Shipment Notifications see: <http://www-ns.iaea.org/downloads/rw/imp-export/import-export-contact-points.pdf>. In the subject line of the email or on the fax cover page include: "NOTIFICATION TO THE IMPORTING STATE PRIOR TO SHIPMENT OF CATEGORY 1 OR 2 RADIOACTIVE SOURCES." For technical assistance or for countries not listed, contact the Office of International Programs' export/import staff at 301-415-2344.

Table 1: Appendix P to Part 110-Category 1 and Category 2 Radioactive Material Threshold Limits

Radioactive Material	Category 1		Category 2	
	Terabequerels (TBq)	Curies (Ci) ¹	Terabequerels (TBq)	Curies(Ci) ¹
Americium-241 (Am-241)	60	1,600	0.6	16
Americium-241/Beryllium (Am241/Be)	60	1,600	0.6	16
Californium-252 (Cf-252)	20	540	0.2	5.4
Cunum-244 (Cm-244)	50	1,400	0.5	14
Cobalt-60 (Co-60)	30	810	0.3	8.1
Cesium-137 (Cs-137)	100	2,700	1.0	27
Gadolinium-153 (Gd-153)	1,000	27,000	10.0	270
Iridium-192 (Ir-192)	80	2,200	0.8	22
Plutonium-238 ² (Pu-238)	60	1,600	0.6	16
Plutonium-239/Beryllium ³ (Pu-239/Be)	60	1,600	0.6	16
Promethium-147 (Pm-147)	40,000	1,100,000	400	11,000
Radium-226 ³ (Ra-226)	40	1,100	0.4	11
Selenium-75 (Se-75)	200	5,400	2.0	54
Strontium-90 (Y-90)	1,000	27,000	10.0	270
Thulium-170 (Tm-170)	20,000	540,000	200	5,400
Ytterbium-169 (Yb-169)	300	8,100	3.0	81

Calculation of Shipments Containing Multiple Sources or Radionuclides:

The "sum of fractions" methodology for evaluating combinations of radionuclides being transported is to be used when import or export shipments contain multiple sources or multiple radionuclides. The threshold limit values used in a sum of the fractions calculation must be the metric values (i.e., TBq).

I. If multiple sources and/or multiple radionuclides are present in an import or export shipment, the sum of the fractions of the activity of each radionuclides must be determined to verify the shipment is less than the Category 1 or 2 limits of Table 1, as appropriate. If the calculated sum of the fractions ratio, using the following equation, is greater than or equal to 1.0, then the import or export shipment exceeds the threshold limits of Table 1 and the applicable security provisions of this part apply.

II. Use the equation below to calculate the sum of the fractions ratio by inserting the actual activity of the applicable radionuclides or of the individual sources (of the same radionuclides) in the numerator of the equation and the corresponding threshold activity limit from the Table 1 in the denominator of the equation. Ensure the numerator and denominator values are in the same units and all calculations must be performed using the TBq (i.e., metric) values of Table 1.

R1 = activity for radionuclides or source number 1
R2 = activity for radionuclides or source number 2
RN = activity for radionuclides or source number n

AR1 = activity limit for radionuclides or source number 1
AR2 = activity limit for radionuclides or source number 2
ARN = activity limit for radionuclides or source number n

$$\sum_1^n \left[\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_n}{AR_n} \right] \geq 1$$

¹ The values to be used to determine whether a license is required are given in TBq. Curie (Ci) values are provided for practical usefulness only and are rounded after conversion.

² The limits for exports of Pu-238 and Pu-239/Be can be found in § 110.21.

³ Discrete sources of Radium-226.

OTHER PARTIES TO EXPORT
(Suppliers)

1. Bausch & Lomb
8507 Pelham Road
Greenville, SC 29615
2. Baxter Healthcare Corporation
State Road 721, Km 0.3
Aibonito, Puerto Rico 00705
3. BD Vacutainer Systems
1575 Airport Road
Sumter, SC 29153
4. Becton, Dickinson, and Company
One Becton Circle
Durham, NC 27712
5. Becton, Dickinson, and Company
1852, 10th Avenue
Columbus, NE 68601
6. Becton, Dickinson, and Company
dba BD Medical Systems - Diabetes Care
1329 West Highway 6
Holdrege, NE 68949-0860
7. Becton Dickinson Infusion Therapy Systems, Inc.
150 South 1st Avenue
Broken Bow, NE 68822
8. Cardinal Health 200 Inc.
Medical Products and Services
Convertors Division
One Butterfield Trail
El Paso, TX 79906
9. COVIDIEN (Tyco Healthcare Group LP)
1222 Sherwood Road
P.O. Box 1169
Norfolk, NE 68702-1169
10. Department of the Army Commander
White Sands Missile Range, NM 88002-5158
11. Ethicon Endo Surgery
3801 University Blvd, SE
Albuquerque, NM 87125
12. Food Technology Service, Inc.
502 Prairie Mine Road
Mulberry, FL 33860
13. General Electric Company
Vallecitos Nuclear Center
6705 Vallecitos Road
Sunol, CA 94586
14. Hospira Inc.
Highway 301 North
Rocky Mount, NC 27802-2226
15. Isomedix Operations, Inc.
STERIS Isomedix Services
9 Apollo Drive
Whippany, NJ 07981
16. Isomedix Operations, Inc.
23 Elizabeth Drive
Village of Chester, NY 10918
17. Isomedix Operations, Inc.
4405 Marketing Place
Hamilton/33 Industrial Park
Groveport, OH 43125
18. Isomedix Operations, Inc.
DBA Steris Isomedix Services
Vista del Sol Industrial Park
1435 Isomedix Place
El Paso, TX 79936
19. Isomedix Operations, Inc.
9120 South 150 East
Sandy, UT 84070
20. Pall Corporation
225 Marcus Blvd.
Hauppauge, NY 11788-3799
21. Sandia National Laboratories
Operated for the U.S. Department of Energy by
Sandia Corporation
Albuquerque, NM 87185
22. Sterigenics US., LLC
1148 Porter Avenue
Haw River, NC 27258
23. Sterigenics US., LLC
108 Lake Denmark Road
Rockaway, NJ 07866-4317
24. Sterigenics US., LLC
75 Tilbury Road
Salem, NJ 08079
25. Sterigenics US., LLC
1700 College Boulevard
West Memphis, AR 72301

OTHER PARTIES TO EXPORT
(Suppliers)

- 26. Sterigenics US., LLC
344 Bonnie Circle
Corona, CA 92880
- 27. Sterigenics US., LLC
5900 Obata Way
Gilroy, CA 95020
- 28. Sterigenics International, Inc.
2311 Lincoln Avenue
Hayward, CA 94545
- 29. Sterigenics US., LLC (Location 1)
711 East Cooper Court
Schaumburg, IL 60173-4537

Sterigenics US., LLC (Location 2)
1003 Lakeside Dr.
Gurnee, IL 60031-2489
- 30. Sterigenics US., LLC
10811 Withers Cove Park Drive
Charlotte, NC 28273
- 31. Sterigenics US., LLC
305 Enterprise Drive
Westerville, OH 43081-8827
- 32. Sterigenics US., LLC (Location 1)
3001 Wichita Court
Fort Worth, TX 76140

Sterigenics US., LLC (Location 2)
3125 Wichita Court
Fort Worth, TX 76140
- 33. Sterigenics U.S., LLC
1401 Morgan Circle
Tustin, CA 92780
- 34. STERIS, Inc.
dba STERIS Isomedix Services
1000 S. Sarah Place
Ontario, CA 91764
- 35. STERIS, Inc. (Location 1)
1880 Industrial Drive
Libertyville, IL 60048-2403

STERIS, Inc. (Location 2)
2500 Commerce Drive
Libertyville, IL 60048-9439
- 36. STERIS Isomedix Services
435 Whitney Street
Northborough, MA 01532
- 37. STERIS Isomedix Services
Lot 3, Macco Industrial Park
State Road 690, Km 1.7
Barrio Sabana Hoyos
Vega Alta, Puerto Rico
- 38. STERIS, Isomedix Services
2072 Southport Road
Spartanburg, SC 29306
- 39. Terumo Medical Corporation
950 Elkton Boulevard
Elkton, MD 21921
- 40. 3M Company
601 22nd Avenue South
Brookings, SD 57006
- 41. Tyco Healthcare Group, LP
Tyco/Healthcare/Kendall Division
2010 East International Speedway Blvd.
DeLand, FL 32724
- 42. Tyco Healthcare - Kendall LP
400 Maple Street
Commerce, TX 75428
- 43. Uniformed Services University of the
Health Sciences
Armed Forces Radiobiology Research Institute
8901 Wisconsin Avenue
Bethesda, MD 20889-5603
- 44. University of Massachusetts Lowell
One University Ave
Lowell, MA 01854

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