

# THE HARSHAW CHEMICAL COMPANY

CRYSTAL-SOLID STATE  
DIVISION

1945 EAST 97TH STREET  
CLEVELAND, OHIO 44106  
AREA CODE 216  
721-8300

January 9, 1967  
~~ANNUAL~~

U. S. Atomic Energy Commission  
Division of Material Licensing  
Washington, D. C. 20545

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3. Public Doc. Room

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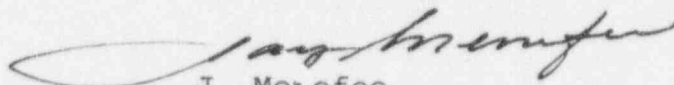
Attention: Director, Material Licensing

Gentlemen:

In compliance with Sec. 30.24n(4), and Sec. 70.39d, 10CFR, we submit the attached listings to report the total quantities of Americium-241 and Plutonium-239 in the form of calibration sources distributed to persons generally licensed under 30.21(e) and 70.19, 10CFR for the year 1966. The distribution listings include three sources at the total activity of  $5.27 \times 10^{-2}$  microcuries of Americium-241 shipped to West Germany and  $1.40 \times 10^{-3}$  microcuries of Americium-241 to Denmark.

If this report lacks any item, please let us know. We shall promptly comply. Please feel free to call collect Area Code 216, 721-8300, Ext. 429.

Very truly yours,



J. Menefee  
Radiation Safety Officer  
Crystal-Solid State Department  
Harshaw Chemical Company  
Division Kewanee Oil Company

JM:md  
Encl:

9702260136 970218  
PDR FOIA  
BABCOK96-529 PDR

DUPLICATED  
DIV. OF COMPLIANCE

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Rep. Prod. No. 156845

# REPORT OF RADIOACTIVE SOURCE DISTRIBUTION

For the Year 1966

ISOTOPE	ACTIVITY ( $\mu$ c)	SOURCE FORM & DESCRIPTION	HARSHAW TYPE & SERIAL NO.	CUSTOMER NAME & ADDRESS	DATE SHIPPED
Am 241	<del>6.2 x 10<sup>-3</sup></del>	Am-241 Doped NaI(Tl)	AM10.5PA12-X	Atlantic Refining Co. 4500 W. Mocking Bird Dallas 9, Texas Lane	Feb. 23, 1966 (May 20, 1966 Remount
	4.7 x 10 <sup>-3</sup>	Hermetically sealed	CH-264		
	4.3 x 10 <sup>-3</sup>	Returned for " (2 Units)	Remount 4-11-66 " CH-263		
Am 241	0.135	Same as Above	AM12S12-X CQ8	Ames Laboratory Iowa State Univ. Room 152, Research Bldg Ames, Iowa 50010	April 19, 1966
<del>Am 241</del>	3.3 x 10 <sup>-3</sup>	Same as Above	AM12S12	Dale Showalter Showalter-Judd Inc. 1806 South Bush Place Seattle 33, Wash.	<del>May 10, 1966</del>
			Returned on 10-14-66		
Am 241	4.4 x 10 <sup>-3</sup>	Am-241 Doped NaI(Tl)	AM4D4X	Dott. Carlo Bemporad Deutsches Electronen Synchrotron (Dest.) Hamburg-Gr Flettbeke Flottbeker Drift 56, West Germany	May 20, 1966 Sched. 8 #866.9920 U.S Lic.
Am 241	4.3 x 10 <sup>-3</sup>	Hermetically Sealed	CQ-36 CQ-37 (2 Units)		
Am 241	5.8 x 10 <sup>-3</sup>	Same as above	AM10.5PA12-X CQ-38	Atlantic Refining Co, 4500 West Mocking Bird Dallas 9, Texas Lane	May 24, 1966

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Am 241	$2.7 \times 10^{-3}$	Am-241 Doped NaI(Tl) Hermetically Sealed	AM12S12 CQ-39	General Atomics Div. of General Dynamics Main Warehouse 10955 John J. Hopkins Dr. San Diego, Ca'if. 92121	May 24, 1966
Am 241	$2.7 \times 10^{-3}$	Same as above	AM12S12 CQ-131	Texas A&M Univ. Activation Analysis Research Lab. College Station, Texas	June 10, 1966
Am 241	$5.14 \times 10^{-3}$	Same as above	AM4D4-X CL-175	San Francisco Bay Naval Shipyard Hunter Point Div. Rec. Officer Bldg. 815 San Francisco, Calif. 94135	June 10, 1966
Am 241	$5.4 \times 10^{-3}$	Same as above	AM2D2-X CQ-40	Univ. of Washington Ray Particles 126593L 40 Physics Hall Seattle, Wash. 98105	June 16, 1966
Am 241	$5.5 \times 10^{-3}$	Same as above	AM12S12-21X CQ-43	I.I.T. Research Institute 3719 South Shields Chicago, Ill. 60609	July 7, 1966
Am 241	$4.6 \times 10^{-3}$	Same as above	CQ-44		

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Pu 239	$2.9 \times 10^{-3}$	Foil Source	PU12S12/5-PP-X	IIT Research Institute 3719 South Shields Chicago, Ill. 60609	July 14, 1966
Pu 239	$2.84 \times 10^{-3}$	Attached to NaI(Tl)	CH-102R		
Pu 239	$3.10 \times 10^{-3}$	Crystal & Hermetically Sealed (3 Units)	CH-407R CA-964R		
Am 241	$1.3 \times 10^{-2}$	Am-241 doped NaI(Tl) Hermetically Sealed	AM8S8/2E-X CQ-45	Pacific Northwest Lab. Richland, Wash. 99352	July 27, 1966
Am 241	$6.9 \times 10^{-3}$	"	" CQ-46 (2 Units)		
Am 241	$4.3 \times 10^{-4}$	Same as above	AM4D4 CQ-47	Boston Univ. Med.Center Div of Radioisotopes 750 Harrison Ave. Boston, Mass.	July 19, 1966
Am 241	$3.0 \times 10^{-2}$	Same as above	AM12S12 CQ-48	The Boeing Co. Boeing Plant #2 Seattle, Washington 98124	July 19, 1966
Am 241	$4.4 \times 10^{-2}$	Same as above	AM754/E CQ-49	Harshaw Chemie, GMBH Wiesenau 2 6 Frankfurt/Main West Germany	July 21, 1966

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Am 241	$6.4 \times 10^{-3}$	Am-241 Doped NaI(Tl) Hermetically Sealed	AM8D8 CQ-50	Battelle-Northwest Pacific Northwest Lab. Richland, Wash. 99352	July 25 1966
Am 241	$5.1 \times 10^{-3}$	Same as above	AM12S12 CQ-51	Phillips Petroleum Co. Atomic Energy Div. 550 Second St. Idaho Falls, Idaho	July 28, 1966
Am 241	$6.9 \times 10^{-3}$	Same as above	AM11S11/H-PP-X CQ-52	Tracerlab Division Lab for Electronics, Inc. 2030 Wright Ave. Richmond, Calif.	July 29, 1966
Am 241	$2.97 \times 10^{-3}$	Same as above	AM2D2-X CQ-55	Mayo Clinics Purchasing Dept. Rochester, Minnesota	Aug.10, 1966
Am 241	$1.18 \times 10^{-1}$	Same as above	AM4PA4-21X CQ-56	Lucius Pitkin, Inc. USAEC Compound Grand Junction, Colorado	Aug.16, 1966

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Am 241	$2.45 \times 10^{-2}$	Am-241 Doped NaI(Tl) Hermetically Sealed	AM4D4 CQ-57	Nuclear Research Corp. E.M. Pollock Street Rd. at Second Street Pike Southampton, Penn.	Aug. 16, 1966
Am 241	$2.78 \times 10^{-2}$	Same as above	AM12SW12-X CQ-58	Packard Instrument Co. Inc. 2200 Warrensville Rd. Downers Grove, Ill. 60515	Aug. 31, 1966
Am 241	$1.27 \times 10^{-2}$	Dry Am-241 inserted and hermetically sealed within NaI(Tl) Detector	AM3PF4 CQ-59 CQ-60  (2 Units)	Welex Division Halliburton Co. Box 1658 1728 Old Spanish Trail Houston 1, Texas	Sept. 2, 1966
Am 241	$1.40 \times 10^{-3}$	Am-241 Doped NaI(Tl) Hermetically sealed	AM12S12L CQ-70	S.C. Metric A/X Bueager 6 Vedvaek, Denmark	Dec. 28, 1966