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STABLE ISOTOPE CUSTOMER LIST AND SUMMARY OF SHIPMENTS — FY 1973

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Contract No. W-7405-eng-26

ISOTOPES DEVELOPMENT CENTER

STABLE ISOTOPE CUSTOMER LIST
AND SUMMARY OF SHIPMENTS — FY 1973

Compiled by

Susan K. Whatley
Isotopes Division

FEBRUARY 1974

NOTICE This document contains information of a preliminary nature and was prepared primarily for internal use at the Oak Ridge National Laboratory. It is subject to revision or correction and therefore does not represent a final report.

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
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UNION CARBIDE CORPORATION
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U.S. ATOMIC ENERGY COMMISSION

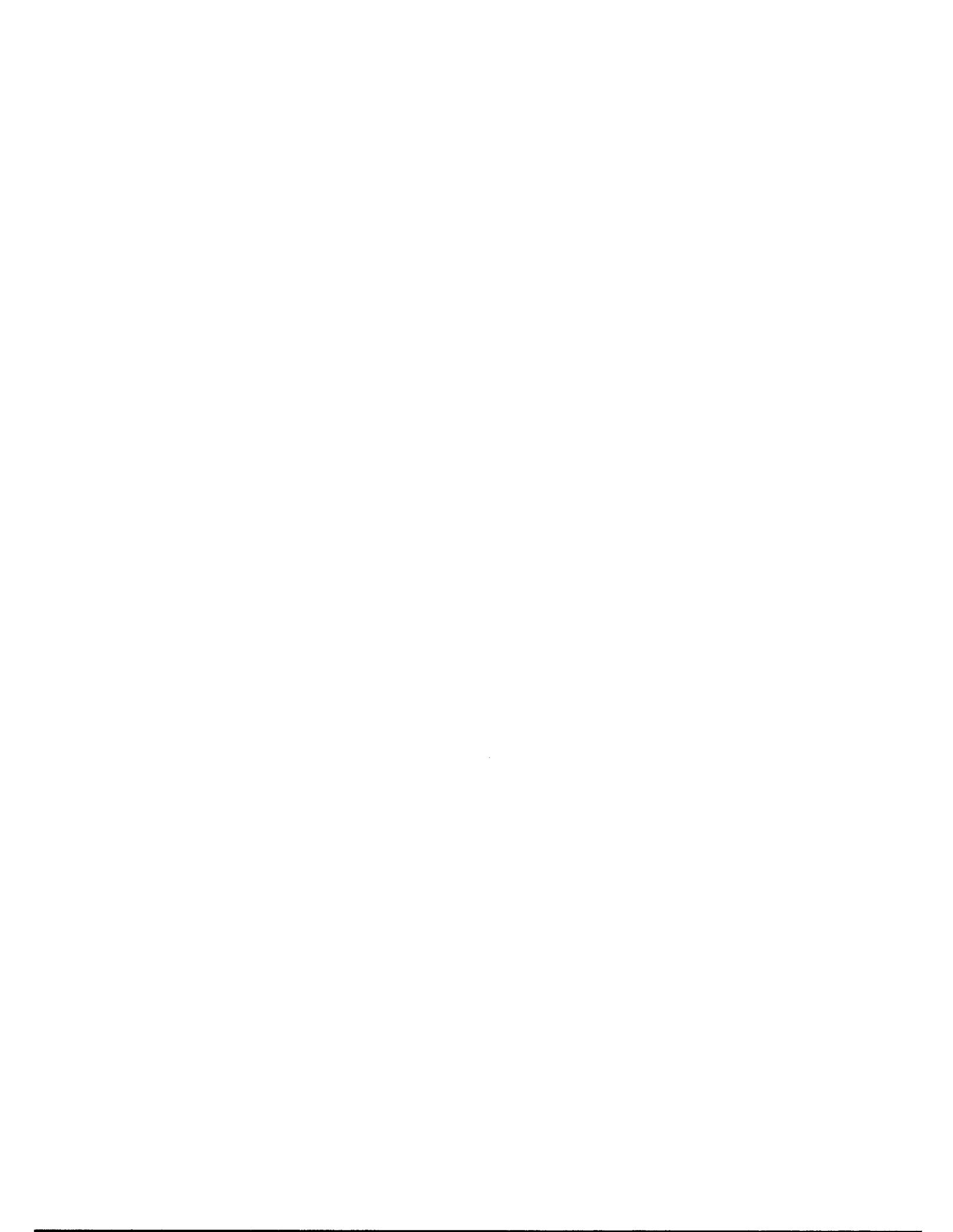


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STABLE ISOTOPE CUSTOMER LIST
AND SUMMARY OF SHIPMENTS — FY 1973

Susan K. Whatley

INTRODUCTION

This is the eighth edition of the ORNL stable isotope customer list which is published as an aid to those concerned with the management of separation and sales of stable isotopes. The information is divided into four sections. The first section is an alphabetical list of domestic and foreign customers with the stable isotopes purchased during the fiscal year.

The second section is an alphabetical list of isotopes, cross-referenced to customer numbers and again divided into the domestic and foreign categories. The third section is an alphabetical list of states and countries, also cross-referenced to customer numbers, the purpose of which is to indicate geographical concentrations of isotope users.

The final section is a tabulation of the shipments, quantities, and dollars for domestic, foreign, and project categories for each isotope; the total figures for each isotope are also included. The total number of stable isotope loan shipments and quantities is listed at the end of the tabulation.

Previous reports published in this series are:

ORNL-TM-1928
ORNL-TM-2038
ORNL-TM-2401
ORNL-TM-2747
ORNL-TM-3146
ORNL-TM-3543
ORNL-TM-3987

I. ALPHABETICAL LIST OF CUSTOMERS, WITH
CONTACTS AND ISOTOPES PURCHASED

A. Domestic

1 Abilene Christian College
Box 8208
Abilene, Texas

 ^{40}Ca , ^{44}Ca , ^{43}Cu , ^{65}Cu , ^{54}Fe , ^{56}Fe ,
 ^{92}Mo , ^{100}Mo , ^{152}Nd , ^{150}Nd , ^{62}Ni ,
 ^{147}Sm , ^{154}Sm , ^{66}Zn , ^{68}Zn , ^{92}Zr

2 Accu-Labs Research, Inc.
9170 West 44th Avenue
Wheat Ridge, Colorado 80033

^{10}B , ^{138}Ba , ^{53}Cr , ^{71}Ga , ^{97}Mo , ^{62}Ni ,
 ^{105}Re , ^{123}Sb , ^{77}Se , ^{30}Si , ^{86}Sr ,
 ^{67}Zn

3 Aerojet Nuclear Company
550 Second Street
P. O. Box 1845
Idaho Falls, Idaho 83401

 ^{109}Ag , ^{116}Cd , ^{151}Eu , ^{69}Ga , ^{41}K ,
 ^{143}Nd , ^{146}Nd , ^{145}Nd , ^{144}Nd , ^{148}Nd ,
 ^{150}Nd , ^{110}Pd , ^{82}Se , SI , ^{88}Sr , SS ,
 ^{130}Te , Tgs , ^{66}Zn , ^{70}Zn

4 Aerospace Corporation
Post Office Box 95085
Los Angeles, California 90045

 ^{35}Cl

5 Alaska, University of
College, Alaska 99735

 ^{30}Si

6 Alfred University
Alfred, New York 14802

 ^{138}Ba , ^{138}Ba , ^{40}Ca , ^{44}Ca , ^{88}Sr ,
 ^{88}Sr

7 American University, The
Washington, D. C. 20016

 $^{\text{41}}\text{Li}$

8 Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439

 ^{11}B , ^{79}Br , ^{43}Ca , ^{46}Ca , ^{48}Ca , ^{114}Cd ,
 ^{50}Cr , ^{63}Cu , ^{65}Cu , ^{54}Fe , ^{56}Fe ,
 ^{72}Ge , ^{76}Ge , ^{191}Ir , ^{193}Ir , ^{61}Li , ^{25}Mg ,
 ^{92}Mo , ^{98}Mo , ^{100}Mo , ^{58}Ni ,
 ^{60}Ni , ^{61}Ni , ^{62}Ni , ^{64}Ni , ^{180}O , ^{204}Pb ,
 ^{207}Pb , ^{196}Pt , ^{89}Rb , ^{96}Ru , SI ,
 ^{147}Sm , ^{86}Sr , ^{88}Sr , SS , ^{120}Te , ^{88}Tl ,
 ^{87}Tl , ^{50}Tl , ^{182}W , ^{186}W , ^{186}W ,
 ^{172}Yb , ^{173}Yb , ^{174}Yb , ^{176}Yb , ^{67}Zn ,
 ^{68}Zn , ^{90}Zr , ^{91}Zr , ^{92}Zr

9 Arizona, University of
Post Office Drawer 4100
Tucson, Arizona 85721

 ^{91}K , SS , ^{66}Zn

10 Arkansas, University of
Fayetteville, Arkansas 72701

 ^{116}Cd , ^{174}Yb

11 Atomics International Division
North American Rockwell Corporation
Post Office Box 309
Canoga Park, California 91304

 ^{10}B , ^{61}Li , Tgs , ^{182}W , ^{186}W

12 Avco Everett Research Labs
2385 Revere Beach Parkway
Everett, Massachusetts 02149

 ^{202}Hg

13 Ball State University
Muncie, Indiana 47306

 ^{201}Hg , SS

14 Bartol Research Corporation
Swarthmore, Pennsylvania 19081

 ^{65}Cu , ^{166}Er , ^{170}Er , SI

15 Battelle Memorial Institute
505 King Highway
Columbus, Ohio 43201

 ^{48}Ca

16 Baychem Corporation
425 Park Avenue
New York, New York 10022

 ^{7}Li

17 Bell Telephone Laboratories
Murray Hill, New Jersey 07971

 ^{113}Cd , ^{35}Cl , ^{57}Fe , ^{72}Ge , ^{73}Ge , ^{74}Ge ,
 ^{204}Pb , ^{207}Pb , ^{208}Pb , SS , Tgs

18 Bendix Corporation, The
2000 East Bannister Road
Kansas City, Missouri 64131

 ^{10}B

19 Bio-Rad Laboratories
32nd and Griffin Avenues
Richmond, California 94804

 ^{63}Cu , ^{45}Cu

20 Brandeis University
415 South Street
Waltham, Massachusetts 02154

 ^{35}Cl

21 Brookhaven National Laboratory
Upton, Long Island, New York 11973

 ^{109}Ag , ^{11}B , ^{135}Ba , ^{46}Ca , ^{48}Ca , ^{140}Ce ,
 ^{142}Ce , ^{50}Cr , ^{162}Dy , ^{163}Dy , ^{164}Dy ,
 ^{151}Eu , ^{153}Eu , ^{56}Fe , ^{57}Fe , ^{58}Fe ,
 ^{155}Gd , ^{157}Gd , ^{201}Hg , ^{115}In , ^{41}K ,
 ^{61}Li , ^{92}Mo , ^{98}Mo , ^{100}Mo , ^{58}Ni ,
 ^{60}Ni , ^{61}Ni , ^{62}Ni , ^{180}O , ^{194}Pt ,
 ^{165}Re , ^{123}Sb , SI , ^{169}Sm , ^{152}Sm , ^{112}Sn ,
 ^{114}Sn , ^{122}Sn , ^{86}Sr , ^{88}Sr , SS , ^{122}Te ,
 ^{123}Te , ^{124}Te , ^{125}Te , ^{126}Te , Tgs , ^{87}Tl ,
 ^{203}Tl , ^{205}Tl , ^{186}W , ^{67}Zn

- 22 Brooklyn College
Bedford Avenue and Avenue H
Brooklyn, New York 11210
 ^{59}Ni , ^{60}Ni
- 23 Brown University
Providence, Rhode Island 02912
 ^{42}Ca , ^{48}Ca , ^{35}Cl , ^{37}Cl
- 24 California Institute of Technology
1201 E. California Boulevard
Pasadena, California 91109
 ^{50}Cr , ^{161}Dy , ^{162}Dy , ^{163}Dy , ^{164}Dy ,
 ^{153}Eu , ^{72}Ge , ^{199}Hg , ^{199}Hg , ^{201}Hg ,
 ^{203}Hg , ^{143}Nd , ^{145}Nd , ^{148}Nd , ^{150}Nd ,
 ^{96}Ru , ^{102}Ru , ^{104}Ru , SI , ^{148}Sm ,
 ^{154}Sm , ^{112}Sn , SS , ^{203}Tl , ^{170}Yb ,
 ^{171}Yb , ^{172}Yb , ^{176}Yb
- 25 California Linear Circuits, Inc.
Solid State Devices Division
12741 Los Nietos Road
Santa Fe Springs, California 90670
 SS
- 26 California State University
125 South Seventh Street
San Jose, California 95192
 ^{63}Cu , ^{65}Cu , ^{59}Ni , ^{60}Ni
- 27 California, University of
400 Sproul Hall
Berkeley, California 94720
 ^{35}Cl , ^{37}Cl , $^{6\text{Li}}$, ^{142}Nd , ^{102}Pd
- 28 California, University of
Davis, California 95616
 ^{164}Dy , ^{166}Er , ^{54}Fe , ^{160}Gd , ^{198}Hg ,
 ^{200}Hg , ^{202}Hg , ^{204}Hg , $^{6\text{Li}}$, $^{7\text{Li}}$,
 ^{59}Ni , ^{96}Ru , ^{75}Se , ^{76}Se , ^{154}Sm ,
 ^{203}Tl , ^{176}Yb
- 29 California, University of
405 Hilgard Avenue
Los Angeles, California 90024
 ^{164}Dy , ^{207}Pb
- 30 California, University of
Santa Barbara, California 93106
 ^{57}Fe
- 31 California, University of
Lawrence Berkeley Laboratory
Berkeley, California 94701
 108 , ^{79}Br , ^{48}Ca , ^{110}Cd , ^{35}Cl , ^{37}Cl ,
 ^{65}Cu , ^{57}Fe , ^{179}Hf , ^{198}Hg , ^{204}Hg ,
 ^{142}Nd , ^{150}Nd , ^{206}Pb , ^{110}Pd , ^{75}Se ,
 ^{76}Se , ^{82}Se , ^{82}Se , SI , ^{148}Sm , ^{149}Sm ,
 ^{116}Sn , ^{118}Sn , ^{120}Sn , ^{122}Sn , ^{124}Sn , SS ,
 ^{124}Te , ^{124}Te , ^{124}Te , ^{130}Te , Tgs , ^{82}Tl ,
 ^{65}Zn
- 32 California, University of
Lawrence Livermore Laboratory
Box 808
Livermore, California 94550
 118 , ^{130}Ba , ^{132}Ba , ^{134}Ba , ^{136}Ba , ^{48}Ca ,
 ^{106}Cd , ^{136}Ce , ^{54}Cr , ^{158}Dy , ^{160}Dy ,
 ^{56}Fe , ^{58}Fe , ^{191}Ir , ^{193}Ir , $^{6\text{Li}}$, $^{7\text{Li}}$,
 ^{176}Lu , ^{59}Ni , ^{60}Ni , ^{207}Pb , ^{108}Pd ,
 ^{110}Pd , ^{87}Rb , ^{36}S , ^{76}Se , ^{77}Se ,
 ^{78}Se , ^{82}Se , SI , ^{112}Sn , ^{124}Sn , ^{88}Sr ,
 ^{180}Ta , ^{120}Te , ^{124}Te , ^{126}Te , ^{130}Te ,
 Tgs , ^{82}Tl , ^{80}Tl , ^{66}Zn
- 33 California, University of
Los Alamos Scientific Laboratory
Post Office Box 1663
Los Alamos, New Mexico 87544
 ^{109}Ag , ^{140}Ce , ^{35}Cl , ^{37}Cl , ^{52}Cr ,
 ^{63}Cu , ^{65}Cu , ^{170}Er , ^{54}Fe , ^{56}Fe ,
 ^{57}Fe , ^{154}Gd , ^{155}Gd , ^{160}Gd , ^{80}K ,
 $^{7\text{Li}}$, ^{92}Mo , ^{100}Mo , ^{62}Ni , ^{64}Ni , ^{204}Pb ,
 ^{102}Pd , ^{32}S , ^{33}S , ^{39}S , ^{121}Sb , ^{123}Sb , SI ,
 ^{28}Si , ^{148}Sm , SS , Tgs , ^{82}Tl , ^{66}Zn ,
 ^{64}Zn , ^{68}Zn , ^{70}Zn
- 34 Cambridge Nuclear Corporation
P. O. Box 528
Princeton, New Jersey 08540
 *1K
- 35 Carnegie-Mellon University
5000 Forbes
Pittsburgh, Pennsylvania 15213
 ^{56}Fe , ^{57}Fe , ^{92}Mo , ^{96}Mo , ^{100}Mo ,
 ^{96}Ru , Tgs , ^{90}Zr , ^{98}Zr
- 36 Carolina Power and Light Company
P. O. Box 1551
Raleigh, North Carolina 27602
 $^{7\text{Li}}$
- 37 Case Western Reserve University
2220 Circle Drive
Cleveland, Ohio 44106
 108
- 38 Chicago, University of
1160 East 55th Street
Chicago, Illinois 60615
 ^{161}Dy , ^{163}Dy , ^{167}Er , ^{143}Nd , ^{145}Nd
- 39 Cincinnati, University of
Cincinnati, Ohio 45221
 ^{124}Te , ^{125}Te , ^{126}Te , ^{182}W
- 40 Clark University
Worcester, Massachusetts 01610
 ^{151}Eu , ^{155}Gd , ^{146}Nd , ^{64}Ni , ^{147}Sm ,
 ^{148}Sm , ^{149}Sm , ^{190}Sm
- 41 Clemson University
Clemson, South Carolina 29632
 ^{57}Fe

- 42 College of William and Mary
Williamsburg, Virginia 23185
⁵⁷Fe, ²⁸Si, ⁴⁶Ti, ⁴⁷Ti, ⁴⁸Ti, ⁴⁹Ti,
⁵⁰Ti, ⁶⁷Zn
- 43 Colorado State University
Fort Collins, Colorado 80521
¹⁰B, ³³Ca, ²⁰⁶Pb, ²⁰⁷Pb, ²⁰⁸Pb
- 44 Colorado, University of
Boulder, Colorado 80302
²⁰⁶Pb, ²⁰⁷Pb, ²⁰⁸Pb, ⁸⁷Rb, ⁸⁷Rb
- 45 Columbia University
Box 6, Low Library
New York, New York 10027
³⁰Ca, ³⁹K, ⁴¹K, ²⁰⁸Pb, ⁸⁷Rb, ⁸⁷Rb,
²⁶Si, ⁹⁰Zr
- 46 Cornell University
Medical College
1300 Park Avenue
New York, New York 10021
¹⁰B
- 47 Cornell University
Ithaca, New York 14850
²⁶Mg
- 48 Diamond Shamrock Corp.
1901 Spring Street
Redwood City, California 94063
⁷Li
- 49 Dow Chemical Company
P. O. Box 191
Midland, Michigan 48640
⁷Li
- 50 Dresser Atlas
Division of Dresser Industries, Inc.
P. O. Box 1407
Houston, Texas 77001
¹⁰B
- 51 Du Pont de Nemours and Company, E. I.
Savannah River Plant
Aiken, South Carolina 29801
¹⁰⁰Mo
- 52 Du Pont de Nemours and Company, E. I.
Wilmington, Delaware 19898
⁵⁷Fe, SS
- 53 Duke University
Durham, North Carolina 27706
¹⁰B, ¹¹B, ⁵⁴Fe, ⁵⁸Fe, ²⁶Mg, ⁵⁸Ni,
⁶⁰Ni, ⁶²Ni, ¹⁸O, ³⁴S, SS, Tgs
- 54 Eastman Kodak Company
Kodak Park Works
Rochester, New York 14650
⁶Li, ¹⁹⁸Pt
- 55 Esso Research and Engineering Company
P. O. Box 642
Linden, New Jersey 07036
⁵⁷Fe
- 56 Florida Power and Light Company
P. O. Box 950
Miami, Florida 33101
⁷Li
- 57 Florida State University
Tallahassee, Florida 32306
⁶Li
- 58 Florida, University of
Gainesville, Florida 32601
¹⁰B, ⁵⁷Fe, ⁸⁷Rb, Tgs
- 59 Ford Motor Company
21500 Oakwood Boulevard
Dearborn, Michigan 48124
³⁵Cl
- 60 Fordham University
East Fordham Road
Bronx, New York 10458
⁵³Cr, ⁵⁷Fe
- 61 Frequency and Time Systems, Inc.
182 Conant Street
Danvers, Massachusetts 01923
⁸⁷Rb
- 62 Gallard-Schlesinger Chemical Manufacturing Corp.
Carle Place
Long Island, New York 11514
²⁰⁸Pb
- 63 Gamma Industries
9320 Travenor
P. O. Box 34526
Houston, Texas 77034
¹⁶⁸Yb
- 64 General Electric Company
Post Office Box 254
San Jose, California 95103
¹³²Ba, ⁴⁰Ca, ⁴⁶Ca, ¹⁶⁰Ce, ⁵⁰Cr, ⁵⁴Fe,
⁵⁸Fe, ⁹⁸Mo, ⁶²Ni, ¹⁸O, ¹⁹²Pt, ⁷⁵Se,
¹¹²Sn, ¹¹⁸Sn, ¹²⁰Sn, ⁸⁸Sr, SS, Tgs,
²⁰³Tl, ¹⁶⁸Yb
- 65 General Radio Company
Route 117
Bolton, Massachusetts 01740
⁸⁷Rb

- 66 General Time Corporation
58 Progress Street
Stamford, Connecticut 06902
 ^{85}Rb , ^{87}Rb
- 67 Georgetown University
3800 Reservoir Road, N.W.
Washington, D. C. 20007
 ^{95}Mo
- 68 Georgia Institute of Technology
225 North Avenue, N.W.
Atlanta, Georgia 30332
 ^{142}Ce , ^{71}Ga , ^{186}W , ^{168}Yb
- 69 Georgia, University of
Athens, Georgia 30601
 ^{11}B , ^{92}Mo , Tgs
- 70 Gulf Energy and Environmental Systems
P. O. Box 608
San Diego, California 92112
 108 , ^{6}Li , Tgs
- 71 Harshaw Chemical Company
Division of Kewanee Oil Company
6801 Cochran Road
Solon, Ohio 44139
 ^{6}Li , ^{7}Li , SS
- 72 Harvard University
Cambridge, Massachusetts 02138
 ^{6}Li , ^{67}Zn
- 73 Hewlett Packard Company
1501 Page Mill Road
Palo Alto, California 94304
 ^{87}Rb
- 74 Howard University
2401 6th Street
Washington, D. C. 20001
 ^{62}Ni
- 75 I. I. T. Research Institute
10 West 35th Street
Chicago, Illinois 60616
Tgs
- 76 ICN-NBCo
26201 Miles Road
Cleveland, Ohio 44128
 108 , ^{114}Cd , ^{140}Ce , ^{158}Dy , ^{162}Er , ^{41}K ,
 ^{176}Lu , ^{146}Nd , ^{108}Pd , ^{85}Rb , ^{87}Rb
- 77 Illinois Institute of Technology
3300 S. Federal Street
Chicago, Illinois 60616
 ^{65}Cu
- 78 Illinois, State of
Bureau of Identification
515 East Woodruff Road
Joliet, Illinois 60432
 ^{88}Sr
- 79 Illinois, University of
203 Administration Building E
Urbana, Illinois 61803
 108 , ^{40}Ca , ^{43}Cu , ^{167}Er , ^{170}Er ,
 ^{57}Fe , ^{95}Mo , ^{143}Nd , ^{145}Nd , 180 ,
 ^{207}Pb , ^{119}Sn
- 80 Indiana State University
6th and Chestnut Streets
Terre Haute, Indiana 47809
 ^{185}Re
- 81 Indiana University
630 W. New York Street
Indianapolis, Indiana 46202
 ^{63}Cu , ^{65}Cu , ^{58}Ni , ^{62}Ni , ^{116}Sn ,
 ^{126}Sn , ^{66}Zn , ^{68}Zn
- 82 Indiana and Michigan Power Company
Donald C. Cook Nuclear Plant
P. O. Box 458
Bridgeman, Michigan 49106
 ^{7}Li
- 83 Institute of Paper Chemistry
Box 1048
Appleton, Wisconsin 54911
 ^{6}Li
- 84 International Business Machines Corporation
Route 52
Hopewell Junction, New York 12533
 ^{30}Si , SS
- 85 Iowa State University
Ames, Iowa 50010
 ^{54}Fe , ^{70}Ge , ^{72}Ge , ^{74}Ge , ^{76}Ge ,
 ^{60}Ni , SI, ^{64}Zn
- 86 Iowa, University of
Iowa City, Iowa 52240
 ^{116}Sn , ^{124}Sn , ^{182}W , ^{183}W
- 87 Johns Hopkins University
Baltimore, Maryland 21218
 ^{166}Er , ^{173}Yb , ^{174}Yb
- 88 Johns Hopkins University
Applied Physics Laboratory
8621 Georgia Avenue
Silver Springs, Maryland 20910
 ^{125}Te
- 89 Kansas State University
Manhattan, Kansas 66502
 ^{24}Mg , ^{26}Mg , 180 , ^{28}Si , ^{30}Si

- 90 Kansas, University of
Lawrence, Kansas 66044
 ^{208}pb
- 91 Kentucky, University of
Lexington, Kentucky 40506
 $^{63}\text{Cu}, ^{177}\text{Hf}, ^{178}\text{Hf}, ^{179}\text{Hf}, \text{SI},$
 $^{90}\text{Zr}, ^{92}\text{Zr}, ^{94}\text{Zr}$
- 92 Knolls Atomic Power Laboratory
Post Office Box 1072
Schenectady, New York 12301
 $^{154}\text{Gd}, ^{155}\text{Gd}, ^{156}\text{Gd}, ^{157}\text{Gd}, ^{158}\text{Gd},$
 $^{160}\text{Gd}, ^{176}\text{Hf}, ^{177}\text{Hf}, ^{178}\text{Hf}, ^{179}\text{Hf},$
 $^{180}\text{Hf}, \text{SI}$
- 93 LND Incorporated
3230 Lawson Boulevard
Oceanside, New York 11672
 118
- 94 Ledoux and Company
359 Alfred Avenue
Teaneck, New Jersey 07666
 $^{109}\text{Ag}, ^{153}\text{Eu}, ^{71}\text{Ga}, ^{97}\text{Mo}, ^{110}\text{Pd},$
 $^{199}\text{Pt}, ^{185}\text{Re}, ^{117}\text{Sn}, ^{125}\text{Te}, ^{87}\text{Ti},$
 $^{183}\text{W}, ^{91}\text{Zr}$
- 95 Lockheed Aircraft Corporation
Post Office Box 504
Missiles and Space
Sunnyvale, California 94088
 $^{44}\text{Ca}, ^{113}\text{In}, \text{SI}, \text{SS}, \text{Tgs}$
- 96 Louisiana State University
Nuclear Science Center
Baton Rouge, Louisiana 70803
 $^{193}\text{Ir}, ^{184}\text{W}$
- 97 Louisville, University of
Belknap Campus
Louisville, Kentucky 40208
 ^{57}Fe
- 98 Lowell Technological Institute
Lowell, Massachusetts 01854
 $^{107}\text{Ag}, ^{109}\text{Ag}, ^{57}\text{Fe}, ^{77}\text{Se}$
- 99 Mallinckrodt Chemical Works
3600 N. Second Street
St. Louis, Missouri 63160
 $^{37}\text{Cl}, ^{75}\text{Se}$
- 100 Marquette University
1120 W. Michigan Street
Milwaukee, Wisconsin 53233
 $^{35}\text{Cl}, ^{37}\text{Cl}, ^{50}\text{Cr}, ^{53}\text{Cr}, ^{63}\text{Cu}, ^{65}\text{Cu},$
 $^{70}\text{Ge}, ^{74}\text{Ge}, ^{6}\text{Li}, ^{24}\text{Mg}, ^{26}\text{Mg}, ^{92}\text{Mo},$
 $^{100}\text{Mo}, ^{58}\text{Ni}, ^{62}\text{Ni}, ^{104}\text{Pd}, ^{110}\text{Pd},$
 $^{116}\text{Sn}, ^{124}\text{Sn}, ^{66}\text{Zn}, ^{68}\text{Zn}$
- 101 Maryland, University of
College Park, Maryland 20742
 $^{108}\text{B}, ^{118}\text{B}, ^{155}\text{Gd}, ^{156}\text{Gd}, ^{160}\text{Gd},$
 $^{76}\text{Ge}, ^{6}\text{Li}, ^{58}\text{Ni}, ^{64}\text{Ni}, ^{186}\text{Os},$
 $^{208}\text{Pb}, ^{104}\text{Ru}, ^{82}\text{Se}, \text{SI}, ^{120}\text{Sn}, \text{SS},$
 $\text{Tgs}, ^{90}\text{Zr}$
- 102 Massachusetts General Hospital
Isotope Laboratory
Boston, Massachusetts 02114
 ^{48}Ca
- 103 Massachusetts Institute of Technology
Box 69
Cambridge, Massachusetts 02139
 $^{135}\text{Ba}, ^{167}\text{Er}, ^{151}\text{Eu}, ^{153}\text{Eu}, ^{54}\text{Fe},$
 $^{199}\text{Os}, ^{110}\text{Pd}, ^{150}\text{Sm}, \text{Tgs}$
- 104 Massachusetts, University of
Amherst, Massachusetts 01002
 ^{6}Li
- 105 Medi-Physics, Inc.
5855 Christie Avenue
Emeryville, California 94608
 $^{112}\text{Cd}, ^{116}\text{Sn}, ^{122}\text{Te}, ^{66}\text{Zn}, ^{68}\text{Zn}$
- 106 Medi-Physics, Inc.
900 Durham Avenue
South Plainfield, New Jersey 07080
 ^{66}Zn
- 107 Metropolitan Dade County
Court House on Flagler Street
Miami, Florida 33131
 ^{112}Cd
- 108 Michigan State University
East Lansing, Michigan 48823
 $^{107}\text{Ag}, ^{109}\text{Ag}, ^{44}\text{Ca}, ^{106}\text{Cd}, ^{136}\text{Ce},$
 $^{142}\text{Ce}, ^{163}\text{Dy}, ^{164}\text{Dy}, ^{170}\text{Er}, ^{54}\text{Fe},$
 $^{57}\text{Fe}, ^{160}\text{Gd}, ^{73}\text{Ga}, ^{76}\text{Ge}, ^{200}\text{Hg},$
 $^{24}\text{Mg}, ^{25}\text{Mg}, ^{26}\text{Mg}, ^{92}\text{Mo}, ^{104}\text{Pd}, ^{185}\text{Re},$
 $^{208}\text{Sl}, ^{144}\text{Sm}, ^{152}\text{Sm}, \text{Tgs}, ^{162}\text{W}, ^{172}\text{Yb},$
 $^{173}\text{Yb}, ^{174}\text{Yb}, ^{176}\text{Yb}$
- 109 Michigan, University of
Ann Arbor, Michigan 48104
 $^{44}\text{Ca}, ^{112}\text{Cd}, ^{35}\text{Cl}, ^{162}\text{Dy}, ^{164}\text{Dy},$
 $^{166}\text{Er}, ^{168}\text{Er}, ^{170}\text{Er}, ^{56}\text{Fe}, ^{57}\text{Fe},$
 $^{199}\text{Gd}, ^{6}\text{Li}, ^{98}\text{Mo}, ^{146}\text{Nd}, ^{208}\text{Pb},$
 $^{104}\text{Ru}, ^{124}\text{Sb}, ^{154}\text{Sm}, ^{118}\text{Sn}, ^{116}\text{Sn}, \text{SS},$
 $\text{Tgs}, ^{66}\text{Zn}$
- 110 MicroMatter Company
197 - 34th Avenue East
Seattle, Washington 98102
 $^{44}\text{Ca}, ^{112}\text{Cd}, ^{116}\text{Cd}, ^{50}\text{Cr}, ^{164}\text{Dy}, ^{54}\text{Fe},$
 $^{44}\text{K}, ^{58}\text{Ni}, ^{64}\text{Ni}, ^{88}\text{Sr}, ^{88}\text{Sr}, ^{35}\text{S},$
 $^{128}\text{Te}, \text{Tgs}, ^{66}\text{Ti}, ^{88}\text{Ti}, ^{64}\text{Zn}, ^{66}\text{Zn},$
 $^{68}\text{Zn}, ^{90}\text{Zr}$

- 111 Microfoils
P. O. Box 283
Argonne, Illinois 60439

 ^{156}Gd , ^{58}Ni , ^{60}Ni , ^{62}Ni , ^{204}Pb ,
 ^{207}Po , ^{208}Pb , ^{144}Sm , ^{147}Sm , ^{148}Sm ,
 ^{154}Sm
- 112 Mill-Power Supply Company
P. O. Box 1339
Charlotte, North Carolina 28201

 ^7Li
- 113 Minnesota, University of
402 Morrill Hall
Minneapolis, Minnesota 55455

 ^{40}Ca , ^{166}Er , ^{167}Er , ^{151}Eu , ^{153}Eu ,
 ^{158}Gd , ^{70}Ge , ^{72}Ge , ^{73}Ge , ^{74}Ge ,
 ^{76}Ge , ^{28}Si , ^{30}Si , ^{150}Sm , ^{152}Sm ,
 ^{154}Sm , SS, Tgs, ^{64}Ti , ^{66}Ti , ^{50}Ti ,
 ^{90}Zr , ^{91}Zr , ^{92}Zr , ^{94}Zr , ^{96}Zr
- 114 Missouri, University of
Columbia, Missouri 65201

 ^{58}Ni , ^{60}Ni
- 115 Missouri, University of, Kansas City
5100 Rockhill Road
Kansas City, Missouri 64110

 ^{79}Br , ^{81}Br
- 116 Mobil Oil Corporation
P. O. Box 900
Dallas, Texas 75221

 ^{87}Sr
- 117 Morehouse College
Atlanta, Georgia 30314

 ^{35}Cl
- 118 Mount Sinai Hospital
4300 Alton Road
Miami Beach, Florida 33139

 ^{112}Cd , ^{100}Mo , ^{180}I , SS, ^{124}Te , ^{66}Zn
- 119 National Bureau of Standards
Connecticut Avenue and Van Ness Street, N.W.
Washington, D. C. 20234

 ^{108}B , ^{138}Ba , ^{136}Ba , ^{138}Ba , ^{50}Cr , ^{52}Cr ,
 ^{162}Dy , ^{54}Fe , ^{160}Gd , ^{74}Ge , ^{201}Hg ,
 $^{6\text{Li}}$, $^{7\text{Li}}$, ^{100}Mo , ^{142}Nd , ^{146}Nd , ^{58}Ni ,
 ^{60}Ni , ^{195}Pt , ^{38}S , SI, ^{28}Si , ^{30}Si ,
 ^{88}Sr , SS, Tgs, ^{203}Tl , ^{205}Tl
- 120 New England Nuclear Corporation
575 Albany Street
Boston, Massachusetts 02118

 ^{107}Ag , ^{132}Ba , ^{44}Ca , ^{108}Cd , ^{112}Cd ,
 ^{114}Cd , ^{140}Ce , ^{50}Cr , ^{150}Dy , ^{54}Fe ,
 ^{56}Fe , ^{57}Fe , ^{58}Fe , ^{160}Gd , ^{99}Ru ,
 ^{100}Ru , ^{74}Se , ^{144}Sm , ^{154}Sm , ^{112}Sn ,
 ^{116}Sn , ^{118}Sn , ^{119}Sn , ^{120}Sn , ^{124}Sn ,
 ^{88}Sr , SS, ^{120}Te , ^{124}Te , ^{125}Te , ^{126}Te ,
 ^{128}Te , Tgs, ^{180}W , ^{184}W , ^{186}W ,
 ^{168}Yb , ^{66}Zn , ^{68}Zn
- 121 New Hampshire, University of
Durham, New Hampshire 03824

 ^7Li , ^{208}pb
- 122 New Mexico, University of
Albuquerque, New Mexico 87103

SS
- 123 New York, State University College at Buffalo
1300 Elmwood Avenue
Buffalo, New York 14222

 ^{114}Cd
- 124 New York, State University of
1400 Washington Avenue
Albany, New York 12203

 ^{58}Ni , ^{88}Rb , ^{87}Rb
- 125 New York, State University of
3435 Main Street
Buffalo, New York 14214

 ^{48}Cu , $^{6\text{Li}}$, ^{58}Ni
- 126 New York, State University of
Research Foundation
Stony Brook, New York 11790

 ^{136}Ba , ^{138}Ba , ^{37}Cl , ^{69}Ga , ^{71}Ga , $^{6\text{Li}}$,
 ^{24}Mg , ^{58}Ni , ^{208}Pb , ^{208}Pb , ^{154}Sm ,
 ^{88}Sr , SS, Tgs, ^{66}Zn , ^{68}Zn , ^{66}Zn
- 127 North Carolina State University
P. O. Box 5935
Raleigh, North Carolina 27607

 ^{91}K , $^{6\text{Li}}$
- 128 North Carolina, University of
Chapel Hill, North Carolina 27514

 ^{161}Dy , ^{151}Eu , ^{160}Gd , ^{91}K , ^{149}Sm ,
 ^{119}Sn
- 129 North Texas State University
P. O. Box 13767
N. T. Station
Denton, Texas 76203

 ^{90}Ti , ^{97}Ti , ^{98}Ti , ^{99}Ti , ^{50}Ti , ^{68}Zn ,
 ^{66}Zn , ^{67}Zn , ^{68}Zn
- 130 Northern Illinois University
Box 185
DeKalb, Illinois 60115

 ^{38}S , ^{74}Se , ^{76}Se , ^{82}Se , SI
- 131 Northwestern University
619 Clark Street
Evanston, Illinois 60201

 ^{63}Cu , ^{57}Fe
- 132 Notre Dame, University of
Notre Dame, Indiana 46556

 ^{163}Dy , ^{164}Dy , ^{151}Eu , ^{153}Eu , ^{58}Fe ,
 ^{56}Fe , ^{154}Gd , ^{155}Gd , ^{156}Gd , ^{157}Gd ,
 $^{6\text{Li}}$, ^{58}Ni , ^{62}Ni , ^{64}Ni , ^{173}Yb , ^{174}Yb

133 Nuclear Measurements Corporation
2460 North Arlington Avenue
Indianapolis, Indiana 46218

^{10B}

134 Ohio State University
190 North Oval Drive
Columbus, Ohio 43210

¹⁷⁹Hf, ¹⁷⁶Lu, ^{Si}, ⁹¹Zr

135 Ohio State University
Research Foundation
1314 Kinnear Road
Columbus, Ohio 43212

³⁵Cl, ³⁷Cl, ⁶³Cu, ⁶⁵Cu, ⁷⁰Ge, ⁷²Ge,
⁷⁴Ge, ³⁴S, SS

136 Ohio University
Athens, Ohio 45701

¹⁰⁹Ag, ⁸⁰Ca, ⁸²Ca, ¹¹⁰Cd, ¹¹²Cd, ⁷²Ge,
⁷⁴Li, ⁸⁸Sr

137 Oregon State University
Corvallis, Oregon 97330

⁵⁷Fe, ¹³⁰Te

138 Pacific Gas and Electric Company
P. O. Box 7760
San Francisco, California 94120

⁷Li

139 Pennsylvania State University
University Park, Pennsylvania 16802

³⁰Si, SS

140 Pennsylvania, University of
3025 Walnut Street
Philadelphia, Pennsylvania 19104

¹⁰⁸B, ¹¹⁸B, ⁸²Ca, ⁶Li, ⁵⁰Ni, ⁶⁰Ni,
⁶²Ni, ⁶⁴Zn, ⁶⁶Zn, ⁶⁸Zn

141 Pittsburgh, University of
Pittsburgh, Pennsylvania 15213

¹³⁴Ba, ¹³⁵Ba, ¹³⁷Ba, ¹¹⁴Cd, ⁵⁰Cr,
¹⁶⁴Er, ⁵⁷Fe, ¹⁷⁵Lu, ²⁴Mg, ⁹⁵Mo,
⁹⁷Mo, ⁸⁷Sr, Tgs, ⁶⁶Tl, ⁶⁸Tl, ¹⁰²W,
¹⁰³W, ¹⁰⁶W, ¹⁰⁸W

142 Princeton University
James Forrestal Campus
Princeton, New Jersey 08540

⁸²Ca, ¹⁰⁶Cd, ¹⁰⁸Cd, ¹¹⁰Cd, ¹¹²Cd,
¹¹⁴Cd, ³⁵Cl, ¹⁵⁷Gd, ¹⁶⁰Gd, ⁸⁷Sr,
¹⁷⁶Yb

143 Purdue University
Pharmacy Annex
Lafayette, Indiana 47907

⁵⁴Cr, ⁶³Cu, ⁶⁵Cu, ⁵⁴Fe, ¹⁷⁴Hf,
¹⁷⁶Hf, ¹⁸⁰Hf, ⁶Li, ²⁴Mg, ⁹²Mo,
⁹³Mo, ⁵⁰Ni, ¹⁸⁰O, ¹⁰²Pd, ¹⁹⁵Pt,
¹⁵⁰Sm, SS, ¹²²Te, ¹²⁴Te, ¹²⁶Te, ¹²⁸Te,
¹³⁰Te, Tgs, ⁶⁸Tl, ¹⁰²W, ⁹⁰Zr, ⁹²Zr,
⁹⁴Zr, ⁹⁶Zr

144 Radio Corporation of America
Box 432
Princeton, New Jersey 08540

¹¹⁴Cd, SS

145 Radio Corporation of America
New Holland Pike
Lancaster, Pennsylvania 17604

¹¹²Cd, ¹¹⁴Cd, SS

146 Reactor Experiments, Inc.
963 Terminal Way
San Carlos, California 94070

^{10B}

147 Reed College
3203 S. E. Woodstock Boulevard
Portland, Oregon 97202

⁷⁴Se

148 Rensselaer Polytechnic Institute
110 8th Street
Troy, New York 12181

¹⁵¹Eu, ¹⁵³Eu, ¹⁶⁰Gd, ⁷Li, ¹⁵⁰Nd,
¹⁰⁵Pd, SI

149 Research Chemicals
P. O. Box 14588
Phoenix, Arizona 85031

¹⁶²Dy, ¹⁶⁴Er, Tgs

150 Reuter-Stokes Electronics Components
18530 South Miles Parkway
Warrensville Heights
Cleveland, Ohio 44128

^{10B}

151 Rhode Island, University of
Narragansett Marine Laboratory
Kingston, Rhode Island 02881

³⁴S

152 Rochester Institute of Technology
One Lomb Memorial Drive
Rochester, New York 14623

⁵⁰Ni, ⁶²Ni

153 Rochester, University of
575 Elmwood Avenue
Rochester, New York 14627

¹⁰⁹Ag, ¹⁰⁸B, ¹¹⁸B, ¹³⁴Ba, ⁸²Ca, ⁸⁰Ca,
⁵⁴Cr, ⁶⁵Cu, ¹⁷⁶Hf, ¹⁷⁷Hf, ¹⁷⁸Hf,
¹⁷⁹Hf, ¹⁸⁰Hf, ⁶Li, ¹⁷⁵Lu, ⁹²Mo,
⁵⁰Ni, ⁶⁰Ni, ²⁰⁴Pb, ²⁰⁶Pb, ²⁰⁷Pb,
²⁰⁸Pb, ¹⁶⁷Re, ³⁴S, ²⁹Si, ⁸⁸Sr, SS,
Tgs, ⁵⁰Tl

154 Rohm and Haas Company
Independence Mall West
Philadelphia, Pennsylvania 19105

⁷Li

- 155 Rutgers, The State University
New Brunswick, New Jersey 08903
¹³⁸Ba, ¹⁰⁶Cd, ¹⁴⁰Ce, ⁵⁶Fe, ⁷⁴Ge,
⁸⁴K, ⁹²Mo, ⁶⁰Ni, ⁹⁰Ru, ³²S, Tgs,
⁷⁰Zn
- 156 Sandia Corporation
Post Office Box 5800
Albuquerque, New Mexico 87115
¹⁶⁰O, ²⁸Si, SS, Tgs
- 157 Singer Company
70 New Dutch Lane
Fairfield, New Jersey 07006
¹⁹⁹Hg, ²⁰⁰Hg, SS
- 158 Sloan-Kettering Institute
425 East 68th Street
New York, New York 10021
¹²³Te, ⁹⁷Tl, ⁹⁸Tl
- 159 South Carolina, University of
Columbia, South Carolina 29208
¹¹³Cd, ⁵⁶Ni, ⁶⁰Ni, ²⁰⁸Pb, SS, Tgs,
⁹⁰Zr
- 160 Southern California, University of
University Park
Los Angeles, California 90007
¹⁹⁹Pt
- 161 Southern University in New Orleans
6400 Press Drive
New Orleans, Louisiana 70126
¹⁷⁵Lu, SI, Tgs
- 162 Spectra-Physics, Inc.
1250 W. Middlefield Road
Mountain View, California 94040
¹¹⁴Cd, SS
- 163 Spex Industries, Inc.
3880 Park Avenue
Box 798
Metuchen, New Jersey 08840
⁸²Ca, ¹¹³Cd, ¹⁵³Eu, ⁹⁵Mo, ⁸²Ni,
²⁰⁸Pb, ¹¹⁶Sn
- 164 Stanford Research Institute
Menlo Park, California 94025
⁸⁸Ca
- 165 Stanford University
P. O. Box 4409
Stanford, California 94305
¹¹⁰Cd, ¹¹²Cd, ¹¹⁴Cd, ¹⁶⁶Er, ²⁴Mg,
²⁰⁸Pb, ⁸⁸Sr, ⁸⁸Sr, ¹⁸⁰W, ⁹⁰Zr
¹¹⁶Sn
- 166 Stevens Institute of Technology
Castle Point Station
Hoboken, New Jersey 07030
- 167 Stohler Isotope Chemicals Inc.
49 Jones Road
Waltham, Massachusetts 02154
²⁰¹Hg
- 168 Tennessee, University of
Knoxville, Tennessee 37916
¹¹⁶Cd, ¹⁴²Nd, ¹⁴⁶Nd, ¹¹⁶Sn, ¹⁸²Y
- 169 Texas A and M Research Foundation
P. O. Box H
College Station, Texas 77843
¹¹⁴Cd, ⁵⁷Fe, ²⁰⁸Pb, ³³S
- 170 Texas A and M University
Post Office Box 44
College Station, Texas 77843
¹⁰⁸, ¹¹⁸, ⁶⁰Ca, ⁴⁴Ca, ¹³⁶Ce, ¹³⁸Ce,
¹⁴⁰Ce, ¹⁴²Ce, ⁵⁰Cr, ⁶⁸Cu, ¹⁵¹Eu,
⁵⁴Fe, ⁵⁶Fe, ⁵⁷Fe, ¹⁵⁸Gd, ¹⁶⁰Gd,
¹⁷⁸Hf, ¹⁷⁸Hf, ¹⁷⁹Hf, ¹⁸⁰Hf,
¹³⁹La, ⁴¹Li, ²⁴Mg, ²⁶Mg, ¹⁰⁰Mo, ¹⁴²Nd,
¹⁶⁶Nd, ⁵⁶Ni, ⁶²Ni, ¹⁸⁸Re, ¹⁸⁷Re,
¹²¹Sb, ¹²³Sb, ¹⁴⁶Sm, ¹⁴⁸Sm, ¹¹⁶Sn,
¹¹⁸Sn, ¹¹⁹Sn, ¹²⁰Sn, ¹²⁶Sn, Tgs,
¹⁷⁰Yb, ¹⁷¹Yb, ¹⁷²Yb, ¹⁷⁴Yb, ¹⁷⁶Yb,
⁶⁴Zn, ⁶⁶Zn
- 171 Texas Instruments, Inc.
Science Services Division
Post Office Box 5621
Dallas, Texas 75222
¹⁷⁴Yb
- 172 Texas Technological College
Texas Agricultural Experiment Station
Lubbock, Texas 79409
⁵⁶Ni, ⁶²Ni
- 173 Texas, University of
Austin, Texas 78712
⁵⁶Fe, ²⁰⁸Pb, Tgs
- 174 Texas, University of
M. D. Anderson Hospital and Tumor Institute
6723 Bertner Avenue
Houston, Texas 77025
⁶Li, SS
- 175 Tracor/Austin
6500 Tracor Lane
Austin, Texas 78721
⁸⁵Rb, ⁸⁷Rb
- 176 Tulane University
New Orleans, Louisiana 70118
¹⁷⁵Lu, ⁷⁴Se, ⁷⁷Se, ⁷⁸Se, SI
- 177 Union Carbide Corporation
Sterling Forest Research Center
Post Office Box 324
Tuxedo, New York 10987
⁶³Cu, ¹⁵⁸Dy, ⁵⁴Fe, ⁵⁸Fe, ⁸⁴K, ¹¹²Sn,
⁸⁴Sr, SS

- 178 Union Carbide Corporation, Nuclear Division
Oak Ridge National Laboratory
Post Office Box X
Cak Ridge, Tennessee 37830
- ¹⁰⁷Ag, ¹⁰⁸B, ¹¹⁰Ba, ¹¹³C, ⁹⁰Ca,
⁹²Ca, ⁴³Ca, ⁶⁹Ca, ⁶⁸Ca, ¹⁰⁴Cd,
¹¹¹Cd, ⁶³Cu, ⁶⁵Cu, ¹⁶²Dy, ¹⁶⁶Er,
¹⁶⁷Er, ¹⁶⁸Er, ¹⁷⁰Er, ⁵⁶Fe, ⁵⁷Fe,
⁷¹Ga, ¹⁵⁴Gd, ¹⁵⁶Gd, ¹⁶⁰Gd, ¹¹³In,
¹¹⁵In, ¹¹³Ir, ⁶¹Li, ⁷Li, ⁹⁸Mo, ¹⁹N,
¹⁴²Nd, ⁶⁰Ni, ⁶²Ni, ²⁰⁷Pb,
²⁰⁸Pb, ¹⁰⁶Pd, ¹⁰⁸Pd, ¹¹⁰Pd,
¹⁹⁶Pt, ¹⁰²Ru, ³²S, ^{SI}, ²⁸Si, ²⁹Si,
³⁰Si, ¹⁴⁴Sm, ¹⁵⁰Sm, ¹⁵²Sm, ¹⁵⁴Sm,
¹¹²Sn, ¹¹⁰Sn, ¹²⁰Sr, ^{SS}, ¹²⁰Ta,
¹²²Te, ¹²⁴Te, Tgs, ⁹⁷Ti, ²⁰³Tl,
¹⁸⁰W, ¹⁷⁴Yb, ⁶⁶Zn, ⁶⁸Zn, ⁹²Zr,
⁹⁴Zr, ⁹⁶Zr
- 179 Union Carbide Corporation, Nuclear Division
Y-12 Plant
Post Office Box Y
Cak Ridge, Tennessee 37830
- ¹⁰⁶Cd, ²⁰⁸Pb, Tgs, ⁶⁷Zn
- 180 United States Air Force
Kirkland Air Force Base, New Mexico 87117
- ²⁰²Hg
- 181 United States Air Force
ASFCF-13, Building 11, Area B
Wright Patterson Air Force Base, Ohio 45433
- ¹¹⁴Cd, ⁶³Cu, ⁶⁵Cu, ¹⁸⁰O, ¹⁵⁴Sm, SS,
Tgs
- 182 United States Army
Armed Forces Radiobiology Research Institute
Defense Nuclear Agency
Bethesda, Maryland 20014
- ⁴⁴Ca, ¹²²Te
- 183 United States Army
Building 310
Aterdeen Proving Ground, Maryland 21005
- ⁵⁴Cr, ⁵⁴Fe, ⁵⁸Ni, Tgs
- 184 United States Army
Finance and Accounting Officer
Fort Monmouth, New Jersey 07703
- ⁶¹Li, ⁷Li
- 185 United States Army
Finance and Accounting Officer
Natick, Massachusetts 01760
- SS
- 186 United States Army
Redstone Arsenal
P. and C. Division
Building T-3152
Redstone Arsenal, Alabama 35809
- ¹⁰⁸B
- 187 United States Army
White Sands Missile Range
New Mexico 88002
- ¹⁰⁸B
- 188 United States Atomic Energy Commission
Schenectady Naval Reactors Office
P. O. Box 1069
Schenectady, New York 12301
- ⁶⁰Ni
- 189 United States Department of Interior
Geological Survey
Branch of Budget and Finance
Washington, D. C. 20242
- SS
- 190 United States Department of Interior
Geology Survey
Bldg. 21, Denver Federal Center
Denver, Colorado 80225
- ¹³⁷Ba, ⁵³Cr, ⁶¹K, ⁶²Ni, SS
- 191 United States National Aeronautics and Space Adm.
Goddard Space Flight Center
Glendale Road
Greenbelt, Maryland 20771
- ¹⁰⁰Hg, ²⁰²Hg, ⁸⁷Rb, ¹²⁴Te, ¹²⁶Te
- 192 United States National Aeronautics and Space Adm.
George C. Marshall Space Flight Center
Huntsville, Alabama 35812
- SS, ⁶⁷Zn
- 193 United States Navy
Naval Ordnance Laboratory
White Oak
Silver Spring, Maryland 20910
- ⁷⁹Br, ¹¹³Sn, SS, Tgs
- 194 United States Navy
Naval Research Laboratory
Washington, D. C. 20390
- ¹⁶¹Dy, ¹⁶⁰Gd, ¹⁷⁶Lu, ¹⁶⁷Oa, ¹⁶⁹Os,
²⁰⁸Pb, ¹⁶⁹Re, ¹⁶⁷Re, SI, Tgs
- 195 United States Public Health Environmental Protect
Accounting Operations Office, Durham
Research Triangle Park, North Carolina 27711
- ³⁷Cl
- 196 United States Public Health Service
National Institutes of Health, Isotope Laboratory
Building 21
Bethesda, Maryland 20014
- ⁶⁰Ca, ⁴⁴Ca, ⁵⁷Fe
- 197 United States Steel Corporation
Research Center
Monroeville, Pennsylvania 15146
- ⁵⁷Fe, Tgs
- 198 Vanderbilt University
Business Managers Office
Nashville, Tennessee 37203
- ¹⁶⁰O, SS, Tgs

- 199 Vermont, University of
Waterman Bldg.
Burlington, Vermont 05401
⁵⁴Fe
- 200 Veterans Administration Hospital
54th Street and 48th Avenue S.
Minneapolis, Minnesota 55417
⁵⁷Fe
- 201 Veterans Administration Hospital
4101 Woolworth Avenue
Omaha, Nebraska 68105
¹⁰B
- 202 Virginia Associated Research Campus
12070 Jefferson Avenue
Newport News, Virginia 23606
²⁰⁶Pb, ²⁰⁷Pb, ²⁰⁸Pb, SI, Tgs
- 203 Virginia Polytechnic Institute
Blacksburg, Virginia 24061
⁴⁴Ca, ²⁰⁰Hg, ⁴⁴K, ²⁰⁸Pb, ⁸⁷Rb, SI,
¹³⁰Te
- 204 Virginia, University of
Charlottesville, Virginia 22903
⁵²Cr, ⁵⁴Fe, ⁵⁶Fe, ⁵⁸Ni, ⁶⁰Ni,
⁴⁴Ti, ⁶⁰Ti, ⁶⁶Zn, ⁶⁶Zn
- 205 Washington State University
Comptroller's Office
Pullman, Washington 99163
¹⁷¹Yb, ¹⁷⁴Yb
- 206 Washington University
Lindell and Skinker
St. Louis, Missouri 63130
¹²²Te
- 207 Washington, University of
400 Administration Building
Seattle, Washington 98105
¹⁰B, ¹⁰⁶Cd, ¹⁵³Eu, ²⁰⁰Hg, ⁶Li, ⁷Li,
⁹²Mo, ²⁰⁴Pb, ²⁰Si, ³⁰Si, Tgs
- 208 Wayne State University
Detroit, Michigan 48202
⁵⁴Fe, ⁵⁷Fe, ²⁰⁸Pb, ¹⁰¹Ru, ⁷⁵Se,
⁷⁷Se, ⁸⁰Se, SS, Tgs, ⁴⁴Ti, ⁶⁶Zr
- 209 Western Kentucky University
Bowling Green, Kentucky 42101
¹¹²Cd, ⁸⁷Rb
- 210 Western Michigan University
Kalamazoo, Michigan 49001
SI, ¹⁴⁸Sm
- 211 Western Washington College
Bellingham, Washington 98225
¹⁰⁰Hg, ¹⁰⁹Hg, ²⁰⁰Hg, ²⁰¹Hg, ²⁰²Hg,
²⁰⁴Hg, ¹⁰²W, ¹⁰³W, ¹⁰⁵W, ¹⁰⁶W
- 212 Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
Post Office Box 79
West Mifflin, Pennsylvania 15122
¹³⁷Ba, ⁴²Ca, ⁴⁴Ca, ¹¹¹Cd, ³⁷Cl, ⁵³Cr,
⁴⁵Cu, ¹⁶¹Dy, ¹⁶³Dy, ¹⁵³Eu, ⁵⁷Fe,
⁷¹Ga, ¹⁵⁸Gd, ¹⁵⁷Gd, ⁷³Ge, ⁷⁶Ge,
¹⁴⁰Hf, ²⁸Mg, ⁶¹Ni, ²⁰⁷Pb, ³³S,
¹²³Sb, ⁷⁷Se, ³⁸Si, ¹⁰⁷Sm, ¹⁴⁹Sm,
¹²⁴Sn, ⁸⁷Sr, ¹²³Te, ²⁰³Tl, ¹⁰³W,
¹⁷¹Yb, ⁶⁷Zn
- 213 Westinghouse Electric Corporation
Post Office Box 284
Elmira, New York 14902
¹⁰B, ⁶Li, ⁷Li
- 214 Westinghouse Hanford Company
P. O. Box 1970
Richland, Washington 99352
¹⁰B, ⁶Li, Tgs
- 215 Wisconsin Public Service Corporation
Keweenaw Nuclear Power Plant
P. O. Box 159
Keweenaw, Wisconsin 54216
⁷Li
- 216 Wisconsin, University of
750 University Avenue
Madison, Wisconsin 53706
⁷⁹Br, ⁸¹Br, ⁵⁶Fe, ⁵⁷Fe, ⁷Li, ²⁴Mg,
⁵⁸Ni, ⁶⁰Ni, ²⁰⁸Pb, ¹⁵⁰Sm, Tgs,
⁴⁴Ti
- 217 Woods Hole Oceanographic Institute
Woods Hole, Massachusetts 02543
²⁰⁸Pb
- 218 Yale University
20 Ashmun Street
New Haven, Connecticut 06520
⁴⁰Ca, ¹⁶²Dy, ¹⁶⁶Dy, ¹⁵¹Eu, ¹⁵³Eu,
¹⁵⁶Gd, ¹⁵⁸Gd, ²⁰²Hg, ⁶Li, ⁷Li,
¹⁰⁷Sm, ¹⁴⁸Sm, ¹⁴⁹Sm, ¹⁵⁰Sm, ¹⁵⁴Sm,
SS, Tgs, ⁴⁴Ti, ⁴⁶Ti, ⁵⁰Ti, ¹⁷²Yb,
¹⁷⁴Yb
- 219 Yale-New Haven Hospital
P. O. Box 1001
New Haven, Connecticut 06504
⁵⁷Fe, ¹⁹²Pt, ⁹⁶Ru, ²⁰³Tl

B. Foreign

12

ALGERIA

220 Institut d'Etudes Nucleaires d'Alger
Service Applications Nucleaires
Avenue Franz Franon
Algiers

180

ARGENTINA

221 Buenos Aires, Universidad de
Facultad de Ciencias Exactas y Naturales
Peru 222, Buenos Aires, Argentina

99Zr

AUSTRALIA

222 Australian Consulate General
c/o Universal Transcontinental Corp.,
No. 9 First Street
San Francisco, California 94105

186Er, 160Gd, 149Sm, 184Sm

223 Australian Consulate General
636 Fifth Avenue
New York, New York 10020

10B, 6Li, 208Pb, 152Sm, 120Sn,
168Yb, 66Zn, 67Zn

224 Australian Mineral Development Laboratories
Flemington Street
Fremantle, South Australia 5063

87Rb

225 Australian National University
P. O. Box 4
Canberra, A. C. T., Australia

10B, 79Br, 81Br, 80Ca, 82Ca, 84Ca,
86Ca, 110Cd, 111Cd, 112Cd, 114Cd,
90Cr, 181Eu, 153Eu, 87Fe, 70Ge,
6Li, 175Lu, 24Mg, 92Mo, 86Mo, 95Mo,
96Mo, 97Mo, 88Ru, 100Ru, 101Ru,
87Rb, 96Ru, 99Ru, 100Ru, 101Ru,
102Ru, 104Ru, 72S, 74Se, 76Se, 77Se,
78Se, 80Se, 29Si, 84Sr, 87Sr,
88Sr, 88Sr, 123Te, 125Te, Tgs, 88Tl,
90Tl, 92Zr, 91Zr, 92Zr, 99Zr

226 Melbourne, University of
Parkville N.2, Melbourne
Victoria, Australia

107Ag, 109Ag

227 Mcnash University
Wellington Road
Clayton, Victoria, Australia

63Cu, 167Er, 87Fe, 113In, 17O,
154Sm

228 Western Australian Institute of Technology
Hayman Road
Bentley South 6102
Western Australia

106Cd, 111Cd

AUSTRIA

229 Atominstitut der Osterr Hochschulen
Schuttelstrasse 115
Wien 2, Austria

6Li

230 Österreichische Studiengesellschaft
für Atomenergie Ges. M.B.H.
Lenaugasse 10
A-1082 Wien, Austria

158Gd, 6Li

BELGIUM

231 Centre d'Etude de l'Energie Nucleaire
144 Avenue Plasky
Brussels 4, Belgium

108

232 European Atomic Energy Commission
Central Bureau for Nuclear Measurements
Geel, Belgium

151Eu, 177Hf, 6Li, 106Pd, 196Pt,
SI

233 IRE, Institut National des Radioelements
Avenue Eugene Plasky, 144
1040 Brussels, Belgium

46Ca, 108Cd, 88Sr, SS

234 Liege, Universite de
2 rue Armand Stevart
Liege, Belgium

57Fe, Tgs

235 Louvain, Universite de
Parc D'Arenberg
Heverlee Louvain, Belgium

109Ag, 76Ge, 124Te, 126Te, 128Te

236 Rijksuniversiteit Gent
Naturkundig Laboratorium
Proeftuinstraat 40
Gent, Belgium

76Ge, 202Hg, 204Hg

BRAZIL

237 Hospital das Clinicas da Faculdade
de Medicina da Universidade de Sao Paulo
Sao Paulo, Brazil

80Ca, 82Ca, 84Ca, 86Ca, 90Cr, 59Fe,
59Fe, 59Fe, 59Ni, 60Ni, 62Ni,
64Ni, 180, 208Pb, SS, Tgs, 88Tl,
66Zn, 70Zn, 90Zr, 92Zr, 94Zr,
96Zr

238 Pontificia Universidade Catolica do Rio de Janeiro
Rua Marques de Sao Vincente 209/263
Rj ZC 20 Brazil

208Pb, Tgs

CANADA

- 239 Alberta, University of
Edmonton, Alberta, Canada

 108 B, 81 Br, 114 Cd, 116 Cd, 25 Mg, SS,
 203 Tl
- 240 Atomic Energy of Canada Limited
P. O. Box 6300
Postal Station J
Ottawa, Canada

 50 Cr, 196 Hg, SS
- 241 Atomic Energy of Canada Limited
Chalk River, Ontario, Canada

 42 Ca, 50 Cr, 54 Fe, 154 Gd, 70 Ge,
 208 Hg, 61 Li, 71 Li, 25 Mg, 92 Mo, 146 Nd,
 148 Nd, 58 Ni, 60 Ni, 61 Ni, 204 Pb,
 206 Pb, 208 Pb, 38 S, 82 Se, 28 Si, 146 Sm,
 124 Sn, SS, 130 Te, Tgs, 203 Tl, 66 Zn
- 242 Atomic Energy of Canada Limited
Whiteshell Nuclear Research Establishment
Pinawa, Manitoba, Canada

 108 B, 53 Cr, 63 Cu, 54 Fe, 158 Gd, 97 Mo,
 61 Ni, 62 Ni, 92 Rr
- 243 British Columbia, University of
Vancouver 8, B.C., Canada

 74 Ge, 61 Ni
- 244 Canadian Department of National Defense
Royal Military College
Kingston, Ontario, Canada

 167 Ds, 167 Re
- 245 Geological Survey of Canada
Ottawa 4, Ontario, Canada

 89 K, 81 K
- 246 Guelph, University of
Guelph, Ontario, Canada

 40 Ca, 179 Hf
- 247 Laval, Universite de
Case Postale 2208
Pavillon Vachon
Quebec 10, P.Q., Canada

 108 B, 111 B, 50 Cr, 95 Mo, 96 Mo, 97 Mo,
 98 Mo, 28 Si, 29 Si, Tgs
- 248 Manitoba, University of
Winnipeg, Manitoba, Canada

 140 Ce, 57 Fe, 70 Ge, 174 Hf, 196 Hg,
 24 Mg, 62 Ni, 204 Pb, 102 Pd, 74 Se, 119 Sn,
SS, 120 Te, Tgs, 168 Yb, 174 Yb, 66 Zn,
 66 Zn
- 249 McGill University
Montreal 2, P.Q., Canada

 65 Cu, 155 Gd, 70 Ge, 202 Hg, 142 Nd,
 204 Pb, 206 Pb, 207 Pb, 208 Pb, 102 Pd,
 144 Sm, 88 Sr, 120 Te, 130 Te, 67 Tl,
 70 Zn, 90 Zr
- 250 McMaster University
Hamilton, Ontario, Canada

 108 B, 40 Ca, 44 Ca, 46 Ca, 108 Cd, 35 Cl,
 52 Cr, 44 Cr, 164 Dy, 166 Er, 166 Er,
 167 Er, 168 Er, 170 Er, 153 Eu, 55 Fe,
 155 Gd, 70 Ge, 72 Ge, 73 Ge, 74 Ge,
 76 Ge, 61 Li, 32 S, 146 Sm, 150 Sm, 152 Sm,
 122 Te, 124 Te, Tgs, 66 Tl, 68 Tl, 50 Tl,
 172 Yb, 174 Yb, 66 Zn, 66 Zn, 68 Zn
- 251 Montreal, Universite de
Montreal, Canada

 108 B, 111 B, 39 K, 143 Nd, SS, Tgs, 66 Tl
- 252 National Research Council
Montreal Road Laboratories
Ottawa, Ontario, Canada

 33 S, 34 S, 76 Se, 80 Se
- 253 Ottawa, University of
Ottawa, Ontario, Canada

 52 Cr, SS
- 254 Queen's University
Kingston, Ontario, Canada

 50 Cr, 53 Cr, 54 Fe, 26 Mg, 26 Mg, 61 Ni,
 89 Rb, 87 Rb, 32 S, 38 S, 28 Si, 66 Tl,
 67 Tl, 50 Tl, 66 Zn, 66 Zn
- 255 Saskatchewan, University of
Saskatoon, Saskatchewan, Canada

 70 Ge, 72 Ge, 74 Ge, 61 Li, Tgs
- 256 Scintrex, Ltd.
222 Snidercroft Road
Concord, Ontario, Canada

 204 Pb, 206 Pb, 207 Pb, 208 Pb
- 257 Simon Fraser University
Burnaby 2, B.C., Canada

 124 Te, 125 Te, 126 Te
- 258 Toronto General Hospital
101 College Street
Toronto 2, Ontario, Canada

 50 Cr
- 259 Toronto, University of
Toronto, Ontario, Canada

 40 Ca, 48 Ca, 52 Cr, 54 Fe, 81 K, 61 Li,
 87 Rb, 88 Sr
- 260 Victoria, University of
P. O. Box 1700
Victoria, B.C., Canada

 61 Li, Tgs
- 261 Windsor, University of
Windsor, Ontario, Canada

 69 Ga

262 York University
4700 Keele Street
Downsview, Ontario, Canada
⁶⁸Cu

CHINA

263 Institute of Nuclear Energy Research
P. O. Box 3
Lang-Tan, Taiwan, China

¹⁰⁸B, ¹⁵⁰Nd

264 National Tsing Hua University
110 Chin Hua Street
Taipei, Taiwan, China

⁵⁴Fe, ⁵⁶Fe, ⁷⁰Ge, ⁷²Ge, ⁷⁴Ge, ⁹⁴K,
²⁴Mg, ¹⁰⁸Pd, ⁸⁸Rb, ³²S, ³⁶S, ¹²¹Sb,
⁸⁸Sr, ⁸⁸Se, ⁹⁶Zr

DENMARK

265 Aarhus, University of
Aarhus C, Denmark

⁵⁶Ni, ⁶⁰Ni, ⁶²Ni, ²⁰⁷Pb, ²⁰⁸Pb,
¹⁶⁸Yb

266 Atomic Energy Commission
Research Establishment Riso
Isotope Division
Roskilde, Denmark

⁴³Ca, ⁴⁶Ca, ¹¹⁴Cd, ¹⁷⁹Hf, ⁹⁴Zr

267 Københavns Universitet
Blegdamsvej 17
København Ø, Denmark

¹³⁴Ba, ¹⁶⁴Er, ¹⁶⁷Er, ⁵⁴Fe, ⁷⁰Ge,
²⁰⁰Hg, ²⁰²Hg, ¹¹⁰Pd, ¹²⁰Te, ¹²²Te,
¹²³Te, ⁶⁷Zn

268 Københavns Universitet
Riso Pr.
Roskilde, Denmark

¹³⁰Ba, ¹³⁴Ba, ⁹⁸Ca, ¹¹⁴Cd,
¹¹⁶Cd, ¹⁵⁸Dy, ¹⁵⁸Gd, ¹⁵⁸Hg, ⁵⁶Ni,
¹⁶⁰O, ¹⁰⁸Pd, ¹¹⁰Pd, ¹⁹⁴Pt, ¹⁰²Ru,
¹⁰⁴Ru, ³⁶Si, ¹⁴⁴Sm, ¹⁴⁸Sm, ¹⁵⁰Sm,
¹⁵²Sm, ¹²⁰Sn, ⁹²Zr, ⁹⁸Zr

269 Radiofysisk Laboratorium
Odense Sygehus
5000 Odense, Denmark

¹⁶⁷Er

ENGLAND

270 Birmingham, University of
Edgbaston, Birmingham 15, England
⁵⁰Cr, Tgs

271 British Embassy
3100 Massachusetts Avenue, N. W.
Washington, D. C. 20008

¹⁷⁶Hf, ¹⁷⁷Hf, ¹⁷⁸Hf, ¹⁷⁹Hf, ¹⁸⁰Hf,
SI

272 Cambridge University
Cambridge, England
¹¹⁸B, ¹⁹⁹Hg

273 Digby Chemical Service
103 Ebury Street
London SW1W 9QU, England
¹⁹²Pt

274 Leeds, University of
Leeds 2, England
⁸⁸Sr

275 Leicester, University of
Leicester, England
³⁵Cl, ³⁷Cl

276 Levy West Laboratories, Ltd.
Bush Fair
Harlow, Essex, England
⁴⁸Ca, ⁷Li

277 Liverpool, University of
Liverpool 3, England
¹⁶⁰Er, ¹⁵⁴Gd, ¹⁵⁶Gd, ¹⁰⁸Pd, ³⁴S,
²⁶Si, ³⁶Si, ⁵⁶Se, ⁷⁰Zn

278 London, University of
Strand, London W.C.2., England
⁴⁸Ca, ¹⁶⁰Gd, ¹⁴⁸Sm, ¹⁵⁰Sm, Tgs,
¹⁷⁸Yb

279 Manchester University
Manchester 13, England
⁴⁰Ca, ⁴²Ca, ⁴³Ca, ⁴⁶Ca, ¹⁰⁶Cd, ¹⁰⁸Cd,
¹⁰⁰Dy, ¹⁶⁴Er, ¹⁶⁶Er, ¹⁶⁸Er,
¹⁷⁰Er, ¹⁶⁴Gd, ⁷²Ge, ⁷⁴Ge, ¹⁰⁸Pd,
⁷⁶Se, ¹⁴⁴Sm, ¹⁴⁸Sm, ⁵⁶Ti, ⁴⁸Ti,
⁵⁰Ti, ¹⁷⁰Yb, ¹⁷²Yb, ¹⁷⁴Yb, ¹⁷⁶Yb

280 Oxford, University of
Nuclear Physics Laboratory
21 Banbury Road
Oxford, England

¹¹⁸B, ⁵⁴Fe, ²⁶Mg, ⁵⁶Ni, ⁶²Ni, ¹⁹²Pd,
¹⁰⁴Pd, ¹⁰⁸Pd, ¹⁰⁶Pd, ¹⁰⁸Pd, ¹¹⁰Pd,
³²S, ³⁴S

281 Permutit Company Ltd., The
632/652 London Road
Ipswich, Middlesex, England
⁷Li

282 Radiochemical Centre
White Lion Road
Amersham, Bucks, England

¹³⁰Ba, ¹¹⁴Cd, ⁵⁰Cr, ⁵⁴Fe, ⁵⁶Fe,
¹⁷⁸Hf, ¹⁹⁶Hg, ⁹⁸Mo, ⁶²Ni, ¹¹²Sn,
⁸⁸Sr, ⁸⁸Sr, ⁵⁶Se, Tgs, ¹⁶⁴W, ⁶⁷Zn

283 Reading, University of
Reading, Berkshire, England

^{35}Cl , ^{37}Cl , SS

284 United Kingdom Treasury and Supply Delegation
25 Broadway
New York, New York 10004

^{11}B , ^{35}Cl , ^{37}Cl , ^{160}Dy , ^{164}Dy , ^{57}Fe ,
 ^{70}Ge , ^{91}K , ^{7}Li , ^{206}Pb ,
 ^{207}Pb , ^{99}Ru , ^{36}S , ^{121}Sb , ^{29}Si , ^{119}Sn ,
 ^{122}Sn , ^{99}Ti

FRANCE

285 C.N.R.S. New York Office
572 Fifth Avenue
New York, New York 10021

^{57}Fe , ^{150}Gd , ^{154}Gd , ^{158}Gd , ^{89}Ni ,
 ^{36}S , SS, Tgs

286 CEA
Department des Radioelements
B. P. No. 2
91190 Gif Sur Yvette, France

^{10}B , ^{11}B , ^{135}Ba , ^{137}Ba , ^{138}Ba , ^{40}Ca ,
 ^{106}Cd , ^{108}Cd , ^{112}Cd , ^{114}Cd , ^{116}Cd ,
 ^{35}Cl , ^{52}Cr , ^{54}Cr , ^{158}Dy , ^{160}Dy ,
 ^{161}Dy , ^{165}Er , ^{166}Er , ^{170}Er , ^{151}Eu ,
 ^{56}Fe , ^{58}Fe , ^{57}Fe , ^{152}Gd , ^{155}Gd ,
 ^{156}Gd , ^{157}Gd , ^{70}Ge , ^{179}Hf , ^{180}Hf ,
 ^{196}Hg , ^{6}Li , ^{7}Li , ^{26}Mg , ^{25}Mg , ^{26}Mg ,
 ^{92}Mo , ^{95}Mo , ^{97}Mo , ^{142}Nd , ^{143}Nd ,
 ^{150}Nd , ^{56}Ni , ^{64}Ni , ^{62}Ni , ^{64}Ni ,
 ^{200}Pb , ^{205}Pb , ^{193}Pd , ^{192}Pt , ^{196}Pt ,
 ^{195}Pt , ^{88}Rb , ^{87}Rb , ^{148}Re , ^{167}Re ,
 ^{101}Ru , ^{36}S , ^{121}Sb , ^{123}Sb , ^{75}Se , ^{199}Sm ,
 ^{197}Sm , ^{149}Sm , ^{180}Sm , ^{152}Sm , ^{119}Sn ,
 ^{88}Sr , ^{87}Sr , ^{86}Sr , SS, ^{122}Te , Tgs,
 ^{90}Tl , ^{182}W , ^{186}W , ^{168}Yb ,
 ^{170}Yb , ^{173}Yb , ^{175}Yb , ^{176}Yb , ^{99}Zn ,
 ^{66}Zn , ^{68}Zn , ^{90}Zr

287 CRN, Labo PNPA
B. P. 20/CRC
67 Strasbourg 3, France

^{11}B , ^{40}Ca , ^{42}Ca , ^{110}Cd , ^{111}Cd , ^{114}Cd ,
 ^{50}Cr , ^{54}Cr , ^{57}Fe , ^{39}K , ^{41}K , ^{26}Mg ,
 ^{56}Ni , ^{204}Pb , ^{206}Pb , ^{207}Pb , ^{208}Pb ,
 ^{110}Pd , ^{36}S , ^{36}S , ^{30}Si , ^{118}Sn , ^{119}Sn ,
 ^{122}Sn , SS, ^{128}Te , Tgs, ^{99}Ti , ^{90}Tl

288 French Atomic Energy Commission
1730 Rhode Island Avenue, N. W.
Suite 1217
Washington, D. C. 20036

^{40}Ca , ^{106}Cd , ^{114}Cd , ^{142}Ce , ^{35}Cl , ^{52}Cr ,
 ^{53}Cr , ^{63}Cu , ^{65}Cu , ^{166}Er , ^{165}Er ,
 ^{56}Fe , ^{57}Fe , ^{158}Gd , ^{160}Gd , ^{70}Ge ,
 ^{76}Ge , ^{76}Ge , ^{177}Hf , ^{191}Ir , ^{26}Mg ,
 ^{26}Mg , ^{92}Mo , ^{98}Mo , ^{142}Nd , ^{146}Nd ,
 ^{150}Nd , ^{56}Ni , ^{64}Ni , ^{204}Pb , ^{206}Pb ,
 ^{208}Pb , ^{149}Re , ^{187}Re , ^{77}Se , ^{77}Se ,
 ^{80}Se , ^{152}Sm , ^{112}Sn , ^{122}Sn , ^{88}Sr ,
SS, ^{125}Te , ^{130}Te , Tgs, ^{203}Tl , ^{182}W ,
 ^{168}Yb , ^{170}Yb , ^{91}Zr , ^{99}Zr , ^{96}Zr

289 Grenoble, Universite de
Grenoble, France

^{6}Li

290 Institut Max von Laue-Paul Langevin
Cedex 156
38 Grenoble-Gare, France

^{142}Nd , ^{149}Nd , ^{156}Nd , ^{148}Nd , ^{150}Nd

291 Institut de Physique Nucleaire de Lyon
43 Boulevard du 11 Novembre 1918
69 Villeurbanne, France

^{161}Dy , ^{167}Er , ^{151}Eu , ^{155}Gd , ^{177}Hf ,
 ^{179}Hf , ^{199}Hg , ^{143}Nd , ^{145}Nd , ^{149}Sm ,
 ^{167}Sm , ^{149}Sm , ^{116}Sn , ^{168}Yb , ^{171}Yb ,
 ^{90}Zr

292 Laboratoire de Chimie Nucleaire
Universite de Bordeaux
LeHaut-Vigneau
33 Gradignan, France

^{35}Cl , ^{32}S , ^{33}S , SS

293 Societe National des Petroles d'Aquitaine
26 Avenue des Lilas
64 Pau, France

^{89}Sr , SS

GERMANY

294 AEG-Telefunken Zentravelwaltung Westzonen
D8752 Grosswelzheim
Frankfurt/Main, West Germany

^{140}Gd

295 American Hoechst Corporation
P. O. Box 2500
Somerville, New Jersey 08876

^{50}Cr , ^{196}Hg , ^{88}Sr , Tgs, ^{168}Yb ,
 ^{174}Yb

296 Bochum, Ruhr-Universitat
463 Bochum, West Germany

^{70}Ge , ^{72}Ge , ^{74}Ge , ^{196}Hg , ^{186}W

297 Bonn, Universitat
Nussallee 12-14
55 Bonn, Germany

^{50}Cr , ^{63}Cu , ^{56}Fe , ^{7}Li , ^{61}Ni , ^{62}Ni ,
 ^{118}Sn , SS, ^{64}Ti , ^{90}Tl , ^{70}Zn

298 Braunschweig, Technische Universitat
Mendelsohnstrasse 1
33 Braunschweig, West Germany

^{35}Cl , ^{37}Cl

299 Buchler and Company
Frankfurter Str. 294
Braunschweig, Germany

^{10}B , ^{11}B , ^{135}Ba , ^{40}Ca , ^{42}Ca , ^{46}Ca ,
 ^{53}Cr , ^{63}Cu , ^{65}Cu , ^{106}Cd , ^{37}Cl , ^{170}Er ,
 ^{57}Fe , ^{196}Hg , ^{199}Hg , ^{200}Hg , ^{202}Hg ,
 ^{204}Hg , ^{6}Li , ^{176}Lu , ^{143}Nd , ^{58}Ni ,
 ^{61}Ni , ^{62}Ni , ^{87}Rb , ^{36}S , ^{77}Se , ^{30}Si ,
 ^{148}Sm , ^{154}Sm , SS, ^{126}Te , ^{128}Te ,
 ^{130}Te , ^{203}Tl , ^{182}W , ^{168}Yb , ^{64}Zn ,
 ^{66}Zn , ^{68}Zn , ^{92}Zr

300 Carl Roth Ohg
Schoemperlenstrasse 3-5
Karlsruhe/B.R.D., West Germany
^{7Li}

301 Darmstadt, Technischen Hochschule
61 Darmstadt, Germany

⁹⁵Mo, ¹⁴²Nd, ¹⁶⁵Re, ¹⁶²W, ¹⁶⁴W,
¹⁸⁶W

302 EURATOM Transuranium Institute
P. O. Box 452
75 Karlsruhe, West Germany

¹⁰⁷Ag, ¹³⁸Ba, ¹³⁵Ba, ¹⁰⁶Cd, ¹⁰⁸Cd,
¹³⁰Ce, ¹⁵¹Eu, ¹⁵⁴Gd, ⁷⁰Ge, ¹¹³In,
⁹²Mo, ⁹⁴Mo, ¹⁰⁴Pd, ⁸⁵Rb, ⁸⁸Ru,
¹²¹Sb, ⁷⁴Se, ⁷⁶Se, ¹⁶⁴Sm, ¹⁶⁸Sm,
¹⁵⁰Sm, ¹¹²Sn, ⁸⁸Sr, ⁸⁶Sr, ¹²⁴Te,
⁹⁰Zr

303 Erlangen-Nurnberg, University
Gluckstr.
852 Erlangen, West Germany

¹⁰⁸B, ¹¹⁰B, ¹⁰⁶Cd, ¹¹⁴Cd, ⁵²Cr, ²⁴Mg,
²⁶Mg, ⁹²Mo, ¹⁴²Nd, ¹⁸⁰O, ⁸⁸Rb, ⁸⁷Rb,
⁹⁶Ru, ²⁸Si, ³⁰Si, ¹⁴⁴Sm, ^{SS}, ¹²⁴Te,
¹²⁶Te, ¹³⁰Te, Tgs

304 Freiburg/Brsq., Universitat
7800 Freiburg/Brsq., Germany

¹⁴⁴Nd

305 Freie Universitat
1 Berlin 33, Germany

¹⁰⁸Cd, ¹¹⁰Cd, ¹¹¹Cd, ¹¹²Cd, ¹¹³Cd,
⁷³Ge, ¹⁹⁸Hg, ²⁰²Hg, ²⁰⁴Hg, ¹¹³In,
²⁰⁴Pb, ¹⁰²Pd, ¹⁰⁸Pd, ¹¹⁴Sn, ¹¹⁶Sn,
¹¹⁸Sn, ¹¹⁹Sn, ¹²⁰Sn, ¹²²Sn, ^{SS}, ¹²⁴Te,
¹²⁶Te, ¹³⁰Te, Tgs, ¹⁸⁰W, ¹⁷¹Yb,
¹⁷²Yb, ¹⁷⁴Yb, ¹⁷⁶Yb

306 Freie und Hansestadt Hamburg
2 Hamburg-Bahrenfeld, Germany

⁹⁴Ca, ⁵⁴Fe, ⁵⁷Fe, ⁵⁸Fe, ¹⁷⁴Hf,
¹⁷⁶Hf, ¹⁷⁹Hf, ¹⁴⁴Nd, ⁵⁸Ni, ¹⁶⁵Re,
²⁸Si, ¹⁴⁷Sm, ¹⁴⁹Sm, ¹⁶²Sm, ¹⁵⁴Sm,
¹¹⁷Sn, ¹¹⁹Sn, Tgs, ¹⁷³Yb, ¹⁷⁶Yb

307 Gesellschaft fur Kernforschung mbH
Institute fuer Angewandte Reaktor Physik
Weberstrasse 5
75 Karlsruhe
West Germany

¹¹⁸B, ¹³⁷Ba, ¹³⁸Ba, ¹³⁰Ce, ⁵⁰Cr, ⁵²Cr,
⁵³Cr, ¹⁵¹Eu, ⁵⁴Fe, ⁵⁷Fe, ⁵⁸Fe,
¹⁵⁵Gd, ⁷⁰Ge, ⁶¹Li, ⁶¹NI, ⁶²NI, ⁶⁴NI,
¹⁹⁶Pt, ⁸⁵Rb, ⁸⁷Rb, ^{SI}, ¹⁴⁴Sm,
¹⁵⁴Sm, ^{SS}, Tgs, ⁹⁸Tl, ⁵⁰Tl

308 Hahn-Meitner-Institut
fur Kernforschung Berlin, Sektor Kernphysik
Berlin, Germany

⁹⁸Ca, ¹¹¹Cd, ⁶³Cu, ⁶⁵Cu, ²⁴Mg, ⁹⁴Mo,
⁹⁶Mo, ⁹⁸Mo, ¹⁰⁰Mo, ⁶²NI, ⁶⁴NI,
¹⁰⁸Pd, ⁹⁹Ru, ¹⁰⁰Ru, ¹⁰¹Ru, ¹⁰²Ru,
¹⁰⁴Ru, ³²S, ²⁸Si, ¹¹²Sn, ^{SS}, Tgs,
⁴⁶Tl, ⁶⁷Zn

309 Heidelberg, Universitat
Heidelberg, Germany

⁶³Cu, ⁶⁵Cu, ⁵⁴Fe, ⁶¹Li, ⁵⁸NI, ⁶²NI,
⁷⁸Se, ⁸⁰Se, ⁸²Se, ⁶⁶Zn, ⁶⁸Zn

310 Johann Wolfgang Goethe University
Frankfurt/Main, Germany

¹¹³Cd, ¹⁶⁴Dy, ¹⁶⁶Er, ¹⁵⁴Gd, ¹⁷⁸Hf,
¹⁶⁰Hf, ⁹²Mo, ⁵⁸NI, ¹⁴⁹Sm, ¹⁵²Sm,
¹⁵⁶Sm, ¹¹⁶Sn, ¹²⁰Sn, ¹²²Sn, ¹²⁴Sn,
⁸⁶Sr, ⁸⁸Sr, ^{SS}, Tgs, ¹⁷²Yb, ¹⁷⁴Yb,
¹⁷⁶Yb, ⁹⁰Zr, ⁹²Zr

311 Karlsruhe, der Universitat
Engesserstrasse 7
75 Karlsruhe, West Germany

¹⁷⁰Er, ¹⁷⁶Yb

312 Kernforschung Sanlage
Postfach 365
517 Julich, Germany

⁷⁹Br, ⁹⁶Ca, ¹¹⁴Cd, ¹⁴²Ce, ⁵⁰Cr, ⁵²Cr,
⁶³Cu, ¹⁶¹Dy, ¹⁶³Dy, ¹⁶⁷Er, ⁵⁴Fe,
⁵⁶Fe, ¹⁵⁸Gd, ²⁰²Hg, ⁶¹Li, ²⁵Mg,
²⁶Mg, ⁹⁸Mo, ⁹⁶Mo, ⁹⁷Mo, ⁹⁸Mo,
¹⁰⁰Mo, ⁶⁰NI, ⁶²NI, ⁶⁴NI, ¹⁰²Ru,
¹⁰⁴Ru, ⁷⁶Se, ¹⁵²Sm, ⁸⁶Sr, ⁸⁸Sr,
¹²²Te, ¹⁸²W, ¹⁷¹Yb, ¹⁷³Yb, ¹⁷⁴Yb,
⁶⁸Zn, ⁹¹Zr, ⁹²Zr, ⁹⁴Zr

313 Kernkraftwerk Niederaichbach GmbH
Kraftwerkstrasse 25
8301 Niederaichbach Uber Landshut, West Germany

^{7Li}

314 Koln, Universitat
Zulpicher Str. 47
5 Koln 1, Germany

¹⁰⁸B, ¹¹⁰Cd, ¹¹²Cd, ¹¹⁶Cd, ⁵⁶Fe,
⁶⁴Ga, ⁷²Ge, ⁷³Ge, ⁷⁴Ge, ⁶¹K, ⁶¹Li,
⁶¹NI, ⁶²NI, ²⁰⁸Pb, ¹⁰⁵Pd, ¹¹⁰Pd,
⁹⁹Ru, ¹⁰⁰Ru, ¹⁰¹Ru, ¹⁰⁴Ru, ³⁰Si,
¹¹⁶Sn, ¹¹⁸Sn, ¹²⁰Sn, ¹²²Sn, ¹²⁴Sn, ^{SS},
¹²⁸Te, ¹³⁰Te, Tgs, ⁶⁷Zn, ⁷⁰Zn,
⁹⁰Zr

315 Mainz/Rhein, Universitat
Mainz am Rhein, Germany

¹⁵⁰Nd, ²⁰⁴Pb, ⁸⁸Sr, ^{SS}, Tgs, ²⁰³Tl,
²⁰⁵Tl, ⁹⁶Zr

316 Marburg/Lahn, Universitat
Marburg/Lahn, Germany

¹¹¹Cd, ¹¹³Cd, ¹⁹⁰Pt, ⁸⁵Rb, ¹⁶⁴Sm,
¹⁶⁷Sm, ¹⁴⁸Sm, ¹⁴⁹Sm, ¹⁵⁰Sm, ¹⁵²Sm,
¹⁵⁴Sm, ^{SS}

317 Max Planck Institut fur Kernphysik
Saupfercheckweg
Heidelberg, Germany

⁶⁰Ca, ⁹⁴Ca, ¹⁰⁶Cd, ¹¹³Cd, ¹⁴⁰Ce,
¹⁶⁶Er, ⁷⁰Ge, ⁷⁴Ge, ¹⁸⁰Hf, ⁶¹Li,
²⁴Mg, ¹⁶²Nd, ¹⁶⁴Nd, ²⁰⁸Pb, ¹⁴⁴Sm, ¹⁵⁴Sm,
¹¹⁶Sn, ¹²⁰Sn, ¹²²Sn, ^{SS}, Tgs, ¹⁸⁶W,
⁹⁰Zr, ⁹²Zr

318 Max-Planck Institut
Bottingerstrasse 6/8,
D34 Gottingen, West Germany
⁷Li

319 Max-Planck Institut fur Metallforschung-Verwaltung
92 Seestrasse
7000 Stuttgart, West Germany
⁶Li

320 Munchen, Technischen Hochschule
Arcistrasse 21
8 Munchen 2
Germany

⁴⁰Ca, ⁴²Ca, ⁴⁴Ca, ⁴⁶Ca, ⁴⁸Ca, ⁵⁰Fe,
¹⁷⁸Hf, ¹⁹⁸Hg, ¹⁹⁹Hg, ²⁰⁰Hg, ²⁰¹Hg,
²⁰²Hg, ²⁰⁴Hg, ¹¹³In, ⁶Li, ⁷Li, ²⁶Mg,
¹⁴⁸Nd, ¹⁵⁰Nd, ⁵⁸Ni, ⁶⁰Ni, ⁶²Ni,
⁶⁴Ni, ²⁰⁷Pb, ³⁴S, ²⁸Si, ³⁰Si, ¹⁴⁴Sm,
¹⁴⁸Sm, ⁸⁸Ts, ⁷⁴Tl, ⁴⁷Tl, ⁸⁸Tl,
⁹⁹Tl, ⁹⁰Tl, ²⁰⁵Tl, ⁹¹Zr

321 Munster, Universitat
44 Munster/Westfalen, Germany
⁴⁰Ca, ⁷⁴Ts

322 Philips Forschungslaboratorium GmbH
Weisshausstrasse (Postfach 1980)
51 Aachen, West Germany
¹²⁰Sn, ⁸⁸S

323 Technische Universitat Clausthal
Inst. fur Theoretische Hutenkunde
3392 Clausthal-Zellerfeld, West Germany
³⁰Si

324 der Universitat Dortmund
Postfach DC-Hombruch 500
4600 Dortmund-Eichlinghofen, Germany
³⁵Cl, ³⁷Cl, ⁵⁰Cr, ⁶³Cu, ⁶⁵Cu, ⁵⁴Fe,
⁵⁶Fe, ⁷⁰Ge, ⁷⁴Ge, ⁹²Mo, ¹⁰⁰Mo,
⁵⁸Ni, ⁶²Ni, ¹⁰⁴Pd, ¹¹⁰Pd, ⁸⁰Se,
¹²⁴Te, ¹³⁰Te, ⁸⁸Tl, ⁶⁴Zn, ⁶⁶Zn,
⁹⁰Zr, ⁹²Zr

325 der Universitat Wurzburg
Physikalisches Institut
Rennsteigring 8
8700 Wurzburg, Germany
¹⁵⁴Dy, ¹⁵²Gd

GREECE

326 Greek Atomic Energy Commission, N. R. C. Democ
Aghia Paraskevi Attikis
Athens, Greece

⁵⁷Fe

INDIA

327 Andhra University
Waltair, A. P., India

¹⁴²Ce, ¹⁵³Eu, ¹⁴⁶Nd, ¹⁴⁸Nd, ¹⁴⁷Re

328 Bhabha Atomic Research Centre
Government of India
3rd Floor Mohatta Building
Bombay 1, India

¹⁰⁸, ⁸¹Br, ⁴²Ca, ⁸¹K, ¹⁵⁰Nd, ⁸⁷Rb,
¹⁴⁴Sm

329 Panjab University
Chandigarh 14, India
¹⁷⁶Lu, ⁸¹I

330 Solid State Physics Laboratory
Lucknow Road
Delhi-7, India

¹⁰⁸, ¹¹⁸

331 Tata Institute of Fundamental Research
Holiday Camp, Colaba
Bombay 5, India
¹⁵⁴Dy, ⁷⁴Ge, ⁶Li, ⁷Li, ¹⁷⁶Lu

IRAQ

332 Atomic Energy Commission
Nuclear Research Institute
Tuwaitha, Baghdad, Iraq

¹¹²Sn

IRELAND

333 University College
Cork, Ireland

⁶³Cu

ISRAEL

334 Embassy of Israel
1621-22nd Street, N. W.
Washington, D. C. 20008

¹⁰⁴Cd, ⁷¹Ga, ⁸¹K, ⁶Li, ⁷Li, ⁸⁸S, ¹²⁸Te, ¹⁶⁸Yb

335 Government of Israel
Ministry of Defense
850 Third Avenue
New York, New York 10022
⁸¹K, ⁸⁸S, ¹⁶⁸Yb

336 Hebrew University of Jerusalem, The
Jerusalem, Israel

⁴⁰Ca, ¹³⁸Ce, ¹⁴⁰Ce, ¹⁴²Ce, ¹⁴⁴Er,
¹⁵⁴Gd, ¹⁵⁵Gd, ¹⁵⁶Gd, ¹⁵⁷Gd, ¹⁵⁸Gd,
¹⁶⁰Gd, ¹⁷⁸Hf, ⁸⁷Rb, ¹⁵⁴Sm, ⁸⁸Sr,
¹³⁰Te, ⁷⁴Ts, ¹⁶²W, ¹⁶⁸Yb, ¹⁷⁰Yb

337 Landseas Corporation
1212 Avenue of the Americas
New York, New York 10036

⁶³Cu, ⁷⁴Ge, ⁶²Ni, ⁶⁶Ni, ⁷⁶Se, ⁷⁸Se,
⁸⁰Se, ⁸⁶Sr, ⁸⁸Sr, ⁸⁸Zn, ⁹²Zr,
⁹⁴Zr

338 Tel-Aviv University
Ramat-Avit
Tel-Aviv, Israel

108, 150Sm, 152Sm, 154Sm, Tgs

ITALY

339 Centro Informazioni Studi Esperienze
Casella Postale 3986
Milano, Italy

107Ag, 109Ag, 170Er, 156Gd, 150Nd,
121Sb, 123Sb, 147Sm, 152Sm, 154Sm,
171Yb, 178Yb

340 Istituto Nazionale di Fisica Nucleare
Casella Postale 70
00044 Frascati, Rome, Italy

58Fe, 64Ni

341 Istituto Nazionale Fisica Nucleare
Viale Benedetto XV, 5
16132 Genova, Italy

118

342 Istituto Nazionale di Fisica Nucleare
Largo E. Fermi 2
50125 Florence, Italy

44Ca, 50Cr, 59Ti, 66Zn

343 Istituto Nazionale di Fisica Nucleare
Via A. Tari, 3
80138 Napoli, Italy

46Ca

344 Istituto di Chimica Biologica
Facoltà di Medicina E. Chirurgia
Università di Roma
00185 Roma, Italy

63Cu

345 Padova, Università Degli Studi di
Via F. Marzolo 8
Padova, Italy

44Ca, 52Cr, 53Cr, 73Ge, 34S, SS,
44Ti, 46Ti, 50Ti

JAPAN

346 Japan Radioisotope Association
Hcn-Komagome 2 Chome 28
Bunkyo-Ku
Tokyo, Japan

107Ag, 108Ag, 108B, 118, 138Ba,
138Ba, 40Ca, 44Ca, 106Cd, 108Cd,
110Cd, 113Cd, 114Cd, 116Cd, 136Ce,
140Ce, 50Cr, 53Cr, 54Cr, 162Dy,
164Dy, 151Eu, 152Eu, 54Fe, 57Fe,
158Gd, 160Gd, 70Ge, 72Ge, 74Ge,
76Ge, 178Hf, 179Hf, 180Hf, 204Hg,
6Li, 7Li, 175Lu, 24Mg, 25Mg, 26Mg,
92Mo, 94Mo, 96Mo, 98Mo, 100Mo,
142Nd, 143Nd, 144Nd, 150Nd, 50Ni,
60Ni, 62Ni, 64Ni, 206Pb, 207Pb,
208Pb, 104Pd, 105Pd, 106Pd, 50Rb,
87Rb, 105Re, 107Re, 98Ru, 100Ru,
101Ru, 104Ru, 33S, 34S, 76Se, 77Se,
78Se, 80Se, 29Si, 144Sm, 145Sm,
152Sm, 154Sm, 118Sn, 119Sn, 119Sn,
120Sn, 86Sr, 87Sr, 88Sr, SS, 126Te,
126Te, 128Te, 130Te, Tgs, 44Ti, 47Ti,
203Tl, 186W, 168Yb, 171Yb, 66Zn,
66Zn, 68Zn, 90Zr, 91Zr, 94Zr

347 Kansai Electronics Co., Ltd.
8 Togenochō
Kitaku, Osaka, Japan

108, 120Te, 126Te, 128Te, 130Te

348 Mitsubishi International Corporation
277 Park Avenue
New York, New York 10017

114Cd, 176Hf, 177Hf, 202Hg, 94Mo,
87Rb, 88Se, SI, SS, Tgs

KOREA

349 Yonsei University
Seoul, Korea

57Fe

NETHERLANDS

350 Instituut voor Kernfysisch Onderzoek
Posterringdijk 18
Amsterdam, Netherlands

116Cd, 6Li, 7Li, 92Mo, 128Sn

351 N. V. Philips
Gloeilampenfabrieken
Eindhoven, The Netherlands

170, 180

352 N. V. Philips-Duphar
P. O. Box 2
Weesp, The Netherlands

112Cd, 113Cd, 85Rb, SS

353 N.V. Prov. Zeeuwse Energie-Mij.
Poelendaesingel 10
Postbus 48
Middelburg, Netherlands

7Li

354 Reactor Centrum Nederland
Petten N. H., The Netherlands

108, 138Ba, 53Cr, 72Ge, 95Mo, 62Ni,
208Pb, 105Pd, 104Ru, SI, 29Si,
140Sm, SS, 163W, 66Zn, 66Zn, 66Zn

355 Rijksinkoopbureau
(Netherlands Govt. Purchasing Office)
55 A Laan van Meerdervoort
The Hague, Netherlands

109Ag, 112Cd, 114Cd, 116Cd,
160Ce, 162Ce, 57Fe, 160Gd, 113In,
115In, 6Li, 24Mg, 25Mg, 26Mg, 142Nd,
170, 180, 208Pb, 108Pd, 34S, 121Sb,
123Sb, 144Sm, 147Sm, 148Sm, 149Sm,
190Sm, 154Sm, 116Sn, 118Sn, 120Sn,
SS, 122Te, 128Te, Tgs, 44Ti, 50Ti,
170Yb, 178Yb

356 State University of Groningen
Westersingel 34
Groningen
The Netherlands

40Ca, 44Ca, 154Gd, 155Gd, 156Gd,
157Gd, 158Gd, 92Mo, 94Mo, 96Mo,
98Mo, 100Mo, 58Ni, 60Ni, 208Pb,
140Sm, 116Sn, 117Sn, 119Sn, 122Sn,
124Sn, 48Ti, 90Zr, 92Zr, 94Zr

357 Vrije Universiteit
Amsterdam, The Netherlands
⁷⁰Ge, ¹¹²Sn, ¹¹⁴Sn, Tgs

NEW ZEALAND

358 Office of the Minister
New Zealand Embassy
1145-19th Street
Washington, D. C. 20036
¹⁰⁸, ⁵⁴Fe, ⁵⁶Tl, ⁵⁰Tl, ⁶⁴Zn

359 Victoria University of Wellington
P. O. Box 196
Wellington, New Zealand
⁵⁷Fe

NORWAY

360 Bergen, University of
Bergen, Norway
¹²⁴Te, ¹²⁶Te, ¹²⁸Te, ¹³⁰Te

361 Institutt for Atomenergi
Kjeller, Norway
¹⁰⁸, ¹⁶¹Dy, ¹⁷⁰Er, ⁶⁰Ga, ⁷¹Ga,
¹⁶⁰Gd, ⁹⁸Mo, ¹⁴⁹Nd, ¹⁴⁹Sm, SS,
¹⁷³Yb

362 Oslo, Universitetet of
Blindern, Oslo 3, Norway
¹⁵⁴Gd

PORTUGAL

363 Magnetrom-Comercio e Industria de Aparelhagem Elec
Rua Fialho de Almeida, 36-A
Lisbon 1, Portugal
¹⁴⁶Nd

SCOTLAND

364 Aberdeen, University of
Maternity Hospital
Obstetrics and Gynecology
Clinical Research Unit
Foresterhill, Aberdeen, Scotland
⁸¹Br

365 Glasgow, University of
Glasgow, W.2. Scotland
¹⁰⁴Pd, ¹⁰⁶Pd, ¹⁰⁸Pd, ¹¹⁰Pd, ¹²²Sn,
¹²⁴Sn, Tgs

366 Scottish Research Reactor Centre
East Kilbride, Glasgow, Scotland
⁸⁷Sr

SOUTH AFRICA

367 J. A. Ewing and McDonald, Inc.
51 Madison Avenue
New York, New York 10010
⁶³Cu, ⁶⁹Ga

368 D. Roetger
P. O. Box 293
Pretoria, South Africa
⁶¹I

369 South African Atomic Energy Board
Private Bag 256
Pretoria, South Africa
¹⁹³Ir, ⁶¹I

370 Southern Universities Nuclear Institute
P. O. Box 17
Faure, C.P., South Africa
⁶⁵Cu

371 Well Organization (Pty.) Ltd.
P. O. Box 10924
Johannesburg, South Africa
¹⁰⁸

372 Witwatersrand University
Johannesburg, South Africa
⁵⁰Ni, Tgs

SPAIN

373 Madrid, Universidad de
Departamento de Petrologia
Facultad de Ciencias
Madrid, Spain
⁸⁷Rb, ⁸⁶Sr

SWEDEN

374 Aktiebolaget Atomenergi
Studsvik,
Nykoping, Sweden
⁵⁰Cr, ⁵⁰Ni

375 Lund Institute of Technology
Box 725
Lund 7, Sweden
⁵⁰Ni, Tgs

376 Stockholm, University of
Vanadisvagen 9
Stockholm VA, Sweden
¹²⁸Te

377 Uppsala, University of
Uppsala, Sweden

¹⁰⁶Cd, ¹⁰⁸Cd, ¹¹⁰Cd, ¹⁴⁰Ce, ¹⁶⁴Dy,
¹⁶⁴Er, ¹⁵¹Eu, ¹⁵³Eu, ⁵⁴Fe, ⁵⁶Fe,
¹⁶⁰Gd, ¹¹⁵In, ⁹⁸Mo, ¹⁴³Nd, ⁵⁰Ni,
¹⁰²Pd, ¹⁰⁴Pd, ¹⁰⁵Pd, ¹⁰⁶Pd, ¹¹⁰Pd,
¹⁹⁴Pt, ¹⁸⁵Re, ¹⁴⁵Sm, ¹⁴⁷Sm, ¹⁴⁸Sm,
¹⁴⁹Sm, ¹⁵⁰Sm, ¹⁵²Sm, ¹⁵⁴Sm, Tgs,
¹⁸²W, ¹⁸⁴W, ¹⁸⁶W

SWITZERLAND

378 Bern Universitat
3000 Bern, Switzerland

SS

379 Eidg. Institut fur Reaktorforschung
Wurenlingen, Switzerland

^{130}Ba , ^{46}Ca , ^{48}Ca , ^{63}Cu , ^{151}Eu ,
 ^{153}Eu , ^{6}Li

380 Eidg. Technische Hochschule
8049 Zurich, Switzerland

^{50}Cr , ^{24}Mg , ^{26}Mg , ^{30}Si , SS, Tgs

381 Erlboug, University of
1700 Fribourg, Switzerland

^{193}Ir , ^{168}Yb

382 Swiss Federal Institute of Technology
Sonneneggstrasse 5
CH-8006 Zurich, Switzerland

^{207}Pb , Tgs

383 Zurich, der Universitat
8001 Zurich, Switzerland

^{88}Sr

VENEZUELA

384 Instituto Venezolano de
Investigaciones Cientificas
Apartado 1827
Caracas, Venezuela

^{57}Fe

YUGOSLAVIA

385 Nuklearni Institut Jozef Stefan
Jemova 39
Ljubljana, Yugoslavia

$\bullet\text{Li}$

**II. ALPHABETICAL LIST OF ISOTOPES,
CROSS-REFERENCED TO CUSTOMER NUMBERS**

A. Domestic

Antimony 121	Cadmium 114
33, 109, 170	8, 76, 110, 120, 123, 141, 142, 144, 145, 162, 165, 169, 178, 181
Antimony 123	Cadmium 116
2, 21, 33, 170, 212	3, 10, 168
Barium 130	Calcium 040
32	1, 6, 45, 136, 170, 178
Barium 132	Calcium 042
32, 64, 120	23, 140, 142, 153, 163, 178, 212
Barium 134	Calcium 043
2, 32, 119, 141, 153	8, 43, 178
Barium 135	Calcium 044
21, 103, 141	1, 6, 64, 95, 113, 120, 136, 153, 170, 178, 182, 196, 203, 212
Barium 136	Calcium 046
6, 119, 126	8, 21, 64
Barium 137	Calcium 048
141, 190, 212	8, 15, 21, 23, 31, 32, 79, 102, 108, 109, 110, 164, 178, 196, 218
Barium 138	Carbon 013
6, 32, 119, 126, 155, 178	178
Boron 010	Cerium 136
2, 11, 18, 31, 37, 43, 46, 50, 53, 58, 70, 76, 79, 101, 119, 133, 140, 146, 150, 153, 170, 178, 186, 187, 201, 207, 213, 214	32, 108, 170
Boron 011	Cerium 138
8, 21, 32, 63, 69, 93, 101, 140, 153, 170, 178	170
Bromine 079	Cerium 140
8, 31, 115, 193, 216	21, 33, 64, 76, 120, 155, 170
Bromine 081	Cerium 142
115, 216	21, 68, 108, 170
Cadmium 106	Chlorine 035
32, 108, 142, 155, 178, 179, 207	4, 17, 20, 23, 27, 31, 33, 59, 100, 109, 117, 135, 142
Cadmium 108	Chlorine 037
120, 142, 178	23, 27, 31, 33, 99, 100, 126, 135, 195, 212
Cadmium 110	Chromium 050
31, 136, 142, 165	8, 21, 24, 64, 100, 110, 119, 120, 141, 170
Cadmium 111	Chromium 052
212	33, 204
Cadmium 112	Chromium 053
105, 107, 109, 110, 118, 120, 136, 142, 145, 165, 209	2, 60, 100, 190, 212
Cadmium 113	Chromium 054
17, 159, 163	32, 119, 143, 153, 183
	Copper 063
	1, 8, 19, 26, 33, 79, 81, 91, 100, 131, 143, 177, 178, 181

Copper 065	Gadolinium 160
1, 8, 14, 19, 26, 31, 33, 77, 81, 100, 125, 135, 143, 153, 170, 178, 181, 212	28, 33, 92, 101, 108, 119, 120, 128, 142, 148, 170, 178, 194
Dysprosium 158	Gallium 069
32, 76, 120, 177	3, 126
Dysprosium 160	Gallium 071
32	2, 68, 94, 126, 178, 212
Dysprosium 161	Germanium 070
24, 38, 128, 194, 212	85, 100, 113, 135
Dysprosium 162	Germanium 072
21, 24, 109, 119, 149, 178, 218	8, 17, 24, 85, 113, 135, 136
Dysprosium 163	Germanium 073
21, 24, 38, 108, 132, 212	17, 108, 113, 212
Dysprosium 164	Germanium 074
21, 24, 28, 29, 108, 109, 110, 132, 218	17, 85, 100, 113, 119, 135
Erbium 162	Germanium 076
76	8, 85, 101, 108, 113, 155, 212
Erbium 164	Hafnium 176
178	92, 143, 153, 170
Erbium 166	Hafnium 177
14, 87, 109, 113, 149	91, 92, 153, 170
Erbium 167	Hafnium 178
38, 79, 103, 113, 178	91, 92, 143, 153, 170
Erbium 168	Hafnium 179
28, 109, 141, 165, 178	31, 91, 92, 134, 153, 170
Erbium 170	Hafnium 180
14, 33, 79, 108, 109, 178	92, 143, 153, 170, 212
Europium 151	Indium 113
3, 21, 40, 103, 113, 128, 132, 148, 170, 218	95, 178
Europium 153	Indium 115
21, 24, 54, 103, 113, 132, 148, 163, 207, 212, 218	21, 178
Gadolinium 154	Iridium 191
33, 92, 132, 178	8, 32
Gadolinium 155	Iridium 193
21, 33, 40, 92, 101, 132, 212	8, 32, 96, 178
Gadolinium 156	Iron 054
92, 101, 111, 132, 178, 218	1, 8, 28, 33, 53, 64, 85, 103, 108, 110, 119, 120, 132, 143, 155, 170, 177, 183, 199, 204, 208, 219
Gadolinium 157	Iron 056
21, 92, 132, 142, 212	1, 8, 21, 32, 33, 35, 109, 120, 132, 170, 173, 178, 204, 216
Gadolinium 158	Iron 057
92, 109, 113, 170, 218	17, 21, 30, 31, 33, 35, 41, 42, 52, 55, 58, 60, 79, 97, 98, 108, 109, 120, 131, 137, 169, 170, 196, 197, 200, 208, 212, 216

- Iron 058**
- 21, 32, 53, 64, 120, 177, 178
- Lanthanum 139**
- 170
- Lead 204**
- 8, 33, 153, 179, 207, 217
- Lead 206**
- 17, 31, 43, 44, 111, 126, 153, 163, 202
- Lead 207**
- 8, 17, 29, 32, 43, 44, 79, 111, 153, 178, 202, 212
- Lead 208**
- 17, 43, 44, 45, 62, 90, 101, 109, 111, 121, 126, 153, 159, 165, 169, 173, 178, 194, 202, 203, 208, 216
- Lithium 006**
- 7, 8, 11, 21, 27, 28, 32, 54, 57, 70, 71, 83, 100, 101, 104, 109, 119, 125, 126, 127, 132, 136, 140, 143, 153, 170, 174, 178, 184, 207, 213, 214, 218
- Lithium 007**
- 16, 28, 32, 33, 36, 48, 49, 56, 71, 82, 119, 121, 138, 148, 154, 178, 184, 207, 213, 215, 216, 218
- Lutetium 175**
- 141, 153, 161, 176
- Lutetium 176**
- 32, 76, 134, 194
- Magnesium 024**
- 89, 100, 108, 141, 143, 170, 216
- Magnesium 025**
- 8, 108, 212
- Magnesium 026**
- 47, 53, 89, 100, 108, 126, 165, 170, 212
- Mercury 198**
- 24, 28, 31, 211
- Mercury 199**
- 24, 157, 191, 211
- Mercury 200**
- 28, 108, 203, 207, 211
- Mercury 201**
- 13, 21, 24, 119, 167, 211
- Mercury 202**
- 12, 28, 180, 191, 211, 218
- Mercury 204**
- 24, 28, 31, 157, 211
- Molybdenum 092**
- 1, 8, 21, 33, 35, 69, 100, 108, 143, 153, 155, 207
- Molybdenum 094**
- 109
- Molybdenum 095**
- 67, 79, 141, 143, 163
- Molybdenum 096**
- 8, 35
- Molybdenum 097**
- 2, 94, 141
- Molybdenum 098**
- 8, 21, 64, 178
- Molybdenum 100**
- 1, 8, 21, 33, 35, 51, 100, 118, 119, 170
- Neodymium 142**
- 1, 27, 31, 119, 168, 170, 178
- Neodymium 143**
- 3, 24, 38, 79
- Neodymium 144**
- 3
- Neodymium 145**
- 3, 24, 38, 79
- Neodymium 146**
- 3, 76, 109, 119, 168, 178
- Neodymium 148**
- 3, 24, 40, 170
- Neodymium 150**
- 1, 3, 24, 31, 148
- Nickel 058**
- 8, 21, 22, 26, 28, 32, 53, 81, 100, 101, 110, 111, 114, 119, 125, 132, 140, 143, 152, 153, 159, 170, 172, 183, 204, 216
- Nickel 060**
- 8, 21, 22, 32, 53, 85, 110, 111, 114, 140, 153, 159, 178, 188, 204, 216
- Nickel 061**
- 8, 21, 212
- Nickel 062**
- 1, 2, 8, 33, 53, 64, 74, 81, 100, 111, 132, 140, 152, 163, 170, 172, 178, 190
- Nickel 064**
- 8, 21, 26, 33, 40, 101, 119, 124, 126, 132, 155

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Osmium 186	Rubidium 085
101	8, 44, 66, 76, 124, 175
Osmium 187	Rubidium 087
194	32, 44, 45, 58, 61, 65, 66, 73, 76, 124, 175, 191, 203, 209
Osmium 189	Ruthenium 096
194	8, 24, 28, 35, 219
Osmium 190	Ruthenium 099
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Oxygen 018	Ruthenium 101
8, 21, 53, 64, 79, 89, 118, 143, 156, 181, 198	208
Palladium 102	Ruthenium 102
27, 33, 143	24, 178
Palladium 104	Ruthenium 104
100, 108, 178	24, 101, 109, 120
Palladium 105	Samarium 144
148	108, 111, 120, 170, 178
Palladium 106	Samarium 147
178	1, 8, 40, 111, 212, 218
Palladium 108	Samarium 148
32, 76, 178	24, 31, 33, 40, 111, 170, 210, 218
Palladium 110	Samarium 149
3, 31, 32, 94, 100, 103, 178	21, 31, 40, 128, 212, 218
Platinum 192	Samarium 150
64, 219	40, 103, 113, 143, 178, 216, 218
Platinum 194	Samarium 152
21, 94, 160	21, 108, 113, 178
Platinum 195	Samarium 154
54, 119, 143	1, 24, 28, 109, 111, 113, 120, 126, 178, 218
Platinum 196	Selenium 074
8, 178	64, 99, 120, 130, 147
Potassium 039	Selenium 076
45	28, 31, 32, 130, 176, 208
Potassium 040	Selenium 077
33	2, 32, 98, 176, 208, 212
Potassium 041	Selenium 078
3, 9, 21, 34, 45, 76, 110, 127, 128, 155, 177, 190, 203	28, 31, 32, 130, 176
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2, 21, 80, 94, 108, 170, 194	31, 208

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Silicon 030
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Silver 109
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Tellurium 126
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Tellurium 128
 21, 31, 32, 39, 110, 120, 143

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Tin 114
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Tin 116
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Tin 117
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Tin 118
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Tin 119
 79, 109, 120, 128, 170

Tin 120
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Tin 122
 21, 31

Tin 124
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Titanium 047
 21, 42, 94, 129, 153, 178

Titanium 048	Zirconium 090
8, 31, 32, 33, 42, 110, 129, 141, 143, 158, 204, 216, 218	8, 35, 45, 91, 101, 110, 113, 143, 159, 165
Titanium 049	Zirconium 091
42, 113, 129	8, 94, 113, 134
Titanium 050	Zirconium 092
8, 32, 42, 113, 129, 153, 204, 218	8, 91, 113, 143, 178
Tungsten 180	Zirconium 094
120, 165, 178	1, 91, 113, 143, 178
Tungsten 182	Zirconium 096
8, 11, 39, 86, 108, 141, 143, 168, 211	35, 113, 143, 178, 208
Tungsten 183	B. Foreign
86, 94, 141, 211, 212	Antimony 121
Tungsten 184	264, 284, 286, 302, 339, 355
8, 11, 96, 120, 141, 211	Antimony 123
Tungsten 186	286, 339, 355
8, 11, 21, 68, 120, 141, 211	Barium 130
Ytterbium 168	268, 282, 379
63, 64, 68, 120	Barium 134
Ytterbium 170	267, 268, 299, 302
24, 170	Barium 135
Ytterbium 171	286, 302, 354
24, 170, 205, 212	Barium 136
Ytterbium 172	268, 346
8, 24, 108, 170, 218	Barium 137
Ytterbium 173	286, 307
8, 87, 108, 132	Barium 138
Ytterbium 174	286, 307, 346
8, 10, 28, 87, 108, 132, 170, 171, 178, 205	Boron 010
Ytterbium 176	223, 225, 231, 239, 242, 247, 250, 251, 263, 286, 299, 303, 314, 328, 330, 338, 346, 347, 354, 358, 361, 371
Zinc 064	Boron 011
1, 9, 33, 81, 85, 100, 110, 126, 129, 140, 170, 204	247, 251, 272, 280, 284, 286, 287, 299, 303, 307, 330, 341, 346
Zinc 066	Bromine 079
32, 33, 105, 110, 120, 126, 129, 140, 178, 204	225, 312
Zinc 067	Bromine 081
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IX. STABLE ISOTOPE SALES - FY 1973

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Antimony-121	2	200	310	6	451	699	1	50	78	9	701	1,087
Antimony-123	2	101	157	3	250	388	3	150	232	8	501	777
Barium-130				4	130	3,360		24	576	4	154	3,936
Barium-132	4	350	5,775				1	130	1,416	5	480	7,191
Barium-134	3	81	209	4	61	146	3	400	960	10	542	1,315
Barium-135	2	75	143	3	16	30				5	91	173
Barium-136	3	250	350	2	90	126				5	340	476
Barium-137	2	60	63	2	800	840	1	50	53	5	910	956
Barium-138	5	1,150	173	6	3,750	563	3	2,250	337	14	7,150	1,073
Boron-10	29	1,433,500	12,597	32	870,650	8,259	8	70,100	616	69	2,374,250	21,472
Boron-11	15	23,300	779	14	38,250	1,514	11	61,010	1,817	40	122,560	4,110
Bromine-79	3	270	864	2	150	480	2	120	384	7	540	1,728
Bromine-81	2	170	527	4	560	1,590				6	730	2,117
Cadmium-106	5	56	532	11	211	2,106	2	214	1,881	18	481	4,519
Cadmium-108	4	1,244	14,361	10	237	2,671		86	838	14	1,567	17,870
Cadmium-110	4	345	174	7	1,870	656	1	400	260	12	2,615	1,090
Cadmium-111				6	690	448	1	50	33	7	740	481
Cadmium-112	16	43,546	13,064	7	2,150	645				23	45,696	13,709
Cadmium-113	4	300	225	7	995	746				11	1,295	971
Cadmium-114	15	53,345	13,336	17	31,806	7,952	2	350	58	34	85,501	21,346
Cadmium-116	2	70	70	11	4,910	4,910	1	20	20	14	5,000	5,000
Calcium-40	4	315	79	17	4,680	1,270	1	214	53	22	5,209	1,402
Calcium-42	6	203	1,600	10	605	4,802	1	197	1,675	17	1,005	8,077
Calcium-43	1	18	396	2	14	584	2	218	3,714	5	250	4,694
Calcium-44	17	2,795	6,090	15	1,515	3,364	2	508	1,168	34	4,818	10,622
Calcium-46	2	30	10,950	9	67	49,175	2	2	1,245	13	99	61,370
Calcium-48	17	199	5,161	19	535	12,870	4	95	2,116	40	829	20,147
Carbon-13								755	1,918		755	1,918
Cerium-136	2	30	585	1	100	1,950	3	320	4,118	6	450	6,653
Cerium-138	1	20	200	3	51	467				4	71	667
Cerium-140	7	4,430	664	13	9,120	1,368				20	13,550	2,032
Cerium-142	3	220	308	7	560	784				10	780	1,092
Chlorine-35	13	5,291	2,610	10	6,096	2,788	2	600	300	25	11,987	5,698
Chlorine-37	8	1,004	1,429	7	3,996	5,594	3	650	1,103	18	5,650	8,126

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Chromium-50	7	680	1,768	26	4,447	10,150	2	200	440	35	5,327	12,358
Chromium-52	1	100	55	9	5,135	2,824	1	300	165	11	5,535	3,044
Chromium-53	4	161	145	5	2,183	1,962	1	100	90	10	2,444	2,197
Chromium-54	3	225	990	7	433	1,906	1	99	216	11	757	3,112
Copper-63	18	2,891	568	14	1,930	386	3	450	90	35	5,271	1,044
Copper-65	16	1,671	571	7	1,670	584	6	950	333	29	4,291	1,488
Dysprosium-156				1	2	64				1	2	64
Dysprosium-158	5	130	845	4	36	506	1	5	71	10	171	1,422
Dysprosium-160				3	250	620	1	10	28	4	260	648
Dysprosium-161	4	1,350	540	5	370	148	1	50	20	10	1,770	708
Dysprosium-162	3	5,450	2,180	1	30	12	1	486	194	5	5,966	2,386
Dysprosium-163	3	1,250	438	1	100	35	1	50	110	5	1,400	583
Dysprosium-164	7	2,280	410	6	1,450	363	2	400	100	15	4,130	873
Erbium-162	1	10	200							1	10	200
Erbium-164				6	420	1,355	1	90	338	7	510	1,693
Erbium-166	6	520	146	7	975	268				13	1,495	414
Erbium-167	4	650	390	7	670	402	1	1,667	660	12	2,987	1,452
Erbium-168	4	570	582	5	3,425	1,713	2	450	227	11	4,445	2,522
Erbium-170	3	400	200	8	770	385	2	110	55	13	1,280	640
Europium-151	8	1,110	499	10	949	427	2	350	158	20	2,409	1,084
Europium-153	7	492	246	7	715	358	1	3,406	1,132	15	4,613	1,736
Gadolinium-152				2	30	228				2	30	228
Gadolinium-154	1	10	31	8	386	3,576	2	247	1,237	11	643	4,844
Gadolinium-155	7	295	557	9	1,610	2,254	3	1,705	1,911	19	3,610	4,722
Gadolinium-156	4	295	265	7	475	428	1	68	61	12	838	754
Gadolinium-157	3	65	144	5	310	310	2	763	763	10	1,138	1,217
Gadolinium-158	5	545	300	10	1,750	963		39	21	15	2,334	1,284
Gadolinium-160	10	1,270	759	11	1,720	904	1	138	89	22	3,128	1,752
Gallium-69	1	50	27	4	645	355	1	30	17	6	725	399
Gallium-71	4	71	71	2	270	270	3	75	75	9	416	416
Germanium-70	3	300	90	18	4,721	1,416		59	27	21	5,080	1,533
Germanium-72	5	660	198	9	1,535	460	1	109	33	15	2,304	691
Germanium-73	4	284	317	4	760	760	1	50	50	9	1,094	1,127
Germanium-74	6	2,520	504	14	4,460	1,267		1,000	200	20	7,980	1,971
Germanium-76	4	160	352	12	810	1,782	2	248	546	18	1,218	2,680
Hafnium-174				4	55	1,265				4	55	1,265
Hafnium-176	3	45	194	2	8,739	473		219	591	5	9,003	1,258
Hafnium-177	3	125	137	2	162	159		120	90	5	407	386

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Hafnium-178	4	200	100	3	400	200		926	463	7	1,526	763
Hafnium-179	4	130	202	9	865	1,298	2	1,066	1,358	15	2,061	2,858
Hafnium-180	3	250	125	4	750	375	1	4,497	1,518	8	5,497	2,018
Indium-113	1	40	480	7	156	1,152				8	196	1,632
Indium-115				4	260	117	2	150	68	6	410	185
Iridium-191					1	18	2	40	1,341	3	41	1,359
Iridium-193	1	3	90	2	26	780	3	65	1,950	6	94	2,820
Iron-54	28	3,658	5,487	28	4,171	6,257	2	250	375	58	8,079	12,119
Iron-56	12	7,850	508	12	5,100	505	5	4,995	286	29	17,945	1,299
Iron-57	45	8,829	22,089	30	4,784	13,122	5	800	2,640	80	14,413	37,851
Iron-58	7	381	10,026	6	275	6,565	3	113	1,093	16	769	17,684
Lanthanum-139	1	100	100							1	100	100
Lead-204	4	114	1,015	17	1,791	10,004	3	34	136	24	1,939	11,155
Lead-206	9	1,395	837	10	5,400	3,240	1	500	300	20	7,295	4,377
Lead-207	7	6,500	2,850	8	2,420	3,118	4	8,389	2,550	19	17,309	8,518
Lead-208	22	11,398	2,210	17	9,600	1,965	1	1,000	200	40	21,998	4,375
Lithium-6	52	3,611,000	8,487	49	2,151,420	7,865	13	1,196,000	3,117	114	6,958,420	19,469
Lithium-7	130	313,297,000	91,812	23	57,349,000	15,371	7	341,000	401	160	370,987,000	107,584
Lutetium-175	2	300	105	2	15	5				4	315	110
Lutetium-176	2	201	8,643	3	27	1,161	1	15	645	6	243	10,449
Magnesium-24	7	685	240	25	8,345	2,921				32	9,030	3,161
Magnesium-25	1	20	50	6	850	2,127	1	50	125	8	920	2,302
Magnesium-26	13	1,090	1,581	14	1,787	2,591	1	100	145	28	2,977	4,317
Mercury-196				13	542	181,020				13	542	181,020
Mercury-198	8	102	1,102	3	130	1,230	1	100	726	12	332	3,058
Mercury-199	6	407	2,646	3	75	487				9	482	3,133
Mercury-200	7	142	568	4	140	560				11	282	1,128
Mercury-201	6	87	878	1	30	293				7	117	1,171
Mercury-202	10	555	1,238	10	860	1,563				20	1,415	2,801
Mercury-204	4	85	837	8	940	4,725	1	100	750	13	1,125	6,312
Molybdenum-92	14	1,755	527	13	3,761	1,128	2	1,351	405	29	6,867	2,060
Molybdenum-94	1	500	250	5	351	175				6	851	425
Molybdenum-95	6	2,010	555	6	450	405				12	2,460	960
Molybdenum-96	2	150	37	7	750	188				9	900	225
Molybdenum-97	3	411	185	6	430	193				9	841	378
Molybdenum-98	5	258,707	219,901	15	160,800	136,680	1	177	150	21	419,684	356,731
Molybdenum-100	11	4,285	2,142	7	1,550	775	8	380	190	26	6,215	3,107

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Neodymium-142	6	1,070	642	10	7,700	4,620	7	680	408	23	9,450	5,670
Neodymium-143	2	630	567	4	330	297				6	960	864
Neodymium-144				3	1,400	420				3	1,400	420
Neodymium-145	2	542	677	6	300	375				8	842	1,052
Neodymium-146	5	920	414	6	1,695	763	5	578	260	16	3,193	1,437
Neodymium-148	3	389	447	6	970	1,116				9	1,359	1,563
Neodymium-150	2	102	138	16	4,475	6,041		500	675	18	5,077	6,854
Nickel-58	28	5,545	826	33	7,520	1,128	1	100	15	62	13,165	1,969
Nickel-60	10	3,050	610	12	2,070	414	2	115,300	15,240	24	120,420	16,264
Nickel-61				8	1,442	5,036	2	120	504	10	1,562	5,540
Nickel-62	18	3,276	4,095	28	4,802	6,003	2	150	187	48	8,228	10,285
Nickel-64	9	356	2,100	13	779	4,596	3	15,451	60,598	25	16,586	67,294
Nitrogen-15							2	30,000	10,811	2	30,000	10,811
Osmium-186		16	320								16	320
Osmium-187		41	574	1	16	224				1	57	798
Osmium-189		74	166								74	166
Osmium-190	1	100	160							1	100	160
Oxygen-17				3	7,288	3,072				3	7,288	3,072
Oxygen-18	9	8,094	3,185	7	10,111	4,911	9	9,881	8,891	25	28,086	16,987
Palladium-102	2	22	1,210	7	72	3,960	1	6	330	10	100	5,500
Palladium-104	3	120	510	7	186	790	1	168	714	11	474	2,014
Palladium-105				6	390	667				6	390	667
Palladium-106				5	315	614		180	351	5	495	965
Palladium-108	1	40	56	12	785	1,120	2	1,471	1,672	15	2,296	2,848
Palladium-110	3	105	383	11	445	1,624	3	914	2,492	17	1,464	4,499
Platinum-190				1	6	90				1	6	90
Platinum-192	2	60	720	2	21	112				4	81	832
Platinum-194	3	310	124	4	665	266	1	100	40	8	1,075	430
Platinum-195	3	355	976	1	315	394				4	670	1,370
Platinum-196				1	20	32	2	464	464	3	484	496
Potassium-39	1	500	400	2	400	320				3	900	720
Potassium-40				1	9	364		6	(656)	1	15	(292)
Potassium-41	17	915	4,590	11	673	3,371	2	60	300	30	1,648	8,261
Rhenium-185	8	921	599	10	550	357	1	100	65	19	1,571	1,021
Rhenium-187	4	1,089	436	6	400	160				10	1,489	596
Rubidium-85	5	912	502	14	2,381	1,310	1	300	165	20	3,593	1,977
Rubidium-87	18	3,662	3,753	18	3,315	3,387	1	1,000	759	37	7,977	7,899

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Ruthenium-96	5	51	510	3	110	1,100	1	8	80	9	169	1,690
Ruthenium-98					1	13				1	1	13
Ruthenium-99	3	250	917	5	664	2,138				8	914	3,055
Ruthenium-100				4	270	1,182				4	270	1,182
Ruthenium-101	2	70	210	6	360	1,072				8	430	1,282
Ruthenium-102	1	3	5	5	600	930	1	200	205	7	803	1,140
Ruthenium-104	5	101	263	7	700	1,820				12	801	2,083
Samarium-144	4	400	265	22	1,698	1,377	3	530	487	29	2,628	2,129
Samarium-147	4	420	126	9	1,220	368	2	4,050	807	15	5,690	1,301
Samarium-148	5	600	240	8	3,336	1,334	1	210	208	14	4,146	1,782
Samarium-149	4	800	280	14	712	249	3	1,020	357	21	2,532	886
Samarium-150	8	850	635	10	3,486	1,751	2	200	100	20	4,536	2,486
Samarium-152	2	160	24	14	5,295	796	1	30	4	17	5,485	824
Samarium-154	9	10,770	1,615	17	7,020	1,055	3	170	93	29	17,960	2,763
Selenium-74	9	1,248	16,838	6	296	4,952				15	1,544	21,790
Selenium-76	6	145	243	6	411	568	2	110	126	14	666	937
Selenium-77	5	106	265	4	75	187	2	60	150	11	241	602
Selenium-78	4	135	88	5	260	169	3	230	149	12	625	406
Selenium-80	1	50	50	13	2,450	2,070	2	220	220	16	2,720	2,340
Selenium-82	2	55	102	2	80	193	2	60	111	6	195	406
Silicon-28	3	1,317	1,515	7	675	776	2	220	253	12	2,212	2,544
Silicon-29	2	130	683	5	320	1,680	3	160	727	10	610	3,090
Silicon-30	9	625	3,281	12	1,127	5,423	3	140	735	24	1,892	9,439
Silver-107	3	270	121	4	231	104	9	184	83	16	685	308
Silver-109	5	480	285	5	630	378	3	275	165	13	1,385	828
Strontium-84	7	1,201	30,015	14	1,072	24,336	3	17	315	24	2,290	54,666
Strontium-86	3	269	134	10	1,451	725	2	75	38	15	1,795	897
Strontium-87	3	570	393	4	363	254	1	50	35	8	983	682
Strontium-88	9	4,950	247	11	7,650	383	5	33,250	1,153	25	45,850	1,783
Sulfur-32	1	20	20	7	540	540	2	150	150	10	710	710
Sulfur-33	2	60	167	5	32	2,368	3	160	14,542	10	252	17,077
Sulfur-34	8	1,355	2,970	19	1,792	4,821	1	100	850	28	3,247	8,641
Sulfur-36				2	6	4,590	1	12	1,742	3	18	6,332
Tantalum-180							1	3	1,505	1	3	1,505
Tellurium-120	2	30	1,200	3	37	346	4	124	2,728	9	191	4,274
Tellurium-122	6	3,675	7,717	5	757	1,590	4	1,348	2,118	15	5,780	11,425
Tellurium-123	1	640	4,000	2	60	130	3	75	469	6	775	4,599

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Tellurium-124	13	8,930	9,502	9	781	740	3	265	299	25	9,976	10,541
Tellurium-125	9	2,575	1,803	5	1,410	912	1	50	35	15	4,035	2,750
Tellurium-126	3	650	390	7	800	480	4	1,030	618	14	2,480	1,488
Tellurium-128	6	1,100	330	15	5,450	1,630	4	4,600	1,280	25	11,150	3,240
Tellurium-130	3	931	233	20	4,720	1,180	3	2,510	627	26	8,161	2,040
Thallium-203	2	454	136	5	15,300	4,590	4	2,250	675	11	18,004	5,401
Thallium-205	2	1,100	220	3	4,000	800		250	50	5	5,350	1,070
Tin-112	7	2,660	22,610	7	4,941	41,999	7	688	4,230	21	8,289	68,839
Tin-114				2	290	1,740	1	50	300	3	340	2,040
Tin-116	11	2,200	664	8	1,020	306	1	500	150	20	3,720	1,120
Tin-117	1	10	5	2	3,100	1,550				3	3,110	1,555
Tin-118	7	11,100	3,490	7	3,000	450	3	1,150	355	17	15,250	4,295
Tin-119	6	2,950	1,033	11	3,400	1,190				17	6,350	2,223
Tin-120	6	16,400	4,100	10	4,000	1,000	1	1,000	250	17	21,400	5,350
Tin-122				9	1,660	1,079	1	737	479	10	2,397	1,558
Tin-124	9	2,200	1,210	8	1,160	638	3	2,450	992	20	5,810	2,840
Titanium-46	7	493	660	13	1,210	1,694	1	100	110	21	1,803	2,464
Titanium-47	5	980	1,323	4	350	473	2	110	148	11	1,440	1,944
Titanium-48	9	1,705	341	12	2,035	407	5	930	186	26	4,670	934
Titanium-49	3	45	104	3	210	483				6	255	587
Titanium-50	6	340	727	16	895	2,047	2	130	228	24	1,365	3,002
Tungsten-180	3	57	762	4	76	2,564	1	5	742	8	138	4,068
Tungsten-182	7	1,180	295	7	1,540	385	1	200	50	15	2,920	730
Tungsten-183	4	210	126				1	50	30	5	260	156
Tungsten-184	5	475	143	4	1,300	390				9	1,775	533
Tungsten-186	8	1,070	374	9	2,105	737				17	3,175	1,111
Ytterbium-168	6	180	2,275	14	500	4,444				20	680	6,719
Ytterbium-170	1	247	494	7	1,280	2,560				8	1,527	3,054
Ytterbium-171	2	251	136	5	703	316	1	50	22	8	1,004	474
Ytterbium-172	5	549	220	4	750	300	2	170	68	11	1,469	588
Ytterbium-173	4	950	380	4	410	164	1	50	20	9	1,410	564
Ytterbium-174	8	1,300	325	10	2,920	730	2	100	25	20	4,320	1,080
Ytterbium-176	5	861	301	8	2,350	823	1	50	17	14	3,261	1,141
Zinc-64	13	1,340	602	13	5,220	1,470	2	703	196	28	7,263	2,268
Zinc-66	6	620	341	8	580	319	3	701	385	17	1,901	1,045
Zinc-67	3	587	2,172	8	2,717	9,453	3	425	942	14	3,729	12,567
Zinc-68	20	43,940	35,152	10	845	676	19	6,763	3,733	49	51,548	39,561
Zinc-70	1	1	21	6	180	3,443	2	32	469	9	213	3,933

ISOTOPE	DOMESTIC			FOREIGN			PROJECT			TOTAL		
	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS	SHIP	MILLIGRAMS	DOLLARS
Zirconium-90	7	3,675	919	15	2,666	666				22	6,341	1,585
Zirconium-91	3	55	58	6	259	272			105	110	419	440
Zirconium-92	2	50	44	9	531	455				11	581	499
Zirconium-94	4	100	105	10	574	588				14	674	693
Zirconium-96	5	84	693	6	174	1,531	1		75	488	12	333
Loans ^a										108	7,247,777	57
TOTALS	1353	318,999,570	695,848	1808	60,953,061	802,081	389	1,964,353	211,355	3658	389,164,761	1,709,341

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