UNITED STATES ATOMIC ENERGY COMMISSION

THE VARIETIES; QUANTITIES, AND PURITIES OF STABLE ISOTOPES
WHICH HAVE BEEN CONCENTRATED ELECTROMAGNETICALLY

by

C. P. Keim

Carbide and Carbon Chemicals Corporation

UNCLASSIFIED

Charlotte W. Kimbrough *CWK*

LeGacy-Critique

Date: *2/4/10*

Confirmed unclassified
Not NCNS, ONOR ECI

Date of Manuscript:

March 22, 1948

Date Declassified:

July 19, 1948

approved for public release
C. Kimbrough DC, DD
These 7 pages

This document is for official use.
Its issuance does not constitute authority
for declassification of classified copies
of the same or similar content and title
and by the same author.

Technical Information Division, Oak Ridge Operations
AEC, Oak Ridge, Tenn., 2-9-49--750-A1467

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

THE VARIETIES, QUANTITIES, AND PURITIES OF STABLE ISOTOPES
WHICH HAVE BEEN CONCENTRATED ELECTROMAGNETICALLY

By C. P. Keim

ABSTRACT

The varieties of stable isotopes along with their expected quantities and purities are listed. These figures are based on approximately two hundred isotope collections.

* * * *

This report has been prepared for the use of those interested in the availability of stable isotopes.

Stable isotopes of the following elements have been concentrated by the electromagnetic process:

Al	Li	W	Cu	In
	Mg		Zn	Sn
	Si		Ge	Sb
	K		Se	Te
	Ca		Sr	W
	Ti		Zr	Re
	Cr		Mo	Tl
	Fe		Ag	Pb
	Ni		Cd	

The following tabulation shows the probable quantities of isotopes available for shipment and the probable range of concentrations for isotopes of the foregoing elements. Approximately two hundred isotope collections have been used in the determination of these figures. Because factors other than natural abundance enter into the electromagnetic concentration of isotopes, these quantity and concentration figures are only approximate and there are a few exceptions.

If the natural abundance is	The amount available for shipment is	The expected enriched concentration is in the range
0.01 - 0.1%	1 mg	0.1 - 1%
0.1 - 2 %	10 mg	0.5 - 60%
2 - 5 %	50 mg	25 - 70%
5 - 10 %	100 mg	45 - 85%
10 - 25 %	250 mg	70 - 90%
25 - 90 %	500 mg	85 - 99%
90 - 100 %	1000 mg	95 - 100%

END OF DOCUMENT

~~CONFIDENTIAL~~

23375

Index No. Y-147

This document contains 4 pages.

This is copy 7 of 103, Series A

CARBIDE AND CARBON CHEMICALS CORPORATION

Y-12 PLANT

W-7405-Eng-26

RESEARCH AND DEVELOPMENT DIVISION

Dr. E. D. Shipley, Director

ISOTOPE DEVELOPMENT DEPARTMENT

Dr. C. P. Keim, Superintendent

APPROVED FOR RELEASE

For the Atomic Energy Commission

Charles A. Keller
Declassification Officer

THE VARIETIES, QUANTITIES, AND PURITIES
OF STABLE ISOTOPES

WHICH HAVE BEEN CONCENTRATED ELECTROMAGNETICALLY

By C. P. Keim

Received, Records
and Clearance Section

JUL 20 1948

ABSTRACT

The varieties of stable isotopes along with their
expected quantities and purities are listed. These
figures are based on approximately two hundred
isotope collections.

CLASSIFICATION CANCELLED

For the Atomic Energy Commission

Charles A. Keller
Declassification Officer

Oak Ridge, Tennessee

March 22, 1948

UNCLASSIFIED

THE VARIETIES, QUANTITIES, AND PURITIES
OF STABLE ISOTOPES
WHICH HAVE BEEN CONCENTRATED ELECTROMAGNETICALLY

Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee

This report has been prepared for the use of those interested in the availability of stable isotopes.

Stable isotopes of the following elements have been concentrated by the electromagnetic process:

Li	Cu	In
Mg	Zn	Sn
Si	Ge	Sb
K	Se	Te
Ca	Sr	W
Ti	Zr	Re
Cr	Mo	Tl
Fe	Ag	Pb
Ni	Cd	

The following tabulation shows the probable quantities of isotopes available for shipment and the probable range of concentrations for isotopes of the ^{for 100%} above elements. Approximately two hundred isotope collections have been used in the determination of these figures. Because factors other than natural abundance enter into the electromagnetic concentration of isotopes, these quantity and concentration figures are only approximate and there are a few exceptions.

¹² If the ¹ Natural Abundance ²⁴ Is ²⁴	The Amount ²⁴ Available For Shipment ²⁴	The Expected Enriched ²⁴ Concentration is in ²⁴ the Range ²⁴
0.01 - 0.1%	1 mg @	0.1 - 1%
0.1 - 2%	10 mg @	0.5 - 60%
2 - 5%	50 mg @	25 - 70%
5 - 10%	100 mg @	45 - 85%
10 - 25%	250 mg @	70 - 90%
25 - 90%	500 mg @	85 - 99%
90 - 100%	1000 mg @	95 - 100%

~~UNCLASSIFIED~~

Approved:

E. D. Shipley
E. D. Shipley

Author:

C. P. Keim
C. P. Keim

Note: This document is based on work performed under Contract No. W-7405-Eng.-26 for the Atomic Energy Commission by Graphite and Carbon Chemicals Corporation, at Oak Ridge, Tennessee.

~~UNCLASSIFIED~~