NBS TECHNICAL NOTE 524

Determination of the Light Elements in Metals: A Bibliography of Activation Analysis Papers

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National Bureau of Standards

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TECHNICAL NOTE 524

ISSUED MAY 1970

Nat. Bur. Stand. (U.S.), Tech. Note 524, pages (May 1970)
CODEN: NBTNA

Determination of the Light Elements in Metals: A Bibliography of Activation Analysis Papers

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Washington, D.C. 20234

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PREFACE

This bibliography is the second of a series of bibliographies on the application of Activation Analysis to specific subjects. The bibliographies in this series are produced from the master files of the Analytical Chemistry Division's Activation Analysis Information Center and will be periodically updated.

W. Wayne Meinke, Chief
Analytical Chemistry Division

DETERMINATION OF THE LIGHT ELEMENTS IN METALS: A BIBLIOGRAPHY OF ACTIVATION ANALYSIS PAPERS

G. J. Lutz, Editor

References to the Determination of the Light Elements in Metals using Activation Analysis are indexed according to the elements boron, carbon, nitrogen, oxygen, phosphorous, silicon and sulfur. The indexes are arranged by Element Determined and subdivided according to Matrices and Nuclear Reactions involved. An Author Index is included.

Key words: Boron; carbon; light elements; metals; nitrogen; oxygen; phosphorous; silicon; sulfur.

INTRODUCTION

This publication, Determination of the Light Elements in Metals: A Bibliography of Activation Analysis Papers, is the second in a series of specialized bibliographies on Activation Analysis prepared by the Analytical Chemistry Division Activation Analysis Information Center.

Publications obtained by the Center for inclusion in the Activation Analysis file are indexed according to the broad categories of Element Determined, Matrix Analyzed and Technique Used. Currently there are 106 descriptive terms under Matrix Analyzed and 53 under Technique Used.

Items included in this bibliography were extracted from the Elements Determined: Boron, Carbon, Nitrogen, Oxygen, Phosphorous, Silicon and Sulfur and from the appropriate keys of Matrix Analyzed dealing with metals. The form of the indexes is by Element Determined with listings of Matrices and Nuclear Reactions involved.

An author index has been included and it is hoped that readers will point out omissions to the editor. The Center plans to publish revisions to this bibliography commensurate with the growth of the field.

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APPENDIX I

DETERMINATION OF LIGHT ELEMENTS IN METALS - AUTHOR INDEX

APPENDIX II

DETERMINATION OF LIGHT ELEMENTS IN METALS - MATRIX INDEX

CARBON (CONTINUED)

NITROGEN

OXYGEN

OXYGEN (CONTINUED)

OXYGEN (CONTINUED)

PHOSPHOROUS

PHOSPHOROUS (CONTINUED)

NIOBIUM	641 1165 1709
SELENIUM	1215 1520 6446
SILICON	244 246 255 509 892 1118 1166 2386 2523 6226 6572
STEEL	893 1085 1124 2764 6086
TANTALUM	1165
TELLURIUM	1215
THALLIUM	2721
TUNGSTEN	7145
ZIRCONIUM	1471 1709 2550

SILICON

ALUMINUM	4 102 417 1591
BERYLLIUM	850 1263
IRON	4 452 628 1590 1875
MAGNESIUM	7407
NICKEL ALLOYS	6844
NIOBIUM	641
STEEL	628 2429 2596 6086 6398 6723 7170
TITANIUM	81
ZIRCONIUM	1709

SULFUR

ALUMINUM	688 704 767 2550 6410 6412 6568
CHROMIUM	1570
COPPER	1378 1477 2550 6410 6412 6568
GOLD	1193
IRON	140 688 767 1621 1965 6410 6412 6568
MAGNESIUM	22 6410 6412 6568
NICKEL	6410 6412 6568

SULFUR (CONTINUED)

APPENDIX III

DETERMINATION OF LIGHT ELEMENTS IN METALS - REACTION INDEX

BORON

$^{11}B(p,n)^{11}C$	181 1013 1091 2712
$^{10}B(d,n)^{11}C$	2712
$^{10}B(n,\alpha)^{7}Li$ - electronic α counting	1546 1547 1561 1618 1787 3059 3361 5429
$^{10}B(n,\alpha)^{7}Li$ - α track counting	5408 5932
$^{10}B(n,\alpha)^{7}Li$ - neutron flux depression	1821
$^{10}B(n,\alpha)^{7}Li$ - prompt ^{7}Li gamma ray	1546 1547 1561 3361 3466 5919 7285 7361
Deuteron bombardment - prompt gamma ray	3976

CARBON

$^{12}C(d,n)^{13}N$	4 8 118 119 417 688 744 767 1219 1951 2505 3070 3976 5238 6581 6736 7307
$^{12}C(\gamma,n)^{11}C$	45 46 49 351 703 1263 1560 1816 3727 4386 5954 6593 6742 7015 7017 7018
$^{12}C(^{3}He,\alpha)^{11}C$	105 1599 1604 1831 3977 4226 6752 7011 7019 7162
$^{12}C(p,\gamma)^{13}N$	401 744 1026 1219
$^{12}C(\alpha,\alpha n)^{11}C$	578
$^{12}C(d,p)^{13}C$ - (prompt γ detection)	2652

DETERMINATION OF LIGHT ELEMENTS IN METALS - REACTION INDEX

NITROGEN

OXYGEN

OXYGEN (Continued)

PHOSPHOROUS

SILICON

SULFUR

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