REPORT ON AVAILABLE STANDARD SAMPLES, REFERENCE SAMPLES, AND HIGH-PURITY MATERIALS FOR SPECTRO-CHEMICAL ANALYSIS 1963

Compiled by
ROBERT E. MICHAELIS
NATIONAL BUREAU OF STANDARDS
FOR
ASTM COMMITTEE E-2 ON EMISSION SPECTROSCOPY

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FOREWORD

Quantitative spectrochemical analysis is based on comparison of unknown samples with standard samples of similar composition. Standard samples frequently are prepared by the analyst for the particular problem in hand; but, for the analysis of many common materials, particularly metals and alloys, standard samples have been prepared in quantities adequate for general distribution. The rapid growth of spectrochemical analysis and a corresponding increase in available standard samples call for a periodic compilation of types and sources of standards for the information of analysts.

In 1943 a report on available standard samples was prepared under the sponsorship of the War Metallurgy Committee by W. R. Brode. The report was revised by W. R. Brode and B. F. Scribner and published in October, 1944, by the American Society for Testing Materials. Since then, Subcommittee IV on Electrodes, Pure Materials, Reagents, and Standards of the ASTM Committee E-2 on Emission Spectroscopy has undertaken to keep the report up to date. Revisions compiled by C. H. Corliss in 1947, by C. H. Corliss and Alan Goldblatt in 1950, and by Robert E. Michaelis in 1955 and 1960 have been published. The current revision presents the results of a new survey conducted for Subcommittee IV by Robert E. Michaelis, National Bureau of Standards. Acknowledgment is given to A. H. Gillieson of the Department of Mines and Technical Surveys, Canada, for his aid in planning and preparing the section on high-purity materials; to Mrs. F. L. Hilten of the National Bureau of Standards (NBS) for general assistance in the preparation of this publication; and to F. Ordway and H. S. Schofer of the Crystal Growth Section at NBS for permitting the use of their catalog files.

The information is published to provide ready reference to the availability and sources of standard samples, reference samples, and high-purity materials. The numbers of available standard samples, including samples in different sizes, listed in the series of reports are as follows:

Year	Spectrographic Standards	Chemical Standards	Total
1944	210	103	313
1947	435	113	548
1950	632	120	752
1955	979	169	1148
1960	2145	205	2350
1963	2631	220	2851

The listing of high-purity materials provides useful information to the analyst, particularly in the preparation of standards in the laboratory when other suitable standard samples are not available. The listings of high-purity materials in the series of reports are as follows:

Year	Entries	Sources
1950	325	43
1955	648	54
1960	864	61
1963	1000+	139

The section added to the 1955 and 1960 revisions and retained in this revision covers the available reference samples which are used principally for semiquantitative spectrochemical analysis. Some 1200 reference samples are listed in this section.

The total number of entries of standard samples, reference samples, and high-purity materials in this report is about 5050; this represents an increase of 1650 in the three-year period between revisions.

NEW INFORMATION

New information concerning the availability of standard samples, reference samples, and high-purity materials should be directed to Harold C. Dilworth, Spectrochemical Analysis Section, National Bureau of Standards, Washington, D.C. 20234

CONTENTS

THIS PUBLICATION is one of many issued by the American Society for Testing and Materials in connection with its work of promoting knowledge of the properties of materials and developing standard specifications and tests for materials. Much of the data result from the voluntary contributions of many of the country's leading technical authorities from industry, scientific agencies, and government.

Over the years the Society has published many technical symposiums, reports, and special books. These may consist of a series of technical papers, reports by the ASTM technical committees, or compilations of data developed in special Society groups with many organizations cooperating. A list of ASTM publications and information on the work of the Society will be furnished on request.