

Sixty-fifth Annual Meeting Papers

Papers on

SOLDERING (1962)



Published by the
AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 Race St., Philadelphia 3, Pa.

ASTM Special Technical Publication No. 319

PAPERS ON SOLDERING (1962)

Presented at the
SIXTY-FIFTH ANNUAL MEETING
AMERICAN SOCIETY FOR TESTING AND MATERIALS
New York, N. Y., June 24, 1962



Reg. U.S. Pat. Off.

ASTM Special Technical Publication No. 319

Price \$4.00; to Members \$3.20

Published by the
AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 Race St., Philadelphia 3, Pa.

©BY AMERICAN SOCIETY FOR TESTING AND MATERIALS 1963

Library of Congress Catalog Card Number: 63-12698

FOREWORD

Committee B-2 on Nonferrous Metals and Alloys has followed up its 1956 Symposium on Soldering with a series of papers on various aspects of soldering and newer techniques, including those items of particular interest in the manufacture of printed circuits and other electronic components.

The papers included in this volume were presented at a Session on Soldering held on Sunday, June 24, 1962, at New York City during the Sixty-fifth Annual Meeting of the Society. Mr. P. R. White, of Bell Telephone Laboratories, served as Symposium Chairman and presided over the session.

NOTE.—The Society is not responsible, as a body, for the statements
and opinions advanced in this publication.

CONTENTS

	PAGE
Introduction—P. Robert White.....	1
Printed Wiring Surface Preparation Methods—Elimination of Gold Plating as a Surface Preparation for Printed Circuits and Development of a Contamination-Free Surface—J. D. Keller.....	3
Discussion.....	12
Embrittlement of Solder by Gold from Plated Surfaces—F. Gordon Foster.....	13
Mechanism of Wetting During Solder Joint Formation—Howard H. Manko.....	20
Discussion.....	27
Effect of Impurities on Some Properties of Lead-Tin Alloys—Max F. W. Heberlein.....	29
Discussion.....	38
Factors Affecting Quality of Soft Soldered Joints in Copper Water Tube—J. M. Keyes.....	39
Tin Transformation of Tinned Copper Wire—Jack Spergel.....	83
Discussion.....	91

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.

