

SIMULATED SERVICE TESTING IN THE PLASTICS INDUSTRY



STP 375

SIMULATED SERVICE TESTING IN THE PLASTICS INDUSTRY

A Symposium Presented at the
SIXTY-SEVENTH ANNUAL MEETING
AMERICAN SOCIETY FOR TESTING AND MATERIALS
Chicago, Ill., June 23, 1964



Reg. U. S. Pat. Off.

ASTM Special Technical Publication No. 375

Price \$3.00; to Members \$2.10

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

© BY AMERICAN SOCIETY FOR TESTING AND MATERIALS 1965
Library of Congress Catalog Card Number: 65-18212

Printed in Baltimore, Md.
July, 1965

FOREWORD

This volume contains the five papers presented at the Symposium on Simulated Service Testing in the Plastics Industry on Tuesday, June 23, 1964, during the Sixty-seventh Annual Meeting of the Society held in Chicago, Ill. A sixth paper by J. P. Forsman, "Causes of Polypropylene Oven Aging Variability," is included because of its relevance to the subject of the symposium. This paper was presented as part of the Session on General Testing held on Friday, June 26, 1964, during the same meeting.

The symposium was sponsored by the ASTM Administrative Committee on Simulated Service Testing. R. H. Carey of Union Carbide Corp. acted as symposium chairman.

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

CONTENTS

	PAGE
Introduction—R. H. Carey.....	1
Simulated Service Tests of Plastics Parts in a Resin Laboratory—D. P. Norris and H. M. Quackenbos.....	3
Discussion.....	14
Lacquer Marring by Plasticizer Migration from Vinyl Chloride Plastics—J. B. De- Coste.....	15
Discussion.....	28
Hydrostatic Strength and Design Stresses for Thermoplastic Pipe with Water—F. W. Reinhart.....	30
Discussion.....	48
Plastic Part Properties and Their Relationship to End-Use Performance—R. S. Hagan and J. R. Thomas.....	49
Discussion.....	62
Filament-Wound Structures—R. E. Young.....	63
Causes of Polypropylene Oven Aging Variability—J. P. Forsman.....	73

RELATED ASTM PUBLICATIONS

Plastics Testing and Standardization, STP 247 (1959)
Reinforced Plastics for Rockets and Aircraft, STP 279 (1959)
Standards for Filament-Wound Reinforced Plastics, STP 327 (1962)
Resinographic Methods, STP 348 (1964)

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.

