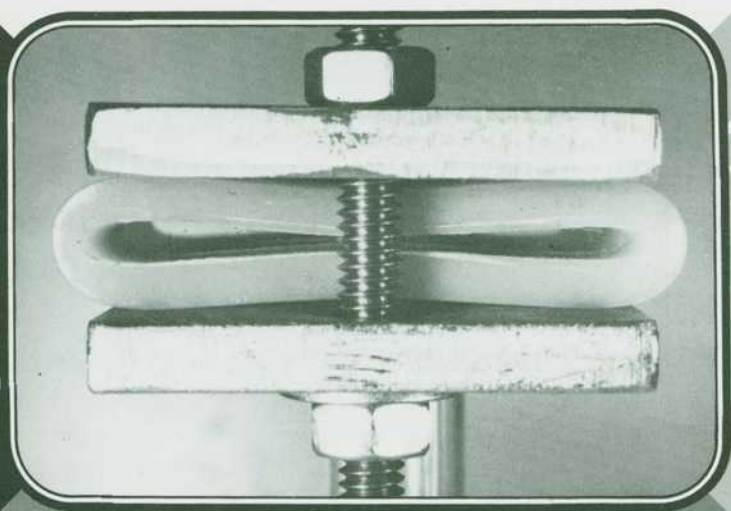


Quality Assurance of **Polymeric Materials and Products**



Green/Miller/Turner, editors

ASTM STP 846

Quality Assurance of Polymeric Materials and Products

A symposium sponsored by ASTM Committees
D-20 on Plastics and E-11 on Statistical Methods
Nashville, TN, 16 March 1983

ASTM SPECIAL TECHNICAL PUBLICATION 846
Francis T. Green, E. I. Du Pont Co., Robert W.
Miller, Underwriters Laboratories, Inc., and V. Lee
Turner, E. I. Du Pont Co., editors

ASTM Publication Code Number (PCN)
04-846000-19



1916 Race Street, Philadelphia, PA 19103

Library of Congress Cataloging in Publication Data

Quality assurance of polymeric materials and products.

(ASTM special technical publication; 846)

“ASTM publication code number (PCN) 04-846000-19.”

Includes bibliographies and index.

1. Plastics — Quality control — Congresses. I. Greene, Francis T. II. Miller, Robert W. III. Turner, V. Lee. IV. ASTM Committee D-20 on Plastics. V. Series.

TP1122.Q35 1985 668.9 83-73514

ISBN 0-8031-0408-1

Copyright © by AMERICAN SOCIETY FOR TESTING AND MATERIALS 1984
Library of Congress Catalog Card Number: 83-73514

NOTE

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

Foreward

The symposium on Quality Assurance of Polymeric Materials and Products was presented at Nashville, TN, 16 March 1983. The symposium was sponsored by ASTM Committees D-20 on Plastics and E-11 on Statistical Methods. J. A. Blair, E. I. Du Pont Co., presided as chairman of the symposium. Francis T. Green, E. I. Du Pont Co., Robert W. Miller, Underwriters Laboratories, Inc., and V. Lee Turner, E. I. Du Pont Co., are coeditors of this publication.

Related ASTM Publications

Physical Testing of Plastics, STP 736 (1981), 04-736000-19

Wear Tests for Plastics: Selection and Use, STP 701 (1980), 04-701000-19

Manual on Presentation of Data and Control Chart Analysis, STP 15D (1976),
04-15040-34

A Note of Appreciation to Reviewers

The quality of the papers that appear in this publication reflects not only the obvious efforts of the authors but also the unheralded, though essential, work of the reviewers. On behalf of ASTM we acknowledge with appreciation their dedication to high professional standards and their sacrifice of time and effort.

ASTM Committee on Publications

ASTM Editorial Staff

Janet R. Schroeder
Kathleen A. Greene
Rosemary Horstman
Helen M. Hoersch
Helen P. Mahy
Allan S. Kleinberg
Susan L. Gebremedhin

Contents

Introduction	1
DEVELOPING A WORKING SYSTEM FOR QUALITY ASSURANCE	
An Industrial Approach to Quality Assurance—Boring? You Bet! But Not If You Want to Make Money —KENNETH D. ZIEGEL AND ROGER E. KNOX	5
Quality Assurance of Polymeric Materials and Products— The Underwriters Laboratories Safety Performance Viewpoint —HARLAN BRATVOLD AND ROBERT W. MILLER	15
Discussion	29
The Role of Interlaboratory Test Programs in Quality Assurance — JOHN D. BARNES	31
Discussion	47
METHODS USED FOR THE QUALITY ASSURANCE OF PLASTICS	
Optimizing Reproducibility in the Analysis of Polymers by Steric Exclusion Chromatography —RONALD W. MILLER AND GENE DALTON	51
Quality Assurance by Means of Thermoanalytical Routine Methods —GEORG WIDMANN	66
Use of the Automatic Capillary Rheometer in Quality Control — CHARLENE K. SHOLLEY	73
Using Rheological Measurements for Quality Assurance — STEPHEN B. DRISCOLL	83
PRACTICAL APPLICATION OF QUALITY ASSURANCE TECHNIQUES FOR PLASTIC PIPE	
Compression Ring Environmental Stress Crack Resistance (Pipe) Precision and Accuracy Round Robin —IVAN K. DEBLIEU AND EUGENE F. PALMERO	105
Discussion	116
Quality Assurance of Flexible Plastic Pipes for Hot Water Service —JERKER SKARELIUS	118
Discussion	133
Summary	135
Index	139

ISBN 0-8031-0408-1