Analysis of Paints and Related Materials:

Current Techniques for Solving Coatings Problems

William C. Golton, editor

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Foreword

This publication, *Analysis of Paints and Related Materials: Current Techniques for Solving Coatings Problems*, contains papers presented at the symposium of the same name held in Pittsburgh, Pennsylvania on 13–14 May 1990. The symposium was sponsored by ASTM Committee D-1 on Paint and Related Materials and its Subcommittee D01.21 on Chemical Analysis of Paints and Paint Materials. The symposium chairman was William C. Golton, E. I. duPont de Nemours & Company, Inc., Philadelphia. He also served as editor of this publication.

Contents

Overview

The purpose of the two-day symposium was to present and discuss the latest techniques and instruments used to analyze and characterize paints, coatings, and related materials. The symposium was sponsored by ASTM standards-writing Committee D-1 on Paint and Related Coatings and Materials and its Subcommittee D01.21 on Chemical Analysis of Paints and Paint Materials.

This book is divided into four sections that reflect the order of papers given at the symposium. Section I is *Analysis and Characterization of Whole Paint*. Two papers were presented in this category: (1) "Modern Analytical Techniques for Coating and Coating Materials," by Ulrich Schernau, Bernhard Hueser, and Karin Weber; and (2) "Mass Spectrometric Techniques for Coatings Characterization," by William J. Simonsick, Jr.

Section II is *Analysis and Characterization of Paint Components*. Four papers were presented in this category: (1) "HPLC Analysis for Epoxy Coatings Resins," by David P. Sheih and Donald E. Benton; (2) "Application of Size Exclusion Chromatography to Polymers and Coatings," by Cheng-Yih Kuo and Theodore Provder; (3) "X-Ray Techniques for Coatings Analysis," by A. Monroe Snider, Jr.; and (4) "Practical Applications of Gas Chromatography in the Paint and Coatings Industry," by Francis X. Young.

Section III is *Cure Characterization, Durability, and Coating Problems*. Three papers were presented in this category: (1) "Applications of FTIR to Paint Analysis," by Jack H. Hartshorn; (2) "Chemical Characterization of Cross-Linked Polyurethane Films," by L. G. J. van der Ven, G. D. B. Van Houwelingen, and R. R. Lamping; and (3) "Principles and Applications of Photoelectron and Ion Spectroscopy for the Analysis of Polymer Surfaces," by Joseph A. Gardella, Jr.

Section IV is *Paint Failure and Defects*. Two papers were presented in this category: (1) "FTIR Techniques for the Analysis of Coating Problems: Solid Sampling Accessories," by Anne M. Millon and James M. Julian; and (2) "Failure Analysis of Applied Coatings," by Kenneth B. Tator and Dwight G. Weldon.

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