1. Record Nr. UNINA9910784711303321

Autore	Stauffer Eric <1975->
Titolo	Fire debris analysis / / Eric Stauffer, Julia A. Dolan, Reta Newman
Pubbl/distr/stampa	Amsterdam ; ; Boston, MA : , : Academic Press, , [2008] ©2008
ISBN	1-281-11201-1 9786611112011 0-08-055626-4
Descrizione fisica	1 online resource (xxxi, 634 pages) : illustrations
Disciplina	363.37/65
Soggetti	Fire investigation Forensic sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Fire Debris Analysis; Copyright page; Table of contents; Biographies; Preface; Acknowledgments; Foreword; CHAPTER 1: Introduction; 1.1 THE OTHER USE OF GASOLINE AND DIESEL FUEL; 1.2 FIRE INVESTIGATION; 1.3 WHAT IS FIRE DEBRIS ANALYSIS?; 1.4 WHO PERFORMS FIRE DEBRIS ANALYSIS?; REFERENCES; CHAPTER 2: History; 2.1 PREAMBLE; 2.2 SAMPLE ANALYSIS; 2.3 SAMPLE EXTRACTION; 2.4 STUDY OF INTERFERENCES; REFERENCES; CHAPTER 3: Review of Basic Organic Chemistry; 3.1 INTRODUCTION; 3.2 CHEMICAL BONDS; 3.3 CLASSIFICATION OF ORGANIC COMPOUNDS; 3.4 IUPAC NOMENCLATURE; REFERENCES CHAPTER 4: Chemistry and Physics of Fire and Liquid Fuels4.1 DEFINITION OF FIRE; 4.2 COMBUSTION; 4.3 PHASE CHANGES; 4.4 PYROLYSIS; 4.5 FIRE DEVELOPMENT; 4.6 LIQUID FUEL PROPERTIES; REFERENCES; CHAPTER 5: Detection of Ignitable Liquid Residues at Fire Scenes; 5.1 INTRODUCTION; 5.2 BURN PATTERNS; 5.3 ELECTRONIC SNIFFERS; 5.4 COLORIMETRIC TUBES; 5.5 ACCELERANT DETECTION CANINES; 5.6 IGNITABLE LIQUID ABSORBENT; 5.7 ULTRAVIOLET DETECTION; 5.8 PORTABLE GAS-CHROMATOGRAPH (-MASS SPECTROMETER); REFERENCES; CHAPTER 6: Sample Collection; 6.1 INTRODUCTION; 6.2 SAMPLE SELECTION; 6.3 SAMPLE REMOVAL

6.4 SAMPLE PACKAGING6.5 EVIDENCE ADMINISTRATION AND TRANSPORTATION; REFERENCES; CHAPTER 7: Flammable and Combustible Liquids; 7.1 INTRODUCTION; 7.2 HISTORY; 7.3 SOURCES OF CRUDE OIL; 7.4 COMPOSITION OF CRUDE OIL; 7.5 REFINING PROCESSES; 7.6 PETROLEUM PRODUCT PROPERTIES; 7.7 THE ASTM CLASSIFICATION SCHEME; REFERENCES; CHAPTER 8: Gas Chromatography and Gas Chromatography-Mass Spectrometry; 8.1 INTRODUCTION; 8.2 CHROMATOGRAPHIC THEORY; 8.3 GAS CHROMATOGRAPHY; 8.4 MASS SPECTROMETRY; 8.5 PARAMETERS USED IN FIRE DEBRIS ANALYSIS
8.6 DATA ANALYSIS AND INTERPRETATION METHODS IN GAS CHROMATOGRAPHY-MASS SPECTROMETRYREFERENCES; CHAPTER 9: Interpretation of Data Obtained from Neat Ignitable Liquids; 9.1 INTRODUCTION; 9.2 PETROLEUM v. NONPETROLEUM IGNITABLE LIQUIDS; 9.3 BOILING POINT RANGE; 9.4 PETROLEUM-BASED IGNITABLE LIQUIDS; 9.5 GASOLINE; 9.6 PETROLEUM DISTILLATES; 9.7 ISOPARAFFINIC PRODUCTS; 9.8 NAPHTHENIC PARAFFINIC PRODUCTS; 9.9 NORMAL-ALKANE PRODUCTS; 9.10 AROMATIC PRODUCTS; 9.11 NONPETROLEUM-BASED IGNITABLE LIQUIDS; 9.12 IGNITABLE LIQUID IDENTIFICATION SCHEME; 9.13 COMPARISON OF IGNITABLE LIQUIDS; REFERENCES
CHAPTER 10: Preliminary Examination of Evidence10.1 INTRODUCTION; 10.2 DOCUMENTATION; 10.3 INITIAL OBSERVATION; 10.4 OTHER FORENSIC EXAMINATIONS; 10.5 DETAILED OBSERVATIONS; REFERENCES; CHAPTER 11: Extraction of Ignitable Liquid Residues from Fire Debris; 11.1 INTRODUCTION; 11.2 DISTILLATION TECHNIQUES; 11.3 SOLVENT EXTRACTION TECHNIQUES; 11.4 HEADSPACE TECHNIQUE; 11.5 ADSORPTION TECHNIQUES; 11.6 CHOOSING THE RIGHT TECHNIQUE; REFERENCES; CHAPTER 12: Interpretation of Ignitable Liquid Residues Extracted from Fire Debris; 12.1 INTRODUCTION; 12.2 MATERIALS CONSTITUTING SUBSTRATES
12.3 CONCEPT OF INTERFERING PRODUCTS

Sommario/riassunto

The study of fire debris analysis is vital to the function of all fire investigations, and, as such, Fire Debris Analysis is an essential resource for fire investigators. The present methods of analysis include the use of gas chromatography and gas chromatography-mass spectrometry, techniques which are well established and used by crime laboratories throughout the world. However, despite their universality, this is the first comprehensive resource that addresses their application to fire debris analysis.Fire Debris Analysis covers topics such as the physics and chemistry