

1. Record Nr.	UNINA9910807089903321
Autore	Nolan Dennis P
Titolo	Handbook of fire and explosion protection engineering principles [[electronic resource]] : for oil, gas, chemical and related facilities // Dennis P. Nolan
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/GPP, 2011
ISBN	1-282-95595-0 9786612955952 1-4377-7858-5
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (341 p.)
Disciplina	660.2804
Soggetti	Chemical plants - Fires and fire prevention Explosions - Safety measures Explosions Petroleum refineries - Fires and fire prevention
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; Handbook of Fire and Explosion Protection Engineering Principles: for Oil, Gas, Chemical and Related Facilities; Copyright; Preface; About the Author; Contents; Chapter 1 - Introduction; 1.1 - Fire, Explosions, and Environmental Pollution; 1.2 - Historical Background; 1.3 - Legal Influences; 1.4 - Hazards and Their Prevention; 1.5 - Risk Management and Insurance; 1.6 - Senior Management Responsibility and Accountability; Bibliography; Chapter 2 - Overview of Oil and Gas Facilities; 2.1 - Introduction; 2.2 - Exploration; 2.3 - Production; 2.4 - Enhanced Oil Recovery; 2.5 - Transportation; 2.6 - Refining; 2.7 - Typical Refinery Process Flow; 2.8 - Marketing; Bibliography; Chapter 3 - Philosophy of Protection Principles; 3.1 - Introduction; 3.2 - Legal Obligations; 3.3 - Insurance Recommendations; 3.4 - Company and Industry Standards; 3.5 - Worst Case Condition; 3.6 - Independent Layers of Protection; 3.7 - Design Principles; 3.8 - Accountability and Auditability; Bibliography; Chapter 4 - Physical Properties of Hydrocarbons; 4.1 - Introduction; 4.2 - General Description of Hydrocarbons; 4.3 - Characteristics of

Hydrocarbons; 4.4 - Flash Point
4.5 - Autoignition Temperature
4.6 - Vapor Density Ratio; 4.7 - Vapor Pressure; 4.8 - Specific Gravity; 4.9 - Flammable; 4.10 - Combustible; 4.11 - Heat of Combustion; 4.12 - Some Common Hydrocarbons; Bibliography; Chapter 5 - Characteristics of Hydrocarbon Releases, Fires, and Explosions; 5.1 - Introduction; 5.2 - Hydrocarbon Releases; 5.3 - Gaseous Releases; 5.4 - Mists or Spray Releases; 5.5 - Liquid Releases; 5.6 - Nature and Chemistry of Hydrocarbon Combustion; 5.7 - Hydrocarbon Fires; 5.8 - Deliberate Terrorist Explosions; 5.9 - Semi-Confined Explosion Overpressures
5.10 - Vapor Cloud Overpressures
5.11 - Boiling Liquid Expanding Vapor Explosions; 5.12 - Smoke and Combustion Gases; 5.13 - Mathematical Consequence Modeling; 5.14 - Methods of Extinguishing Flames; 5.15 - Incident Scenario Development; 5.16 - Terminology of Hydrocarbon Explosions and Fires; Bibliography; Chapter 6 - Historical Survey of Fire and Explosions in the Hydrocarbon Industries; 6.1 - Introduction; 6.2 - Lack of Industry Incident Database and Analysis; 6.3 - Insurance Industry Perspective; 6.4 - Process Industry Perspective
6.5 - Major Incidents Affect Process Industry Safety Management
6.6 - Incident Data; 6.7 - Summary; Bibliography; Chapter 7 - Risk Analysis; 7.1 - Introduction; 7.2 - Risk Identification and Evaluation; 7.3 - Specialized Supplemental Studies; 7.4 - Risk Acceptance Criteria; 7.5 - Relevant and Accurate Data Resources; 7.6 - Insurance Risk Evaluations; Bibliography; Chapter 8 - Segregation, Separation, and Arrangement; 8.1 - Introduction; 8.2 - Segregation; 8.3 - Separation; 8.4 - Manned Facilities and Locations; 8.5 - Process Units; 8.6 - Storage Facilities - Tanks; 8.7 - Flares and Burn Pits
8.8 - Critical Utilities and Support Systems

Sommario/riassunto

The security and economic stability of many nations and multinational oil and chemical companies is highly dependent on the safe and uninterrupted operation of their oil, gas and chemical facilities. Fire and explosion incidents are among the most critical impacts that can occur to these operations. This book provides a reference guide for professionals involved with fire and explosion prevention and protection aspects of these critical facilities. The main objectives of this handbook are to provide a practical understanding of fire and explosion problems at oil, gas and chemical fac
