1. Record Nr. UNINA9910298608303321

Autore	Ma Tingguang
Titolo	Ignitability and Explosibility of Gases and Vapors / / by Tingguang Ma
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2015
ISBN	1-4939-2665-9
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (230 p.)
Disciplina	536.7 54 604.7 621.4021 660
Soggetti	Chemical engineering Chemistry Thermodynamics Heat engineering Heat - Transmission Mass transfer Industrial Chemistry/Chemical Engineering Safety in Chemistry, Dangerous Goods Engineering Thermodynamics, Heat and Mass Transfer
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.
Nota di contenuto	A historical review -- Classical flammability theories -- Combustion fundamentals -- Thermal balance methods -- Ignitability, flammability and explosibility -- Operations within Flammability Diagrams -- Applications on Fuel Streams (Type II problems) -- Applications in Compartment Fires (Type I problem) -- Summary and conclusions.
Sommario/riassunto	The book provides a systematic view on flammability and a collection of solved engineering problems in the fields of dilution and purge, mine gas safety, clean burning safety and gas suppression modeling. For the first time, fundamental principles of energy conservation are used to develop theoretical flammability diagrams and are then explored to understand various safety-related mixing problems. This provides the

basis for a fully-analytical solution to any flammability problem. Instead of the traditional view that flammability is a fundamental material property, here flammability is discovered to be a result of the explosibility of air and the ignitability of fuel, or a process property. By exploring the more fundamental concepts of explosibility and ignitability, the safety targets of dilution and purge can be better defined and utilized for guiding safe operations in process safety. This book provides various engineering approaches to mixture flammability, benefiting not only the safety students, but also field operators, as a useful resource for the safe handling of flammable gases and liquids. It will be useful to anyone who worries about the ignition potential of a flammable mixture. .