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Autore	Luttgens Gunter
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Nota di contenuto	Front Cover; Electrostatic Hazards; Copyright Page; Contents; Foreword; Acknowledgements; Chapter 1. Danger of fire and explosion; 1.1 Basic considerations; 1.2 Conditions for ignition; 1.3 Minimum ignition energy; 1.4 Literature; Chapter 2. Origin of static electricity; 2.1 Double layer charge; 2.2 Charging of liquids and gases; 2.3 Reducing the tendency of charging; 2.4 Electrostatic induction; 2.5 Basic concepts and units; 2.6 Static charges on the clothing and the body; 2.7 Literature; Chapter 3. Electrostatic discharges as sources of ignition; 3.1 Definitions 3.2 Mechanisms of gas discharges3.3 Types of gas discharge; 3.4 Incendivity of gas discharges; 3.5 Traces left by gas discharges; 3.6 Literature; Chapter 4. Principles of safety; Chapter 5. Case histories related to brush discharges; 5.1 Ignition in a heated tank containing diphenyl; 5.2 Pouring flaked product into an agitator vessel; 5.3 Filling pipe blocked with sulphur leading to the ignition of methanol; 5.4 PE liner slipping out of a paper bag; 5.5 Ignition caused by an antistatic PE bag; 5.6 Impregnation of a glass fibre fabric; 5.7 Shaking fine dust out of a PE bag 5.8 Ion exchanger resin in toluene5.9 Pumping polluted toluene; Chapter 6.Case histories related to cone or bulking discharges; 6.1

Plastic foam released from an autoclave; 6.2 Dust explosion in a silo; Chapter 7. Case histories related to propagating brush discharges; 7.1 Plastic tube used in the pneumatic conveying of powder; 7.2 Plastic pipe used in the pneumatic conveying of powder; 7.3 Plastic injector in a jet mill; 7.4 PE liner in a metal drum; 7.5 PE liner in a paper drum; 7.6 Polymethylmethacrylate (PMMA) window pane in the silo of a granulating plant; 7.7 PP coated expansion pipe
7.8 Plastic tank inside a metal mould
7.9 Literature; Chapter 8. Case histories related to spark discharges; 8.1 Dusts; 8.2 Rotating beater dryer (1); 8.3 Explosion of a resin powder in a metal drum; 8.4 Dust removal from tablets; 8.5 Filter bag with a supporting framework; 8.6 Filter fabric containing interwoven steel fibres; 8.7 Explosion when emptying a metal drum; 8.8 Filter fabric made partially conducting by a flame- proofing agent; 8.9 Emptying a tumble dryer; 8.10 Cyclone separator set up on a drum; 8.11 Fire caused by an antistatic PE bag; 8.12 Pouring powder into an agitator vessel
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8.14 Grinding solvent-wet plastic; 8.15 Rotating beater dryer (2); 8.16 Shovelling solvent-wet powder; 8.17 Liquids; 8.18 Emptying a drum via a glass pipe; 8.19 Funnel with a Mucon outlet; 8.20 Metal valve in a glass apparatus; 8.21 Spark discharge from an isolated metal flange; 8.22 Rubber hose with a supporting helix; 8.23 Isolated steel spacer in a metal pipe; 8.24 Filling a metal drum on mobile scales; 8.25 Slicing solvent-wet plastic; 8.26 Application of rubber adhesive; 8.27 Valve with a corroded PTFE coating; 8.28 Fire during a coating process
8.29 Polyvinyl chloride (PVC) hose partially wetted with water

Sommario/riassunto

In the US, UK and Europe there is in excess of one notifiable dust or electrostatic explosion every day of the year. This clearly makes the hazards associated with the handling of materials subject to either cause or react to electrostatic discharge of vital importance to anyone associated with their handling or industrial bulk use. This book provides a comprehensive guide to the dangers of static electricity and how to avoid them. It will prove invaluable to safety managers and professionals, as well as all personnel involved in the activities concerned, in the chemical, agricultural, pharmac
