| Record Nr.              | UNINA9910877603903321  |
|-------------------------|--|
| Titolo                  | Spray dryers : a guide to performance evaluation / / prepared by the<br>Equipment Testing Procedure Committee  |
| Pubbl/distr/stampa      | New York, : American Institute of Chemical Engineers, c2003  |
| ISBN                    | 1-282-77377-1<br>9786612773778<br>0-470-92479-9<br>0-470-92478-0   |
| Edizione                | [2nd ed.]  |
| Descrizione fisica      | 1 online resource (76 p.)  |
| Collana                 | AIChE equipment testing procedure  |
| Disciplina              | 660.28426<br>660/.28426  |
| Soggetti                | Spray drying - Equipment and supplies - Evaluation<br>Chemistry, Technical - Equipment and supplies - Evaluation   |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Note generali           | "AIChE equipment testing procedure".<br>"Pub. E-32".   |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | <ul> <li>SPRAY DRYERS: A Guide to Performance Evaluation; Table of Contents; 100 Purpose and Scope; 101 Purpose; 101.1 Purpose; 101.2 Summary; 101.3 Scope of Spray Drying; 101.4 Reasons for Testing Spray Dryers; 102 Design vs. Operational Variables; 103 Liability; 200 Definitions and Descriptions of Terms; 201 Dryer Design; 201.1 Dryer Chamber; 201.2 Airflow Patterns; 201.3 Product Flow; 201.4 Atomizer; 201.5 Heating Methods; 201.6 Product Recovery; 201.7 Airflow Motive Force; 202 Description of Terms; 202.1 Drying; 300 Test Planning; 301 Preliminary Objectives; 301.1 Test Objectives</li> <li>301.2 Organizational Resources301.3 Schedule; 301.4 Dryer Controls and Instrumentation; 301.5 Peripheral Equipment; 301.6 Pretest Calculations; 301.7 Test Plan; 301.8 Environmental; 301.9 Cleaning and Inspection; 301.10 ""Dry Run""; 302 Types of Test; 302.1 Dryer System Capacity; 302.2 Heat and Material Balance; 302.3 Product Properties; 303.1 Residual Moisture Content; 303.2 Atomization; 303.3 Heat Sensitivity; 303.4 Physical Properties; 303.5 Prediction of Capacity</li> </ul> |

1.

|                    | and Rate Effects; 303.6 Summary<br>304 Data Requirements - Product Properties304.1 Data Requirements;<br>304.2 Atomizer Data; 304.3 Complete Heat and Material Balances;<br>304.4 Peripheral Equipment Limitations; 304.5 Product Quality<br>Measurements; 304.6 Particle Properties; 305 Test Preparation; 305.1<br>Objective of Tests; 305.2 Operating Variables; 305.3 Test Data Sheet;<br>305.4 Measurement Methods; 305.5 Test Plan; 305.6 Planning Check<br>List; 400 Methods of Measurement and Sampling; 401 Gas Temperature<br>and Humidity; 401.1 Selection of Temperature Sensors; 401.2<br>Installation of Temperature Sensors<br>401.3 Duct Temperature Sensors<br>401.3 Duct Temperature and Velocity Profiles401.4 Accuracy of Dry<br>Bulb Temperatures; 401.5 Atmospheric Humidity; 401.6 Dryer Exit<br>Humidity; 401.7 Accuracy of Gas Wet Bulb Temperature; 402 Gas Flow;<br>402.1 Installed Flow Meters; 402.2 Inlet Gas; 402.3 Exit Gas<br>Measurement; 403 Material Temperature and Moisture Content; 403.1<br>Product Temperature Measurement; 403.2 Product Moisture Content;<br>404 Dust Flow Measurements; 405 Radiation and Convection Heat<br>Losses; 405.1 Estimated Heat Loss; 405.2 Measuring Heat Loss; 405.3<br>Outdoor Equipment; 406 Miscellaneous Measurements; 406.1 Static<br>Pressure<br>406.2 Location of Pressure Sensors406.3 Electric Power Measurements;<br>500 Test Procedure; 501 Plant-Scale Test; 502 Exploratory<br>Experiments; 502.1 Production Capacity; 502.2 Product Quality; 503<br>Preliminary Trial; 503.1 Water Run; 503.2 Dryer Operability; 504<br>Definitive Test; 504.1 Test Start-Up; 504.2 Running a Definitive Test in<br>a Plant-Scale Dryer; 505 Humidity and Moisture Measurements; 600<br>Computation of Results; 601 Nomenclature; 601.1 Variables; 601.2<br>Properties; 601.3 Subscripts; 602 Apex/crometric Chart Method |
|--------------------|---|
|                    | 602.4 Humid Air Volume  |
| Sommario/riassunto | Spray Dryers: A Guide to Performance Evaluation, Second Edition<br>discusses the reasons for spray drying. These reasons are usually to<br>produce a product with certain desired properties or with better<br>efficiency than other methods. The book discusses how to plan in light<br>of these objectives and gives guidance on the variables affecting<br>product properties and dryer performance, to decide which variables to<br>evaluate. Technical spray dryer installations are briefly described.<br>Checklists are given to aid in planning measurements and listing steps<br>needed for a test.  |