

ISO 20427:2026-03 (E)

Pigments and extenders - Dispersion procedure for sedimentation-based particle sizing of suspended pigment or extender with liquid sedimentation methods

Contents

Page

| | |
|--|-----------|
| Foreword..... | iv |
| 1 Scope..... | 1 |
| 2 Normative references..... | 1 |
| 3 Terms and definitions..... | 2 |
| 4 Principles of dispersion..... | 3 |
| 4.1 Principles of ultrasonic dispersion..... | 3 |
| 4.2 Principles of wet jet mill dispersion..... | 3 |
| 4.3 Principles of shaker-based dispersion..... | 3 |
| 5 Principles of sedimentation-based techniques for particle size analysis..... | 4 |
| 5.1 Stokesian sedimentation analysis..... | 4 |
| 5.2 Disc-type centrifuges..... | 4 |
| 5.3 Cuvette-type centrifuges..... | 4 |
| 5.4 Gravitation-based sedimentation methods..... | 4 |
| 5.5 Centrifugal field-flow fractionation method..... | 5 |
| 6 Apparatus..... | 5 |
| 7 Settings for dispersion..... | 9 |
| 7.1 Procedure of ultrasonic dispersion using a probe-type sonicator..... | 9 |
| 7.2 Procedure of ultrasonic dispersion using a bath-type sonicator..... | 9 |
| 7.3 Procedure of shaker-based dispersion..... | 10 |
| 8 Dispersion procedure..... | 10 |
| 8.1 General..... | 10 |
| 8.2 Sampling for dispersion..... | 10 |
| 8.3 Reagents..... | 10 |
| 8.4 Recommendations for sample preparation..... | 11 |
| 9 Sampling..... | 11 |
| 10 Measurement and expression of results..... | 11 |
| 11 Test report..... | 11 |
| Annex A (normative) Protocol for the determination of energy input..... | 13 |
| Annex B (informative) Limits for ultrasonic dispersion procedure..... | 16 |
| Annex C (informative) Procedures for dispersion of TiO₂ pigments..... | 17 |
| Annex D (informative) Procedure for dispersion of CaCO₃ with wet jet milling..... | 18 |
| Annex E (informative) Procedure for the dispersion of Fe₂O₃ with an ultrasonic probe..... | 19 |
| Annex F (informative) General procedure for dispersion of pigment or extender..... | 20 |
| Bibliography..... | 23 |