DIN EN ISO 20427:2026-12 (E)

Pigments and extenders - Dispersion procedure for sedimentation-based particle sizing of suspended pigment or extender with liquid sedimentation methods (ISO 20427:2026)

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 TiO_2 pigments** ... **17**

Annex D (informative) **Procedure for dispersion of $CaCO_3$ with wet jet milling** ... **18**

Annex E (informative) **Procedure for the dispersion of Fe_2O_3 with an ultrasonic probe** ... **19**

Annex F (informative) **General procedure for dispersion of pigment or extender** ... **20**

Bibliography ... **23**