

ISO 22412:2025-09 (E)

Particle size analysis - Dynamic light scattering (DLS)

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols and units	3
5	Principle	4
6	Apparatus	5
7	Test sample preparation	7
7.1	General	7
7.2	Concentration limits	7
7.3	Checks for concentration suitability	8
8	Measurement procedure	8
9	Evaluation of results	10
9.1	General	10
9.2	Correlation analysis	11
9.2.1	Cumulants method	11
9.2.2	Distribution calculation algorithms	11
9.3	Frequency analysis	12
9.4	Multi angle dynamic light scattering (MADLS)	12
9.4.1	Measurement of an angular-independent particle size distribution	12
9.4.2	General angular and concentration dependence	14
9.4.3	Measurement of particles with optical anisotropy	14
9.5	Imaging dynamic light scattering (DLS)	14
9.5.1	Image-based dynamic light scattering (IDLS)	14
9.5.2	Ultrafast image-based dynamic light scattering (UIDLS)	15
10	System qualification and quality control	15
10.1	System qualification	15
10.2	Quality control of measurement results	16
10.3	Method precision and measurement uncertainty	16
11	Test report	17
Annex A (informative) Theoretical background		19
Annex B (informative) Online measurements		33
Annex C (informative) Recommendations for sample preparation		35
Annex D (informative) Guidance on measurement planning, data interpretation and quality control		41
Annex E (informative) Guidance on potential measurement artefacts and on ways to minimize their influence		58
Bibliography		61