



SLOVENSKI STANDARD

kSIST-TS FprCEN/TS 18269:2026

01-februar-2026

Nanotehnologije - Navodilo za določanje agregacijskega in aglomeracijskega stanja nanoobjektov

Nanotechnologies - Guidance on the determination of the aggregation and agglomeration state of nano-objects

Nanotechnologien - Leitfaden zur Bestimmung des Aggregations- und Agglomerationszustands von Nanoobjekten

Nanotechnologies - Guide pour la détermination de l'état d'agrégation et d'agglomération des nano-objets

Ta slovenski standard je istoveten z: FprCEN/TS 18269

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ICS:

07.120

Nanotehnologije

Nanotechnologies

kSIST-TS FprCEN/TS 18269:2026

en,fr,de

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

FINAL DRAFT
FprCEN/TS 18269

November 2025

ICS 07.120

English Version

**Nanotechnologies - Guidance on the determination of the
aggregation and agglomeration state of nano-objects**

Nanotechnologies - Guide pour la détermination de
l'état d'agrégation et d'agglomération des nano-objets

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Aggregations- und Agglomerationszustands von
Nanoobjekten

This draft Technical Specification is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 352.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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FprCEN/TS 18269:2025 (E)**European foreword**

This document (FprCEN/TS 18269:2025) has been prepared by Technical Committee CEN/TC 352 “Nanotechnologies”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Vote on TS.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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Introduction

This document guides users in the appropriate selection and use of commercially available techniques for determination of the measurands associated with the agglomeration state and aggregation state of nano-objects in powders, in aerosols and in suspensions (liquid dispersions). Many materials consist of agglomerates and aggregates composed of constituent particles (CP) and also isolated, individual (IIP) (not bound) particles. The agglomeration state and aggregation state can explain macroscopic properties of particulate systems, for example stability, transport in air and liquids, dustiness and inhalability for aerosols. The situation is further complicated by a variety of synthesis and dispersing mechanisms used.

Guidance is provided on key terminology, for example what is meant by agglomerate, aggregate, agglomeration state and aggregation state. Additionally, the differences between terminology used by standardization organizations and some regulatory bodies are noted.

The document describes measurands that can be used to determine the agglomeration state and aggregation state (AgAg state) of nano-objects and connects them with corresponding measurement techniques. They are briefly explained along with their advantages and limitations. The document also describes methods for the determination of the AgAg state, which generally includes both a well-specified preparation and the measurement of samples. Sample preparation can majorly affect the AgAg state and therefore constitutes a crucial part within methodology. This document advises on the proper use of measurement techniques and provides general rules on sample preparation including sonication in liquids and shear flow in aerosols for AgAg state determination. However, specific protocols on sample preparation are not described. This document also discusses aspects of stability, i.e. the time dependency of AgAg state which depends on factors such as the chemistry of particles, solvent and additives.

This document will be a useful tool for nanotechnology scientists, companies, risk assessors and regulators to identify relevant information for measuring measurands of aggregates and agglomerates and the state of agglomeration and aggregation.

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