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**CEN/TS 17274:2018**

 **NBN**



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**Nanotechnologies - Guidelines for determining protocols for the explosivity and flammability of powders containing nano-objects (for transport, handling and storage)**

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Valid from 14-12-2018

ICS: 07.120

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TECHNICAL SPECIFICATION  
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TECHNISCHE SPEZIFIKATION

**CEN/TS 17274**

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ICS 07.120

English Version

**Nanotechnologies - Guidelines for determining protocols  
for the explosivity and flammability of powders containing  
nano-objects (for transport, handling and storage)**

Nanotechnologies - Lignes directrices sur les  
protocoles permettant de déterminer les  
caractéristiques d'explosivité et d'inflammabilité des  
poudres contenant des nano-objets (en vue de leur  
transport, manipulation et stockage)

Nanotechnologien - Leitfaden für Protokolle zur  
Bestimmung des Brand- und Explosionsverhaltens von  
Pulvern, die Nano-Objekte beinhalten (für Transport,  
Handhabung und Lagerung)

This Technical Specification (CEN/TS) was approved by CEN on 28 September 2018 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## European foreword

This document (CEN/TS 17274:2018) has been prepared by Technical Committee CEN/TC 352 "Nanotechnologies", the secretariat of which is held by AFNOR.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**CEN/TS 17274:2018 (E)****1 Scope**

This document provides protocol guidelines for determining explosivity and flammability characteristics of powders containing manufactured nano-objects. These explosivity and flammability characteristics are needed for safety data sheets for safe storage, handling and transport of any powder.

In particular, this document will provide protocol guidelines concerning:

- the determination of flammability characteristics of powders containing nano-objects with regard to sensitivity to ignition sources;
- the ability of a powder containing nano-objects to generate an explosive atmosphere and the assessment of its explosion characteristics.

This document is not suitable for use with recognized explosives, such as gunpowder and dynamite, explosives which do not require oxygen for combustion, or substances or mixtures of substances which may under some circumstances behave in a similar manner. Where any doubt exists about the existence of hazard due to explosive properties, it is best to seek expert advice.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14034-1:2004+A1:2011, *Determination of explosion characteristics of dust clouds — Part 1: Determination of the maximum explosion pressure  $p_{max}$  of dust clouds*

EN 14034-2:2006+A1:2011, *Determination of explosion characteristics of dust clouds — Part 2: Determination of the maximum rate of explosion pressure rise  $(dp/dt)_{max}$  of dust clouds*

EN 14034-3:2006+A1:2011, *Determination of explosion characteristics of dust clouds — Part 3: Determination of the lower explosion limit LEL of dust clouds*

EN 14034-4:2004+A1:2011, *Determination of explosion characteristics of dust clouds — Part 4: Determination of the limiting oxygen concentration LOC of dust clouds*

EN ISO/IEC 80079-20-2:2016, *Explosive atmospheres — Part 20-2: Material characteristics — Combustible dusts test methods (ISO/IEC 80079-20-2:2016)*

**3 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

**3.1****powder**

assembly of discrete particles usually less than 1 mm in size

[SOURCE: EN ISO 3252:2000, 1001]