Irish Standard Recommendation
S.R. CEN/TS 17274:2018

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

S.R. CEN/TS 17274:2018

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
CEN/TS 17274:2018	2018-12-12

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2019-01-15	07.120
	NOTE: If blank see CEN/CENELEC cover page

NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
Dublin 9	W NSAI.ie	W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

S.R. CEN/TS 17274:2018 is the adopted Irish version of the European Document CEN/TS 17274:2018, Nanotechnologies - Guidelines for determining protocols for the explosivity and flammability of powders containing nano-objects (for transport, handling and storage)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 17274

December 2018

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.

CEN members are the national standards bodies of 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 United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. CEN/TS 17274:2018 E

Contents

Page

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.

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]