



SLOVENSKI STANDARD
SIST EN 14852:2006

01-februar-2006

9a VUÛÿUnUÛYfcgc`YË8c`c Ub^j ý][bYfUnXU^'nUfUndefý]U

Aerosol containers - Determination of the ignition distance of the spray jet

Aerosolpackungen - Ermittlung des Entzündungsabstandes des Sprühstrahles

Réipients pour aérosols - Détermination de la distance d'inflammation du jet de pulvérisation

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 14852:2006](https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d87a566055/sist-en-14852-2006)

Ta slovenski standard je istoveten z: EN 14852:2005

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
55.130	Ú[^çã \^Áæ!;[•[^	Aerosol containers

SIST EN 14852:2006

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 14852:2006](https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006)

<https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 14852

November 2005

ICS 13.220.40; 55.130

English Version

Aerosol containers - Determination of the ignition distance of the spray jet

Réipients pour aérosol - Détermination de la distance
d'inflammation du jet de pulvérisation

Aerosolpackungen - Ermittlung des Entzündungsabstandes
des Sprühstrahles

This European Standard was approved by CEN on 14 October 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 14852:2006](https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006)

<https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents		Page
1	Scope	4
2	Terms and definitions	4
3	Principle.....	4
4	Apparatus	4
5	Test conditions	4
6	Preparation of test apparatus	5
7	Test sequence	5
8	Test procedure	5
9	Test report	7

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 14852:2006](https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006)

<https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006>

Foreword

This document (EN 14852:2005) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This draft European Standard is one of a series of thirteen related standards with the following titles:

EN 14847, *Aerosol containers — Tinplate containers — Dimensions of the 25,4 mm aperture.*

EN 14848, *Aerosol containers — Metal containers with 25,4 mm aperture — Dimensions of valve cups.*

prEN 15006, *Metal aerosol containers — Aluminium containers — Dimensions of the 25,4 mm (one inch) aperture.*

EN 14849, *Aerosol containers — Glass containers — Dimensions of aerosol valve ferrules.*

prEN 15007, *Metal aerosol containers — Tinplate containers — Dimensions of three-piece cans.*

prEN 15008, *Metal aerosol containers — Dimensions of 1-piece aluminium can with 25,4 mm aperture.*

EN 14850, *Aerosol containers — Metal containers with 25,4 mm aperture — Measurement of contact height.*

EN 14851, *Aerosol containers — Aerosol foam flammability test.*

EN 14852, *Aerosol containers — Determination of the ignition distance of the spray jet.*

EN 14853, *Aerosol containers — Enclosed space ignition test.*

EN 14854, *Aerosol containers — Glass containers — Dimensions of the neck finish.*

prEN 15009, *Aerosol containers — Bicompartmented aerosol containers.*

prEN 15010, *Aerosol containers — Aluminium containers — Tolerances of the fundamental dimensions in connection with the clinch.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EN 14852:2005 (E)

1 Scope

This European Standard describes a method of determining the maximum distance between the orifice of an aerosol container and a flame that results in ignition and sustained combustion of an aerosol spray. The standard applies to aerosol products that have a spray distance of 150 mm or more. It does not apply to aerosol containers fitted with a metering valve.

NOTE Aerosol products dispensed in the form of a foam, mousse, gel or paste which have a spray distance of less than 150 mm are specified in EN 14851.

2 Terms and definitions

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

2.1

ignition source

gas burner providing a blue non-luminous flame 40 mm to 50 mm in height

2.2

sustained combustion

stable flame maintained for 5 s

3 Principle

iTeh STANDARD PREVIEW
(standards.iteh.ai)

An aerosol is sprayed towards an ignition source at distances from 150 mm to 900 mm in increments of 150 mm. Any resulting ignition is noted and any sustained combustion which occurs is timed for up to 5 s.

[SIST EN 14852:2006](https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006)

<https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006>

4 Apparatus

4.1 **Scale**, for measuring height of flame, graduated in millimetres.

4.2 **Support and clamp**, for holding the graduated scale in position.

4.3 **Chronometer (stopwatch)**, accurate to $\pm 0,2$ s.

4.4 **Candle, wax taper, match or lighter**.

4.5 **Calibrated laboratory scales (balance)**, accurate to $\pm 0,1$ g.

4.6 **Water bath**, accurate to ± 1 °C and maintained at 20 °C.

4.7 **Thermometer**, accurate to ± 1 °C.

4.8 **Hygrometer** accurate to ± 5 %.

4.9 **Pressure, gauge**, accurate to $\pm 0,1$ bar.

5 Test conditions

The tests shall be carried out in a fume hood capable of ventilation, with the temperature controlled at 20 °C ± 5 °C and relative humidity in the range 30 % to 80 %. Ventilate the fume hood and room for at least 3 min after each test.

WARNING — Take all necessary safety precautions to prevent the inhalation of combustion products.

6 Preparation of test apparatus

Condition a minimum of 3 full aerosol containers per product to $20\text{ °C} \pm 1\text{ °C}$ by immersing at least 95 % of the container in water at this temperature for at least 30 min before each test. Before testing, prime each aerosol by discharging for approximately 1 s.

NOTE The purpose of this action is to remove non-homogeneous material from the diptube.

7 Test sequence

Each aerosol container shall be tested:

- a) when full by carrying out the complete procedure, with the gas burner in the range of 150 mm to 900 mm from the actuator of the aerosol container;
- b) when 10 % to 12 % full (nominal % by weight) by undergoing only one test, either at 150 mm from the actuator when the spray from a full container did not ignite at all, otherwise at the Flame Ignition Distance of the spray of a full container plus 150 mm.

The ignition source shall be positioned accordingly.

8 Test procedure

NOTE The following procedure requires spray to be tested at intervals of 150 mm in the distance between the burner flame and the aerosol actuator orifice, within the range of 150 mm to 900 mm. It is convenient to start at 600 mm distance between burner flame and aerosol actuator. The distance between burner flame and aerosol actuator should be increased by 150 mm if the spray ignites at 600 mm distance or decreased by 150 mm if the spray does not ignite. The aim of the procedure is to determine the maximum distance between aerosol actuator and burner flame that leads to sustained combustion of the spray or to determine that ignition could not be obtained at 150 mm distance between the burner flame and the aerosol's actuator.

8.1 Record the temperature and relative humidity of the environment (see clause 5).

8.2 Determine the total mass of the full aerosol dispenser.

8.3 Determine the internal pressure within the aerosol dispenser and initial discharge rate at $20\text{ °C} \pm 1\text{ °C}$. If the internal pressure or the initial discharge rate indicate that the dispenser is likely to be faulty or incompletely filled it shall not be used for the test.

8.4 Support the gas burner on a flat horizontal surface or fix the burner to a support by means of a clamp.

8.5 Ignite the gas burner and adjust it to produce a non-luminous flame 40 mm to 50 mm high.

8.6 Place the aerosol actuator's orifice at the required distance from the flame.

NOTE The aerosol is tested in the position it is designed to be used in, e.g. upright or inverted.

8.7 Ensure the aerosol actuator's orifice is directed towards and level with the burner flame, so that the spray will be expelled through the top half of the flame (see Figure 1).

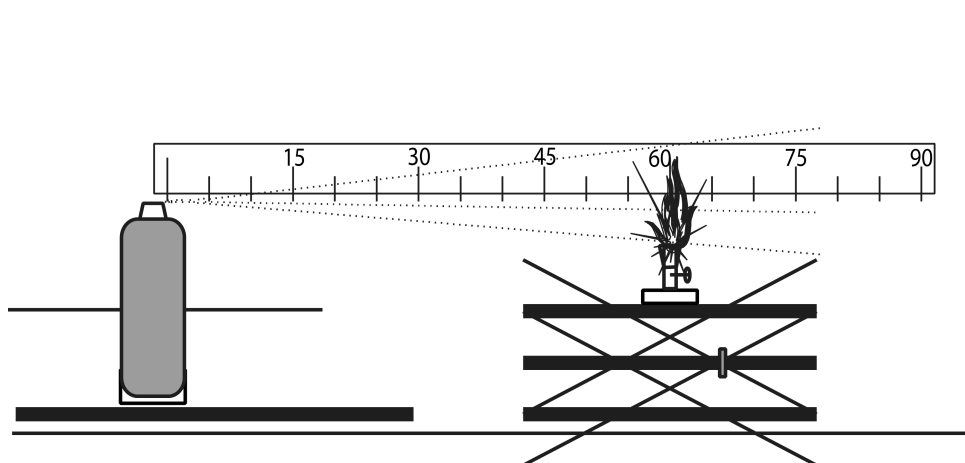


Figure 1 — Apparatus for measuring the ignition distance of an aerosol spray

- 8.8** Immediately before spraying, shake the dispenser in accordance with the manufacturer's instructions.
- 8.9** Follow strictly the manufacturer's instructions for use, including whether the container is intended to be used in the upright or inverted position. Actuate the valve of the aerosol container, to discharge its contents for 5 s. If ignition occurs, continue discharging and time the duration of the flame for up to 5 s, from the start of ignition.
- 8.10** Record the ignition results for the relevant distance between the gas burner and the aerosol container in a table similar to that shown in Table 1.
- 8.11** If no ignition occurs during step 8.9, test the aerosol in alternative orientations, e.g. inverted for upright products, to determine whether ignition is obtained.
- 8.12** Repeat steps 8.7, 8.8, 8.9, 8.10 and 8.11 twice more (a total of three times) for the same container at the same distance between the gas burner and the aerosol actuator.
- 8.13** Repeat the test procedure (8.6 to 8.12) for another two aerosol containers of the same product at the same distance between gas burner and aerosol actuator.
- 8.14** Repeat steps 8.6 to 8.13 of the test procedure, increasing or decreasing the distance between the aerosol actuator and the flame by 150 mm (within the range 150 mm to 900 mm), depending on the outcome of each test.
- 8.15** If no ignition occurs at 150 mm, the procedure is finished for initially full containers. The procedure is also finished when ignition and sustained combustion is obtained at a distance of 900 mm. If ignition could not be obtained at 150 mm distance, record that ignition did not occur. The maximum distance between burner flame and the aerosol's actuator for which an ignition and sustained combustion was observed is noted as the Ignition Distance in all other circumstances.
- 8.16** One test should also be conducted on 3 containers of 10 % to 12 % nominal fill level. Discharge an aerosol container to a 10 % to 12 % nominal fill level (by mass) in bursts of 30 s maximum. Observe a 300 s minimum time period between bursts. During this interim period containers shall be placed in the water bath for conditioning. These containers should be tested at a distance between the aerosol's actuator and the burner flame of the Flame Ignition Distance of full containers plus 150 mm.
- 8.17** Repeat steps 8.6 to 8.13 for 10 % to 12 % nominal fill aerosol containers, omitting step 8.11 and 8.12. Perform this test only once on each container in the position (e.g. upright and inverted) that resulted in ignition (if any) when the full container was tested.

8.18 Record all results in a table similar to that shown in Table 1.

9 Test report

The containers with a 10 % to 12 % nominal fill level are tested only once. The result table needs only one result per container indicated.

Table 1 — Recording of results

Date		Temperature			°C					
		Relative humidity			%					
Name of product										
Net volume	ml	Container 1			Container 2			Container 3		
Initial level of filling		%			%			%		
Container distance	Test	1	2	3	1	2	3	1	2	3
15 cm	Ignition? (Y/N)									
30 cm	Ignition? (Y/N)									
45 cm	Ignition? (Y/N)									
60 cm	Ignition? (Y/N)									
75 cm	Ignition? (Y/N)									
90 cm	Ignition? (Y/N)									
Observations	https://standards.iteh.ai/catalog/standards/sist/5306b50a-0526-4b8a-8d99-18d89a506055/sist-en-14852-2006									