

English Version

Ethanol as a blending component of petrol - Determination of appearance - Visual method

Éthanol comme base de mélange à l'essence -
Détermination de l'aspect - Méthode visuelle

Ethanol zur Verwendung als Blendkomponente in
Ottokraftstoff - Bestimmung des Aussehens - Visuelle
Begutachtung

This European Standard was approved by CEN on 19 March 2009.

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Foreword

This document (EN 15769:2009) has been prepared by Technical Committee CEN/TC 19 “Gaseous and liquid fuels, lubricants and related products of petroleum, synthetic and biological origin”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by October 2009, and conflicting national standards shall be withdrawn at the latest by October 2009.

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

This document is developed to give a better determination of the requirement concerning appearance as used in European ethanol specifications, especially for automotive fuel application. It is derived from two existing regulatory methods for general alcohol [1] and spirits [2].

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

1 Scope

This European Standard specifies a procedure for the determination of appearance of ethanol by visual method. The method enables to determine colour and limpidity of ethanol.

NOTE Automotive fuel standards require a fuel to be clear and bright, meaning absent of particles, respectively absent of haziness. For this document that requirement is combined into a limpidity requirement.

2 Normative references

The following referenced documents are indispensable for the application 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 ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

3 Terms and definitions

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

3.1
turbidity
degree of opacity of a fluid

3.2
limpidity
clarity
absence of turbidity

4 Principle

The absence of colour and the limpidity (effectively the absence of turbidity) are assessed visually by comparison with water against a white background and a black background.

5 Apparatus

5.1 **Glass cylinders**, colourless, 40 cm to 60 cm in height and 20 mm to 40 mm in diameter.

NOTE 1 Tubes used for alcohol measurement with an alcoholmeter may be used.

NOTE 2 To check that the base of the glass cylinder is clean and colourless, one can place them empty on the white background (5.3).

5.2 **Water**, for analytical laboratory use, conforming to grade 3 of EN ISO 3696

5.3 **Background**, white, respectively black paper sheet.

NOTE Paper of A4-size for laser printer application is sufficient.

6 Sampling

Collect the sample (500 ml) in glass bottles, Teflon or silicon capped.

Samples are stored at room temperature without any direct sun light prior to analysis.

7 Procedure

Fill one cylinder (5.1) with sample to a depth of approximately 40 cm and a second, comparison cylinder, with water (5.2) to the same height.

Place the two glass cylinders on the white background (5.3) for determination of the colour and the limpidity.

Observe the sample in a clear, well lighted room from above, i.e. through the length of the cylinder, and compare it with the comparison cylinder.

Repeat the observation on the black background.

8 Interpretation

Assess the colour and limpidity of the sample when observed as set out in Clause 7.

Determine visually, by comparison with the cylinder filled with water using both backgrounds, if the sample is coloured or colourless like the water is.

Determine visually, by comparison with the cylinder filled with water using both backgrounds, if the sample is turbid or clear like the water is.

9 Expression of results

Report the observation: clear (limpid) or turbid, colourless or coloured.

10 Statistical data

A round robin based on colouring with sunset yellow and initiating turbidity by adding barium chloride has given the following results:

- a) Colour: 50 % of good results at 0,5 ppm, and 100 % at 2 ppm,
- b) Turbidity: 100 % of good results at 50 ppm.

11 Test report

The test report shall specify:

- a) a reference to this European standard, i.e. EN 15769;
- b) all information necessary for the complete identification of the sample;
- c) the test results obtained (see 9);

- d) any deviation, by agreement or otherwise, from the procedure specified in this European Standard, or regarded as optional, together with details of any incidents which may have influenced the test results;
- e) the date of the test.

Bibliography

- [1] European Commission regulation (EC) N° 625/2003: annex IV, *Community analysis method for neutral alcohol – Method 2: Evaluation of colour and/or clarity*
- [2] AOAC, *Official method for spirits “935.15” and for cordials and liqueurs “935.17”*