

## **TERMOMEETRITA KLAASIST ALKOHOLOMEETRID JA ALKOHOLIAREOMEETRID**

Glass alcoholometers and alcohol hydrometers  
not incorporating a thermometer

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

|                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                  |
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| Käesolev Eesti standard EVS-ISO 4801:2007 "Termomeetritä klaasist alkoholomeetrid ja alkoholiareomeetrid" sisaldab rahvusvahelise standardi ISO 4801:1979 "Glass alcoholometers and alcohol hydrometers not incorporating a thermometer" identset ingliskeelset teksti. | This Estonian Standard EVS-ISO 4801:2007 consists of the identical English text of the International Standard ISO 4801:1979 "Glass alcoholometers and alcohol hydrometers not incorporating a thermometer".                      |
| Standardi avaldamise korraldas Eesti Standardikeskus.                                                                                                                                                                                                                   | Estonian standard is published by the Estonian Centre for Standardisation.                                                                                                                                                       |
| Standard EVS-ISO 4801:2007 on kinnitatud Eesti Standardikeskuse 10.12.2007 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teataja 2008. aasta jaanuarikuu numbris.                                                                                            | This standard is ratified with the order of Estonian Centre for Standardisation dated 10.12.2007 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Standard on kättesaadav Eesti Standardikeskusest.                                                                                                                                                                                                                       | The standard is available from Estonian Centre for Standardisation.                                                                                                                                                              |

**Käsitlusala**

Käesolev rahvusvaheline standard esitab nõuded kolme erinevat tüüpi termomeetritä klaasist mõõtevahenditele, mis sobivad etanoolisisalduse täpseks määramiseks vesilahuses.

tüüp 1 – alkoholomeetrid, mis on gradueeritud etanooli mahuprotsentides temperatuuril 20 °C;

tüüp 2 – alkoholomeetrid, mis on gradueeritud etanooli massiprotsentides;

tüüp 3 – alkoholiareomeetrid, mis on gradueeritud tiheduse ühikutes (kg/m<sup>3</sup>) temperatuuril 20 °C.

Mõõtevahendi tüüpidele 1 ja 2 määratletakse kaks täpsusklassi ning tüübile 3 üks täpsusklass.

Termomeetriga alkoholomeetreid ja alkoholiareomeetreid käsitletakse standardis ISO 4805<sup>1)</sup>.

**ICS 71.040.20 Laborinõud ja –aparaadid****Standardite reprodutseerimis- ja levitamisoigus kuulub Eesti Standardikeskusele**

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# Glass alcoholometers and alcohol hydrometers not incorporating a thermometer

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard sets forth the requirements for three different types of glass instrument, not incorporating a thermometer, suitable for the accurate determination of the ethanol content of simple mixtures of ethanol and water, namely

- type 1 : alcoholometers graduated in percentage of ethanol by volume at 20 °C;
- type 2 : alcoholometers graduated in percentage of ethanol by mass;
- type 3 : alcohol hydrometers graduated in units of density (kilograms per cubic metre) at 20 °C.

Two classes of accuracy are specified for types 1 and 2 and one class for type 3.

Alcoholometers and alcohol hydrometers with an incorporated thermometer are dealt with in ISO 4805<sup>1)</sup>.

## 2 DEFINITIONS

**2.1 alcoholometer** : An instrument which indicates

- the alcoholic strength by mass, or
- the alcoholic strength by volume,

of a mixture of water and ethanol.

**2.2 alcohol hydrometer** : An instrument designed to measure the density of a mixture of water and ethanol.

**2.3 ethanol content of an ethanol-water mixture as a percentage by volume [% (V/V)] at 20 °C** : The number of volumes of ethanol at 20 °C required to form 100 volumes of that mixture at 20 °C.

NOTE — In countries where the relevant regulations require it, the expression “% vol” may replace the expression “% (V/V)”.

**2.4 ethanol content of an ethanol-water mixture as a percentage by mass [% (m/m)]** : The number of units of mass of ethanol required to form 100 units of mass of that mixture.

NOTE — In countries where the relevant regulations require it, the expression “% mass” may replace the expression “% (m/m)”.

**2.5 density of an ethanol-water mixture at 20 °C** : The mass of unit volume of the mixture at 20 °C. It is expressed in kilograms per cubic metre.

## 3 BASIS OF SCALE

The basis of the scale of each type of instrument is as follows :

- Type 1 alcoholometers : ethanol content as a percentage by volume at 20 °C.
- Type 2 alcoholometers : ethanol content as a percentage by mass.
- Type 3 alcohol hydrometers : density at 20 °C.

The basis of the scales of the type 1 and type 2 hydrometers shall be the tables of density versus composition of ethanol solution published with the approval of the International Organization of Legal Metrology.

## 4 CLASSIFICATION

Two classes of accuracy are specified, as shown in table 1.

TABLE 1 — Classes of accuracy

| Class | Minimum mean distance between centres of adjacent graduation lines<br>mm | Type    |
|-------|--------------------------------------------------------------------------|---------|
| 1     | 1,5                                                                      | 1, 2, 3 |
| 2     | 1,05                                                                     | 1, 2    |

## 5 REFERENCE TEMPERATURE

The reference temperature for all three types of instrument shall be 20 °C.

## 6 REFERENCE LEVEL FOR READING

The instruments shall be graduated for reading at the level of the free horizontal surface of the liquid.

1) At present at the stage of draft.