

# SVENSK STANDARD

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### **Laboratorieglass – Provrör för mätning av erytrocytär sedimentering enligt Westergren-metoden (Sänkningsreaktion) (ISO 13079:2011)**

**Laboratory glass and plastics ware – Tubes for the measurement of erythrocyte sedimentation rate by the Westergren method (ISO 13079:2011)**

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EUROPEAN STANDARD

**EN ISO 13079**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2011

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ICS 11.100.10

English Version

Laboratory glass and plastics ware - Tubes for the measurement  
of the erythrocyte sedimentation rate by the Westergren method  
(ISO 13079:2011)

Matériel de laboratoire en verre et en plastique - Tubes  
pour le mesurage de la vitesse de sédimentation des  
érythrocytes par la méthode Westergren (ISO 13079:2011)

Laborgeräte aus Glas und Kunststoff - Westergren-Rohre  
für die Erythrozyten-Sedimentationsgeschwindigkeit (ISO  
13079:2011)

This European Standard was approved by CEN on 14 July 2011.

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## Foreword

This document (EN ISO 13079:2011) has been prepared by Technical Committee ISO/TC 48 "Laboratory equipment" in collaboration with Technical Committee CEN/TC 332 "Laboratory equipment" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

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### Endorsement notice

The text of ISO 13079:2011 has been approved by CEN as a EN ISO 13079:2011 without any modification.





# Laboratory glass and plastics ware — Tubes for the measurement of the erythrocyte sedimentation rate by the Westergren method

## 1 Scope

This International Standard specifies requirements for single-use and re-usable glass and plastics tubes for measuring the erythrocyte sedimentation rate (ESR) by the Westergren method, and for a support to hold tubes during the performance of the test. These so-called “Westergren tubes” are also sometimes designated as “Westergren pipettes”. A procedure for measuring the erythrocyte sedimentation rate by the Westergren method is given in informative Annex D.

This International Standard does not apply to single-use containers for human venous blood specimen collection and their accessories for which other standards apply. It also does not apply for devices where the Westergren method has been used as basis to develop other, similar methods or equipment for the erythrocyte sedimentation rate determination.

## 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.

ISO 719, *Glass — Hydrolytic resistance of glass grains at 98 °C — Method of test and classification*

## 3 Material

### 3.1 General

**3.1.1** Westergren tubes shall be made from rigid, transparent plastics or from glass of Class HGB 1, HGB 2 or HGB 3 in accordance with ISO 719 so that:

- a) the rigidity, when tested according to Annex A, shall be such that the distortion does not exceed 1 mm for re-usable Westergren tubes and 1,5 mm for single-use Westergren tubes;
- b) the transparency shall be sufficient to permit the top of the column of blood and the top of the red cell layer to be seen clearly in relation to the scale.

**3.1.2** Westergren tubes shall be free from defects which impair observation of the top of the column of blood and of the top of the red cell layer.

### 3.2 Glass

The manufacturer of the glass tubes should ensure that the glass tubes are as free as possible from visible defects and reasonably free from internal stress.

### 3.3 Plastics

3.3.1 The material of which plastics tubes are made shall not affect the ESR value, when tested in accordance with the method described in Annex B, by more than 6 mm.

3.3.2 The manufacturer of the plastics tubes shall ensure the following:

- a) they shall not show adhesive properties towards blood cells;
- b) they shall not release plasticizers that might alter sedimentation;
- c) if a mould-release agent is used in the manufacturing process, it shall not alter sedimentation.

3.3.3 The user should also check the validity of a batch of plastics tubes by comparing the ESR obtained when the test is performed using some of these with the results when glass reference tubes are used.

## 4 Single-use Westergren tubes

### 4.1 General design

The general design of the single-use Westergren tube shall be as shown in Figure 1.

### 4.2 Straightness

The tube shall be straight when tested in accordance with the method described in Annex C.

### 4.3 Finish

4.3.1 The glass tube shall be cut square (within 10°) with the axis of the tube, and shall be lightly fire polished at each end. The ends may be slightly narrowed within or close to the tolerance given in Table 1, due to the finishing process.

4.3.2 The plastics tube should be cut square (within 10°) with the axis of the tube. The ends should be smooth and may be slightly bevelled. Other ends are acceptable if they comply with the dimensional requirements as specified in Table 1.

4.3.3 The tube shall be supplied free from any contamination which would affect the ESR value when tested in accordance with the method described in Annex B.

4.3.4 The tube, by itself or in association with its support, shall have a mechanism which ensures that the tube remains filled with blood, from its lower end to the zero mark on the scale, during the 60 min required to determine the ESR.

### 4.4 Dimensions

The measuring part of the tube shall conform to the dimensions given in Table 1.

**Table 1 — Essential dimensions of single-use Westergren tubes**

Dimensions in millimetres

Internal diameter	2,55 ± 0,15
Length of measuring part	200 ± 2

#### 4.5 Graduation and figuring

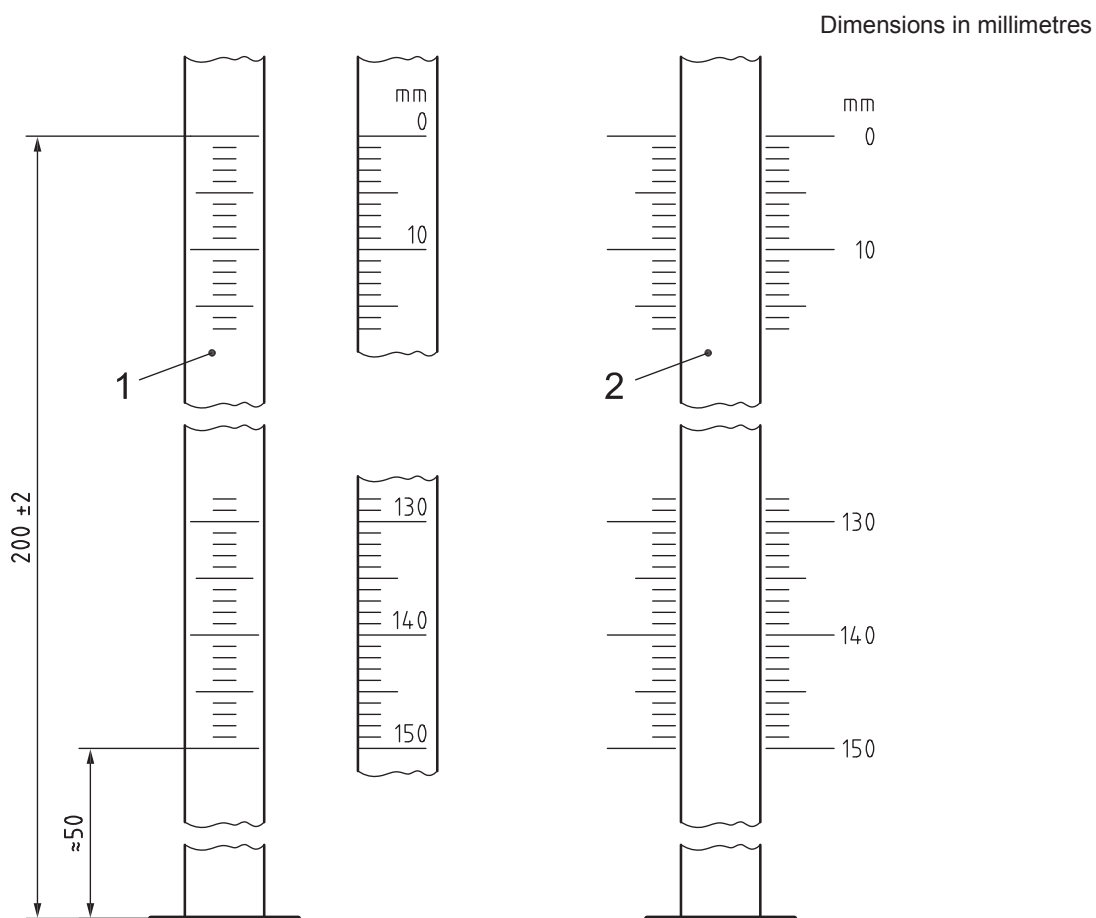
Graduation or figuring shall be in accordance with Clause 7.

#### 4.6 Inscriptions

Inscriptions on the Westergren tube shall be in accordance with Clause 8.

#### 4.7 Labelling

Inscriptions on the packaging shall be in accordance with 9.1.



#### Key

- 1 tube with scale
- 2 tube with scale on support

Figure 1 — Single-use Westergren tubes

### 5 Re-usable Westergren tubes

#### 5.1 General design

The general design of a re-usable Westergren tube shall be as shown in Figure 2.