Intended use

VACUETTE® ESR Tubes are used for the collection and transport of venous blood for blood sedimentation rate testing. ESR measurements refer to the Westergren method.

Product description

VACUETTE® ESR Tubes contain a 3.2% buffered tri-sodium citrate solution (0.109 mol/l). The mixing ratio is 1 part citrate solution to 4 parts blood. Tube interiors are sterile. 9/120mm tubes have a black cap composed of Brom Butyl Caoutchouc. 13/75mm tube caps are produced from PE (polyethylene) and are coloured by pigments purified in accordance with EN 71/3. The rubber component of the cap is composed of Brom Butyl Caoutchouc. The stabilisation ring is composed of PP (polypropylene).

Closed VACUETTE® ESR System

The system consists of:
- A 9/120mm, graduated, plastic tube with a citrate solution. Draw volume 1.5ml and 2.75ml.
- A 9/120mm glass tube with a citrate solution. Draw volumes of 1.6ml or 2.9ml are available.
- ESR rack with scale suitable for 1.5ml/1.6ml tubes, respectively ESR rack with scale suitable for 2.75ml/2.9ml tubes.

Procedures for closed VACUETTE® ESR measurement:

1. After sampling and also before starting the ESR measurement, gently invert the tube 5-10 times to obtain the correct mixture. Use of a rotating mixer is recommended.
2. Place 1.5ml, 1.6ml or 2.75ml, 2.9ml tube into the corresponding rack vertically. Align the 0 mark at top of scale with the bottom of the meniscus of the blood at the blood-air interface.
   - For the 1.5 ml/1.6ml ESR tube set timer for 30 minutes. The ESR rack suitable for 1.5 ml/1.6ml tubes delivers only the 1-hour Westergren value after 30 minutes reading time.
   - For the 2.75 or 2.9ml ESR tube set timer for 60 minutes. The ESR rack for 2.9ml tubes delivers the 1 hour and 2 hour Westergren value after 60 and 120 minutes reading time.
3. Discard VACUETTE® ESR Tubes without opening.

   The conversion scale becomes highly compressed above Westergren values of 100mm and ESR readings above this level should be repeated using the classic Westergren method if precise values are required.

1.5ml and 1.6ml tubes can be used with the following VACUETTE® ESR instruments:
- SRT 10II, SRS 20II, SRS 100II.
- The instrumentation allows for 1h Westergren results after 30 minutes.

(For further information contact Greiner Bio-One or see “VACUETTE® Automated ESR Systems Brochure”)

Open VACUETTE® ESR System

The system consists of 3 parts:
- A 13/75mm plastic tube with a citrate solution.
- A graduated pipette with rubber adapter
- ESR rack without any scale

Procedures for open VACUETTE® ESR measurement:

1. After sampling and also before starting the ESR measurement gently invert the tube 5-10 times to obtain the correct mixture. Use of a rotating mixer is recommended.
2. Remove the cap of the tube.
3. Insert the pipette into the opened tube and the blood will fill automatically to the zero-line of the pipette.
4. Place tube and pipette into the rack. Tube and pipette must be in a vertical position.
5. After 60 and 120 minutes, read level between settled erythrocytes and the supernatant plasma from pipette.
6. Afterwards dispose of the tube and pipette together.

**VACUETTE Precautions/Cautions**

**Precautions**
Do not use tubes if foreign matter is present!

**Caution**
1. Handle all biological samples and blood collection “sharps” (lancets, needles, luer adapters, and blood collection sets) according to the policies and procedures of your facility.
2. Obtain appropriate medical attention in the case of any exposure to biological samples (for example, through a puncture injury), since they may transmit HIV (AIDS), viral hepatitis, or other blood-borne pathogens.
3. Discard all blood collection “sharps” in biohazard containers approved for their disposal.
4. Transferring a sample from a syringe to a tube is not recommended. Additional manipulation of sharps increases the potential for needle stick injury. In addition, depressing the syringe plunger during transfer can create a positive pressure, forcefully displacing the stopper and sample and causing a potential blood exposure. Using a syringe for blood transfer may also cause over or under filling of tubes, resulting in an incorrect blood-to-additive ratio and potentially incorrect analysis results.
5. If blood is collected through an intravenous (IV) line, ensure that the line has been cleared of IV solution before beginning to fill blood collection tubes. This is critical to avoid erroneous laboratory data from IV fluid contamination.
6. All liquid preservatives and anticoagulants are clear and colourless. Do not use if they are discoloured or contain precipitates.
7. Do not use tubes after their expiration date.

**Storage**
Store tubes at 4–25°C (40–77°F).

**NOTE:** Avoid exposure to direct sunlight. Exceeding the maximum recommended storage temperature may lead to impairment of the tube quality (i.e. vacuum loss, drying out of liquid additives, colouring, etc.)

**Label Information**

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<thead>
<tr>
<th>REF</th>
<th>Item number</th>
<th>Temperature limit</th>
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<tbody>
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<td>LOT</td>
<td>LOT number: Batch number</td>
<td>In Vitro Diagnostic Device</td>
</tr>
<tr>
<td>Exp</td>
<td>Expiry Date</td>
<td>Consult Instructions For Use</td>
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<td>Ster</td>
<td>Sterilization Using Irradiation</td>
<td>Manufacturer</td>
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<tr>
<td>Do</td>
<td>Do Not Reuse</td>
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**References:**
ISO / EN / ANSI/AAMI Standards
EN 552 “Sterilisation of medical devices – Validation and routine control of sterilisation by irradiation”
Clinical Laboratory and Standards Institute (CLSI)
H1-A5 “Evacuated Tubes and Additives for Blood Specimen Collection- 5th Edition”; Approved Standard
H2-A4 “Methods for the Erythrocyte Sedimentation Rate (ESR) Test-4th Edition”; Approved Standard

(Not available in USA)
For more information please refer to the instructions for use with reference number: 980200.

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