

# CLEANING AND STORING MICROSCOPE SLIDES

## MALARIA MICROSCOPY STANDARD OPERATING PROCEDURE – MM-SOP-01

### 1. PURPOSE AND SCOPE

To detail the procedure for properly selecting, cleaning, wrapping and storing microscope slides that are to be used for preparing blood films for malaria microscopy.

This procedure is to be modified only with the approval of the national coordinator for quality assurance of malaria microscopy. All procedures specified herein are mandatory for all malaria microscopists working in national reference laboratories, in hospital laboratories or in basic health laboratories in health facilities performing malaria microscopy.

### 2. BACKGROUND

The glass slides used in microscopy are usually supplied in boxes of 50 or 72. They may be described on the label as “washed” or “pre-cleaned”. For malaria microscopy, plain glass slides should be of “superior” quality, with ground edges and a frosted end. The frosted end should be used to label the slide. The glass used in “superior” quality slides does not “fog” or become opaque in tropical conditions. Poorer quality glass slides are cheaper but deteriorate quickly in a hot, humid climate; washing does not remove the opaque patches, and the slides are not suitable for effective microscopy. Although the slides are described as “washed” or “pre-cleaned”, this does not mean that they can be used directly from the box. Slides *must be washed, dried and wrapped before being used for the preparation of blood films*.

It is important to ascertain that the slides to be used are clean and scratch-free. Dirty and scratched slides can result in poorly prepared blood films, which can compromise the quality and integrity of diagnosis. Slides that are slightly scratched and are considered unsuitable for blood films can be handed over to other sections of the laboratory service for routine use.

Malaria microscopy may be conducted in situations varying from a microscopist working alone in a remote laboratory with few facilities to large epidemiological surveys, studies to monitor drug resistance and other activities in the field. To ensure that staff have the correct materials, cleaned, wrapped slides, stains and other supplies are often prepared and provided from a central location. In some rural areas, however, laboratory staff must clean their own slides. In these situations, a good supply of slides is needed, which must be ready, cleaned and wrapped beforehand. This increases efficiency significantly, as it ensures the availability of the large number of slides required for activities far from the laboratory. Cleaning is best done for small batches of slides.




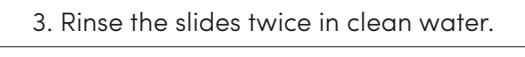




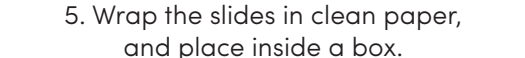
### 3. SUPPLIES, MATERIALS AND EQUIPMENT

- new “superior” quality frosted glass slides;
- two medium-sized plastic bowls or basins;
- a good-quality liquid detergent;
- a washing cloth or soft sponge;
- a supply of clean, lint-free cotton cloths (such as those used to dry crockery and glassware);
- a supply of clean water;
- sheets of clean paper cut to approximately 11 cm x 15 cm;
- empty slide boxes of the type in which new slides are supplied;
- clear adhesive tape;
- rubber bands and
- a cupboard, cabinet or desiccator with activated silica gel (not containing cobalt chloride).

#### 4. SAFETY PRECAUTIONS

Wear gloves to prevent accidental cuts or injury from the glass slides during washing. Any broken slides must be discarded into a purpose-built sharps container.

#### 5. PROCEDURE

FLOW CHART	DESCRIPTION OF ACTIVITY
 <p>1. Soak new slides in liquid detergent for 4–8 h.</p>	<p>1. Separate new slides one from the other and soak them in liquid detergent for 4–8 hours or overnight if convenient. <i>If possible, boil the slides for 30 minutes before soaking them in liquid detergent.</i></p>
 <p>2. Clean slides with cloth or sponge.</p>	<p>2. After soaking, clean each slide on both sides by rubbing the two surfaces in the washing cloth or sponge between your forefinger and thumb.</p>
 <p>3. Rinse the slides twice in clean water.</p>	<p>3. When the slides are clean, rinse them twice in clean water to remove all traces of liquid detergent.</p>
 <p>4. Dry the slides thoroughly.</p>	<p>4. Dry each slide with a cotton cloth. Chipped or scratched slides are unsuitable for malaria microscopy and should be discarded; they may be used for other purposes in the laboratory, for example, for Gram staining.</p>
 <p>5. Wrap the slides in clean paper, and place inside a box.</p>	<p>5. Wrap the dried slides in packs of 10 in pieces of clean paper. Turn the ends of the wrappers down, secure them with clear adhesive tape, and place the packs in empty slide boxes, ready for use. Secure the boxes with a rubber band.</p>
 <p>6. For long storage, place silica gel inside the box.</p>	<p>6. If the slides are not to be used immediately, put some silica gel inside the box.</p>
 <p>7. Label box as clean and document the procedure in the quality control log-book.</p>	<p>7. For quality control (QC), use a marker pen to label the boxes with the date, box number (out of the total), number of slides per box and the name or initials of the person(s) who cleaned the slides, as in the example below, and document in the QC logbook (if there is one). Example:</p>
 <p>8. Store boxes in cabinet or desiccator.</p>	<p>8. Store the clean, boxed slides in either a small, cupboard or cabinet or a desiccator (especially in humid environments), if available, to ensure that they remain dry until required. Slides stored at room temperature at high humidity will stick together after a few weeks and cannot be used unless they are rewashed and dried.</p>
 <p>8. Store boxes in cabinet or desiccator.</p>	<p>CLEAN 17 Aug 2015 1 of 5 - #50 First name Last name (or initials)</p>

## 6. PROCEDURE NOTES

- Do not re-use or recycle glass slides.
- Discard chipped or scratched slides.
- When using cleaned slides, use those that were cleaned the earliest and not those that were cleaned most recently.

## 7. REMINDERS

In warm, damp climates, fungus grows quickly on glass slides, microscope lenses and prisms. Unless fungal growth is prevented by storage in a dry environment, it is difficult or even impossible to interpret blood films accurately.

## 8. QUALITY CONTROL AND DOCUMENTATION

In the QC log-book, record information as follows:

Date of washing	Number of boxes	Number of slides per box	Name and signature of staff who cleaned the slides
dd/mmm/yyyy	5	50	First name, last name Signature

## 9. REFERENCE

Basic malaria microscopy. Part I. Learner's guide. Second edition. Geneva: WHO; 2010.

## 10. DOCUMENT HISTORY

Date (mmm/yyyy)	Version	Comments	Responsible person (First name, last name)
Jan 2016	1	Reviewed and finalized by experts, edited and formatted	Glenda Gonzales, Technical Officer, WPRO