GENERAL LABORATORY COMPONENTS REQUIRED IN HISTOPATHOLOGY

1. *Introduction*

Histopathology is the diagnosis and study of diseases of the tissues and involves examining tissues and/or cells under a microscope. Histopathologists are responsible for making tissue diagnoses and helping clinicians manage a patient's care.

2. *Items Used in Histology*

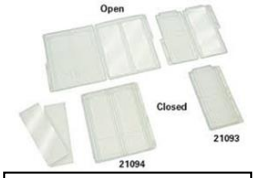
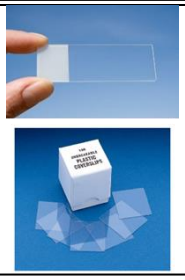
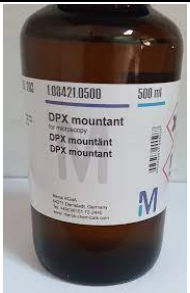
 Plastic (or) Camel hairbrush	 Coplin jar with lid	 Grease pencil	 Diamond pencil
 Timer	 Microtone knife with horning back (with or without handle)	 Plastic embedding ring with paraffin wax	 Stainless steel base mold (various sizes)
 Plastic tissue cassette	 Tissue block holder	 Single (or) Double slide mailor	 Microtome knife disposable blade
 Staining trough with lid	 Reagent bottle with glass lid or stopper	 Microtome	 Water bath
 H & E staining Reagent	 Clean glass slide and Cover slip	 DPX mounting media	 Microscope

Table 1 *Figures showing the items used in Histology*

3. Common Fixatives used in Histology

The aim of fixation is to preserve cells or tissues in as near a life-like condition as possible, prevent autolysis and putrefaction, and protect the tissue from damage during subsequent processing. The most common used of fixatives are

1) 10% Formal saline
2) 10% Neutral buffered formalin

a. Preparation of **10% Formal saline**

Recommended for: Period of fixation: 24 hours or > depending on the tissue size. Indefinite period of fixation for large specimens with changing solutions every 3 months.

Formaldehyde, 40%	100 ml
Sodium chloride	8.5 g
Distilled water	900 ml
Formalin	10 parts
Formalin	90 arts

Procedure

- 8.5 g of NaCl is added to 500 ml DW in a beaker and stirred with a glass rod until it is completely dissolved. 100ml of formalin is added to NaCl solution.
- Then this mixture is transferred to 1L volumetric flask and made up to 1000 ml with DW.

b. Preparation of 10% Neutral buffered formalin (10% Buffered Formalin)

Recommended for the preservation & storage of surgical, post-mortem and research specimens; the period of fixation is 24 hrs or longer.

Formaldehyde, 40%	100 ml
Sodium dihydrogen phosphate (anhydrous)	3.5g
Disodium hydrogen phosphate (anhydrous)	6.5g
Distilled water	900ml

Procedure

- Commercial formalin is buffered with 3.5g of acid sodium phosphate monohydrate and 6.5g of anhydrous disodium phosphate.
- This buffer formalin is transferred to the 1L volumetric flask and made up to 100ml with DW.

Reference

- https://www.rcpath.org/discover-pathology/news/fact-sheets/histopathology.html
- University of Medical Technology, Department of Medical Technology, Histopathology Practical Manual Handbook
- https://www.radicalindia.com/histopathology-equipments.php
- https://en.wikipedia.org/wiki/Fixation_(histology)