490-1000-00 Mar12

MKL Fixatives

Prefilled specimen containers

Neutral Buffered Formalin 10%

Directions for Use

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INTENDED USE
10% Neutral Buffered Formalin is intended as a general purpose fixative for all tissues to be examined by light microscopy. It is useful for surgical tissues and necropsy specimens.

SUMMARY AND EXPLANATION OF THE TEST
Soon after an organism dies, or a tissue is removed from the body, putrefaction and autolysis begin. Autolysis is retarded by cold, greatly accelerated at temperature of about 30 °C, and almost inhibited by heating to 50 °C. There are very few instances when specimens are examined without fixation or some form of hardening. The aim of fixation is to stop decay, putrefaction and autolysis. Proper tissue fixation is essential for accurate histopathologic evaluation.

PRINCIPLE OF THE PROCEDURE
1. Fixation should begin as soon as possible.

2. Be sure the tissue is placed in the proper fixative. If the tissue cannot be immediately placed into the fixative, keep the tissue moist and cool. Typically the tissue is kept moist with normal saline or isotonic PBS.

3. The ideal ratio of fixative to tissue should be in the range of 20 to 50 parts of fixative to 1 part tissue. The ratio of fixative to tissue should never be less than 10 to 20 parts of fixative to 1 part tissue. Tissue intended for museum preparation should be placed in a ratio of 100 parts fixative to 1 part tissue and the ratio should never be less than 50 parts fixative to 1 part tissue

4. Whole organs should be injected with fixative as well as immersed in fixative. Large organs can be sliced to allow better penetration of the fixative into the tissue.

5. Hollow organs can be injected with fixative or can be packed with absorbent cotton soaked in fixative before immersion. Some organs such as colon may be opened and pinned to a corkboard before immersion into the fixative.

6. The time needed for fixation can range from just a few hours to several weeks. The time needed will vary upon the tissue type and the size or thickness of the specimen.

7. After fixation has been completed, the fixed tissue should be trimmed to no more than 3 to 5 mm in thickness and placed on a tissue processor for paraffin processing. The first alcohol the tissue contacts should be 70%. Placing formalin fixed tissues into high percentage alcohols can result in the precipitation of the phosphate buffered salts used to prepare the 10% NBF.

REAGENTS

Ingredients	*Ratio*
Formaldehyde 37-40%	100 ml/L
Distilled water	900 ml/L
Sodium Phosphate	4.0 g/L
Final pH (at 25°C)	6.5 g/L

Preparation of reagents
Ready to Use.

Shelf life and storage
The expiry date is stated on the outer label. It is recommended that the containers are to be stored at 15-25°C.

PROCEDURE
Materials provided
NBF 10% in specimen collection tubes

Materials required but not provided
• standard histo-laboratory equipment required.

Specimen Collection and Preparation
For a complete discussion on the collection and preparation of samples consult the appropriate references

For more information and contact details visit: www.mkldiagnostics.com

References:
1. Histotechnology: A Self-Instructional Text, 2nd Edition, Freida L Carson, ASCP Press, Chicago 1997.
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4. Humason's Animal Tissue Techniques, 5th Edition, Edited by Janice K. Presnell and Martin R. Schreibman, The John Hopkins University Press, Baltimore 1997.
5. Theory and Practice of Histological Techniques, Edited by John D Bancroft and Marilyn Gamble,Churchill Livingstone, London, 2002.
6. Cellular Pathology Technique, 4th Edition, Edited by C.F.A. Culling, R.T. Allison and W.T. Barr, Butterworths, London, 1985.