

Zinc Formalin Fixative - Technical Memo

SOLUTION:	1 Liter	1 Gallon	20 Liter Cube
Zinc Formalin Fixative	Part 1482A	Part 1482B	Part 1482C

For storage requirements and expiration date refer to individual bottle labels.

APPLICATION:

Newcomer Supply Zinc Formalin Fixative (ZFF) is a ready-to-use unbuffered zinc sulfate solution, recommended as an all-purpose tissue fixative for demonstration of crisp nuclear detail, superior cellular morphology, enhanced hematoxylin and eosin (H&E) staining, special staining and immunohistochemical (IHC) studies. This zinc sulfate fixative presents minimal safety hazards and is non-corrosive.

Zinc Formalin Fixative can also be used as a substitute for Zinc Formalin Sensitizer in the Steiner-Chapman Modified Silver Stain Kit (9172).

METHOD:

Fixation:

Small biopsies: Minimum of 2-6 hours

Larger biopsies: Minimum of 6-8 hours

Solutions: All solutions are manufactured by Newcomer Supply, Inc.

FIXATION PROCEDURE:

- Place fresh tissue in Zinc Formalin Fixative promptly after surgical excision.
 - See Procedure Note #1.
- Hold tissue in Zinc Formalin Fixative until ready to process.
 - See Procedure Note #2.
- Tissue Processor Fixation with Zinc Formalin Fixative:**
 - Refer to manufacturer specifications for restrictions on the use of zinc sulfate fixative stations on tissue processor instrumentation.
 - A 70% or lower alcohol percentage is recommended in the processor's first dehydration station to deter formation of zinc precipitate in tissues and solutions.
- Post-Fixation in Formalin 10%, Phosphate Buffered:**
 - Wash Zinc Formalin Fixative fixed tissue in distilled water for a minimum of 10 minutes to remove residual zinc and deter formation of formalin pigment.
 - Place on tissue processor in Formalin 10%, Phosphate Buffered fixation step.

PROCEDURE NOTES:

- If received in Formalin 10%, Phosphate Buffered, rinse thoroughly in tap water prior to placing in Zinc Formalin Fixative.
- Extended storage of tissue in Zinc Formalin Fixative will not affect antigenicity or excessively harden tissue.
- Zinc Formalin Fixative can be neutralized with sodium carbonate or sodium bicarbonate to precipitate zinc at pH 7.0-8.0.
 - Approximately 100 grams of sodium bicarbonate will neutralize/precipitate zinc from 1 liter of Zinc Formalin Fixative.

REFERENCES:

- Carson, Freida L., and Christa Hladik Cappellano. *Histotechnology: A Self-instructional Text*. 4th ed. Chicago: ASCP Press, 2015. 22-23.
- Dapson, Janet Crookham, and Richard Dapson. *Hazardous Materials in the Histopathology Laboratory: Regulations, Risks, Handling, and Disposal*. 4th ed. Battle Creek, MI: Anatech, 2005. 148, 279.
- L'Hoste, Robert J., and Mary Ann Tourres. "Using Zinc Formalin as a Routine Fixative in the Histology Laboratory." *Laboratory Medicine* 26.3 (1995): 210-214.
- Modifications developed by Newcomer Supply Laboratory.