

## Zinc Formalin Fixative, Unbuffered Zinc Sulfate - Technical Memo

**SOLUTION:**

Zinc Formalin Fixative, Unbuffered Zinc Sulfate

**1 Liter**

Part 1482A

**1 Gallon**

Part 1482B

**20 Liter Cube**

Part 1482C

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

**APPLICATION:**

Newcomer Supply Zinc Formalin Fixative, Unbuffered Zinc Sulfate is a ready-to-use working solution recommended as an all-purpose tissue fixative for demonstration of crisp nuclear detail, enhanced routine and special staining and immunohistochemical (IHC) studies. The use of this zinc sulfate fixative presents minimal safety hazards and is non-corrosive.

**METHOD:****Fixation:**

Small biopsies: Minimum of 2-6 hours

Larger specimens: Minimum of 6-8 hours

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

- Place fresh tissue specimen in Zinc Formalin Fixative, Unbuffered Zinc Sulfate as soon as possible after surgical excision.
  - See Procedure Note #1.
- Hold tissue specimens in Zinc Formalin Fixative, Unbuffered Zinc Sulfate until ready to process.
  - See Procedure Note #2.
- Tissue Processor Fixation with Zinc Formalin Fixative, Unbuffered Zinc Sulfate:**
  - Refer to manufacturer specifications for any recommendations and/or restrictions on the use of zinc sulfate fixative stations on their tissue processor instrumentation.
  - See Procedure Note #3.
- Post-Fixation Formalin 10%, Phosphate Buffered (Part 1090):**
  - Wash Zinc Formalin Fixative, Unbuffered Zinc Sulfate fixed tissue thoroughly 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:**

- A specimen initially received in Formalin 10%, Phosphate Buffered should be thoroughly rinsed in tap water prior to placing tissue in Zinc Formalin Fixative, Unbuffered Zinc Sulfate as a post-fixative. Failure to rinse tissue may compromise fixative properties and/or increase the possibility of zinc precipitate formation in tissue specimens.
- Extended storage of tissue in Zinc Formalin Fixative, Unbuffered Zinc Sulfate will not affect antigenicity.
- If Zinc Formalin Fixative, Unbuffered Zinc Sulfate fixation stations are used on a tissue processor, a 70% or lower alcohol percentage must be used in the processor's first dehydration station. This is essential to deter formation of zinc precipitate in tissue specimens and processor solutions.
- Discard Zinc Formalin Fixative, Unbuffered Zinc Sulfate according to local and state environmental regulations.

- Zinc Formalin Fixative, Unbuffered Zinc Sulfate can be neutralized with magnesium hydroxide/oxide, sodium carbonate or sodium bicarbonate to precipitate zinc at pH 7.0-8.0. Separate solids from liquid and dispose of according to local and state environmental regulations.
  - Approximately 100 grams of sodium bicarbonate will neutralize/precipitate zinc from 1 liter of Zinc Formalin Fixative, Unbuffered Zinc Sulfate.
- Zinc Formalin Fixative, Unbuffered Zinc Sulfate can also be used in the Steiner-Chapman Modified Silver Stain as a substitute for Zinc Formalin Sensitizer.

**REFERENCES:**

- Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 16-17, 21.
- 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.
- Herman, Gilbert, Elizabeth Chlipala, Gail Bochenki, Laurie Sabin, and Edna Elfont. "Zinc Formalin Fixative For Automated Tissue Processing." *The Journal of Histotechnology* 11.2 (1988): 85-89.
- Modifications developed by Newcomer Supply Laboratory.