

AZF (Acetic Zinc Formalin) Fixative - Technical Memo

SOLUTION:

AZF Fixative

1 Liter

Part 1009A

1 Gallon

Part 1009B

20 Liter Cube

Part 1009C

30 ml vial, 15 ml fill (100/cs)

AZF Fixative Vial

Part 10091B

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

APPLICATION:

Newcomer Supply AZF (Acetic Zinc Formalin) Fixative is a ready-to-use fixative recommended for bone marrow clots and cores, lymph nodes, endoscopic biopsies and immunohistochemical (IHC) studies.

METHOD:**Fixation:**

1. Bone Marrow: Bone marrow clot a minimum of 2 hours, for bone marrow biopsy a minimum of 3 hours.
2. Lymph Nodes and Small Biopsies: A minimum of 4 hours.
 - a. *Small nodes (5 mm or less) should be halved. Dissect larges pieces to maximum thickness of 3 mm.*
 - b. *To facilitate cutting, place tissue in AZF Fixative for 1 hour to firm; then trim to 2-3 mm.*

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

FIXATION PROCEDURE:

1. Place fresh tissue specimen in AZF Fixative as soon as possible after surgical excision.
 - a. *See Procedure Note #1.*
2. Hold tissue in AZF Fixative until ready to process or maximum of 72 hours.
 - a. *See Procedure Note #2.*
3. Wash AZF fixed tissue thoroughly in tap water for minimum of 10 minutes to remove residual zinc.
4. Decalcify bone marrow specimen as needed.
 - a. *See Procedure Notes #3 & #4.*
5. Place on tissue processor in Formalin 10%, Phosphate Buffered (Part 1090) fixation step.

PROCEDURE NOTES:

1. If received in Formalin 10%, Phosphate Buffered, rinse tissue thoroughly in tap water prior to placing in AZF Fixative.
2. Extended storage in AZF Fixative is not recommended. After maximum fixation, wash tissue in running tap water a minimum of 10 minutes.
 - a. *Transfer AZF fixed tissue to Formalin 10%, Phosphate Buffered for long-term storage purposes.*
3. Nitric acid solutions are not recommended for decalcification following AZF fixation.
4. Acetic acid in AZF Fixative may pre-start the decalcification process, decreasing overall decalcification time.
5. Zinc chloride is corrosive, do not discard un-neutralized AZF Fixative solutions down the drain.
6. Neutralize AZF Fixative with sodium carbonate or sodium bicarbonate to precipitate zinc at pH 7.0-8.0. Separate solids from liquid; dispose of according to local/state regulations.
 - a. *Approximately 100 grams of sodium bicarbonate will neutralize/precipitate zinc from 1 liter of AZF Fixative.*

REFERENCES:

1. Bonds, Lian A., Pat Barnes, Kathryn Foucar, and Cordelia E. Sever. "Acetic Acid-Zinc-Formalin: A Safe Alternative to B-5 Fixative." *American Journal of Clinical Pathology*, 124 (2005): 205-11.
2. 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.
3. Naresh, K N, I. Lampert, and R. Hasserjian. "Optimal Processing of Bone Marrow Trephine Biopsy: The Hammersmith Protocol." *Journal of Clinical Pathology* 59 (2006): 903-11.
4. Modifications developed by Newcomer Supply Laboratory.