

Zenker Fixative, Modified, Zinc Chloride – Technical Memo

SOLUTION:	1 Liter	1 Gallon
Zenker Fixative, Modified, Zinc Chloride	Part 1461A	Part 1461B

Additionally Needed:	
Acetic Acid, Glacial, ACS	Part 10010

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

APPLICATION:

Newcomer Supply Zenker Fixative, Modified, Zinc Chloride is a safe mercury free alternative to the original Zenker formulation. Zenker Fixative, Modified, Zinc Chloride is a specialty fixative that provides crisp nuclear detail and is frequently used for bone marrow clots and biopsies.

The acidic nature of Zenker Fixative, Modified, Zinc Chloride Working Solution is generally enough to sufficiently decalcify bone marrow cores without additional decalcification steps.

METHOD:

Fixation: Recommended fixation time is a minimum of 2 to 4 hours, depending upon tissue size and type.

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

FIXATION PROCEDURE:

- Zenker Fixative, Modified, Zinc Chloride Working Solution:
 - Zenker Fixative, Modified, Zinc Chloride 38 ml
 - Acetic Acid, Glacial, ACS 2 ml
- Combine and mix solutions directly before use. Fix tissue in this fresh working solution for 2 to 4 hours depending upon tissue size and type.
- Hold tissue specimens in Zenker Fixative, Modified, Zinc Chloride Working Solution until ready to process or a maximum of 24 hours.
 - See Procedure Note #1.
- Wash fixed tissue in running tap water for minimum of 10 minutes to remove residual zinc chloride.
- Place on tissue processor in Formalin 10%, Phosphate Buffered (Part 1090) fixation step.
- Post-fixation applications of Zenker Fixative, Modified, Zinc Chloride include the use of the working fixative as a mordant in phosphotungstic acid hematoxylin (PTAH) staining procedures. Refer to PTAH stain protocol for additional information.

PROCEDURE NOTES:

- After maximum fixation time of 24 hours, rinse tissue in running tap water for a minimum of 10 minutes; transfer Zenker fixed wet tissue to 70% Ethyl Alcohol (Part 10844) or Formalin 10%, Phosphate Buffered for long-term storage.
- Zenker Fixative, Modified, Zinc Chloride is not recommended for preservation of red blood cells.
- Due to its corrosive nature, do not discard Zenker Fixative, Modified, Zinc Chloride solutions down the drain.
- Neutralize Zenker Fixative, Modified, Zinc Chloride 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 Zenker Fixative, Modified, Zinc Chloride.

REFERENCES:

- Carson, Freida L., and Christa Hladik. *Histotechnology: A Self-Instructional Text*. 3rd ed. Chicago, Ill.: American Society of Clinical Pathologists, 2009. 16-17, 20-21, 207-208.
- 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.
- Sheehan, Dezna C., and Barbara B. Hrapchak. *Theory and Practice of Histotechnology*. 2nd ed. St. Louis: Mosby, 1980. 49.
- Modifications developed by Newcomer Supply Laboratory.