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Part 1015 Revised December 2022

# **B-5 Fixative Modified, Zinc Chloride - Technical Memo**

**SOLUTION:** 1 Liter 6 X 1 Liter 1 Gallon B-5 Fixative Modified, Zinc Chloride Part 1015A Part 1015A Part 1015C

Additionally Needed:

Formaldehyde 37-40%, ACS Part 1089

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

#### **APPLICATION:**

Newcomer Supply B-5 Fixative Modified, Zinc Chloride is a safe mercury free alternative to the classic B-5 fixative. It is the fixative of choice for bone marrow, lymph nodes, spleen and other hematopoietic tissues, and provides clear nuclear detail while preserving immunohistochemical (IHC) staining.

#### METHOD:

#### **Fixation Recommendations:**

- Bone Marrow Clot: Minimum of 2 hours.
- Bone Marrow Biopsy: Minimum of 3 hours.
- Lymph Nodes and Small Biopsies: Minimum of 4 hours.
- Small nodes (5 mm or less) should be halved.
- Larger nodes, dissected so no piece is thicker than 3 mm.

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

## **FIXATION PROCEDURE**:

- B-5 Fixative Modified, Zinc Chloride Working Solution:
  - B-5 Fixative Modified, Zinc Chloride 50 ml
- Formaldehyde 37-40%, ACS
- 5 ml
- Combine solutions directly before use. Fix tissue in fresh 10:1 working solution a minimum of 2 to 4 hours.
- Hold tissue specimens in B-5 Fixative Modified, Zinc Chloride Working Solution until ready to process or a maximum of 72 hours. a. See Procedure Note #1.
- Wash fixed tissue in running tap water to remove residual zinc
- Place on tissue processor in Formalin 10%, Phosphate Buffered (Part 1090) fixation step.

#### **PROCEDURE NOTES:**

- After maximum fixation of 72 hours, transfer B-5 fixed wet tissue to 70% Ethyl Alcohol (Part 10844) for long-term storage.
- Nitric acid is not recommended as a decalcification agent following fixation in B-5 Fixative Modified, Zinc Chloride.
- Neutralize B-5 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 B-5 Fixative Modified, Zinc Chloride.

### **REFERENCES:**

- Bancroft, John D., and Marilyn Gamble. Theory and Practice of Histological Techniques. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 69.
- Carson. Freida and Christa Hladik Cappellano. Histotechnology: A Self-Instructional Text. 4th ed. Chicago: ASCP Press, 2015. 19-20.
- Dapson, Janet Crookham, and Richard Dapson. Hazardous Materials in the Histopathology Laboratory: Regulations, Risks, Handling, and Disposal. 4th ed. Battle Creek, MI: Anatech, 2005. 148-149, 279,
- Modifications developed by Newcomer Supply Laboratory.

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