

## Davidson Fixative – Technical Memo

**SOLUTION:** 1 Gallon  
Davidson Fixative Part 1045A

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

### APPLICATION:

Newcomer Supply Davidson Fixative, is an alcohol-formalin-acetic acid based fixative with human, veterinary and research applications. This ready-to-use fixative (also known as Hartmann's Solution) is recommended for a variety of specimens, including eyes and testes, it penetrates structures quickly while preserving morphological detail and immunohistochemical staining.

Tissues placed in Davidson Fixative turn white/opaque, assisting to enhance the visibility and yield of lymph nodes in fatty breast, colon and radical dissection specimens. Overnight fixation is recommended for large and/or fatty specimens and lymph node detection.

Davidson Fixative can also provide a safe alternative to the use of Bouin Fluid in the laboratory. The benefits of Davidson's include:

- Comparable fixative properties to Bouin Fluid
- No picric acid concerns
- Safer for laboratory personnel to handle
- Simpler disposal methods
- Does not require lengthy post-fixation rinsing

### METHOD:

#### **Fixation:**

- Small Biopsies: Up to 24 hours is recommended.
- Mice Eyes: Up to 12 hours is recommended.
- Rat and Rabbit Eyes: Up to 24 hours is recommended.
- Large Eyes (human or animal): 48-72 hours is recommended.
- Mollusks: 24-48 hours is recommended.
- Lymph Nodes: Up to 24 hours is recommended. Small nodes (5 mm or less) should be halved. If larger, cut in such a way that no piece is thicker than 2-3 mm.

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

### FIXATION PROCEDURE:

1. Place fresh tissue specimen in Davidson Fixative as soon as possible after surgical excision.
  - a. See Procedure Note #1.
2. Hold tissue specimens in Davidson Fixative until ready to process or a maximum of 72 hours.
  - a. See Procedure Note #2.
3. Rinse Davidson fixed tissue in distilled water; 1-2 minutes.
4. Hold tissue in either Formalin 10%, Phosphate Buffered (Part 1090) or in 70% Ethyl Alcohol (Part 10844) prior to processing.

### PROCEDURE NOTES:

1. A specimen initially received in Formalin 10%, Phosphate Buffered should be thoroughly rinsed in tap water prior to placing tissue in Davidson Fixative.
2. Extended storage of tissue in Davidson Fixative is not recommended. After recommended fixation time transfer Davidson fixed wet tissue to 70% ethyl alcohol or Formalin 10%, Phosphate Buffered for long-term storage purposes.
3. Dispose of Davidson Fixative as an acid waste and/or according to local and state environmental regulations.

### REFERENCES:

1. Eltoun, Isam, Jerry Fredenburgh, Russell Myers and William Grizzle. "Introduction to the Theory and Practice of Fixation of Tissues." *The Journal of Histotechnology* 24.3 (2001): 173-190.
2. Howard, Dorothy, Earl Lewis, Jane Keller and Cecilia Smith. *Histological Techniques for Marine Bivalve Mollusks and Crustaceans*. 2nd ed. Oxford, MD: NOAA, National Ocean Service, 2004. 60.
3. Kiernan, J. A. *Histological and Histochemical Methods: Theory and Practice*. 3rd ed. London, Ontario: Arnold, 2003. 28-29.
4. Latendresse, John R., Alan R. Warbritton, Henning Jonassen, and Dianne M. Creasy. "Fixation of Testes and Eyes Using a Modified Davidson's Fluid: Comparison with Bouin's Fluid and Conventional Davidson's Fluid." *Toxicologic Pathology* (2002): 524-33.
5. Modifications developed by Newcomer Supply Laboratory.