

Form-Zero™ Formalin Neutralizer – Technical Memo

SOLUTION:

Form-Zero™ Formalin Neutralizer

500 cc Bottle (12/cs)

Part ABFZ550-12

500 cc Bottle (32/cs)

Part ABFZ550-32

Additionally Needed:

Form-Zero™ Waste Collection Container, 1 Gallon	Part ABFZ-1
Form-Zero™ Waste Collection Container, 2.5 Gallon	Part ABFZ-25
Funnel with Tissue Screen	Part ABFX-FUN
Form-Zero™ Test Strips (100 strips/tube)	Part ABFZ-TEST

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

APPLICATION:

Newcomer Supply Form-Zero™ Formalin Neutralizer is a unique powdered reagent blend of various sulfur-containing inorganic salts. Form-Zero™ readily dissolves in aqueous solutions and subsequently functions as a chemical reducing agent to quickly neutralize formalin and glutaraldehyde for sink disposal. One 500 cc bottle of Form-Zero™ will neutralize one gallon/four liters of 10% formalin or one gallon/four liters of 4% glutaraldehyde. Benefits include:

- No pH adjustment of solutions is required.
- One gallon/four liters of formalin or glutaraldehyde can be neutralized in 20-25 minutes to non-hazardous disposable solutions.
- Neutralized aldehyde products can be safely discharged to sewer and waste water treatment systems.
- No drain clogging polymers are created.

NEUTRALIZING PROCEDURE:

1. Collect acceptable concentrations of aldehyde waste in designated and well labeled Form-Zero™ Waste Collection Container, 1 Gallon or 2.5 Gallon (ABFZ-1 or ABFZ-25).
 - a. See Procedure Notes #1 and #2.
 - b. The use of Funnel with Tissue Screen (ABFX-FUN) is recommended to avoid any extraneous tissue debris from accumulating in aldehyde waste solutions.
2. Add the entire contents of one 500 cc Form-Zero™ bottle to each gallon (128 fluid ounces) or each four liters of aldehyde (formalin or glutaraldehyde) waste.
 - a. Neutralization applications are for one Form-Zero™ bottle for each gallon/4 liters of aldehyde waste. Partial bottles of Form-Zero™ cannot be used for smaller treatments.
3. Securely tighten lid on the collection container; agitate container to thoroughly mix powder and solution.
 - a. Do not add any additional waste solution once Form-Zero™ powder has been added and mixed in collection container.
4. Continue agitation until Form-Zero™ powdered reagent blend completely dissolves.
5. Allow the mixed solution to stand for 20-25 minutes for the neutralization reaction to be fully complete.
 - a. See Procedure Note #3.
6. Test treated solution with Form-Zero™ Test Strips (ABFZ-TEST) to confirm completion of neutralization reaction.
 - a. See Procedure Note #4.
7. Pour neutralized non-hazardous aldehyde waste product into sanitary sewer and flush with cold running tap water.
8. Rinse collection container and clean with cold tap water before reuse.

PROCEDURE NOTES:

1. 10% formalin (4% formaldehyde) and 4% glutaraldehyde are the highest concentrations that can be neutralized.
2. Maintain separate, well labeled collection containers for waste formalin and waste glutaraldehyde solutions for best neutralization results.
3. There is no additional benefit and/or adverse effect if neutralization reaction proceeds for longer than 25 minutes.
4. To use Form-Zero™ Test Strips:
 - a. Remove only the test strips needed, taking care not to touch the test field.
 - b. Close container immediately after removing test strips to avoid any contamination.
 - c. Dip test strip into neutralized sample for 1 second and shake off excess liquid; wait 20 seconds.
 - d. Compare test field with color scale on test strip container.
 - e. Test field will turn salmon-pink when formaldehyde is completely neutralized.
 - f. Salmon-pink reaction indicates presence of sulfite ions, which confirms absence of formaldehyde.
5. Confirm disposal methods with local and state environmental regulations. Refer to SDS for personal protective measures and handling information.

REFERENCES:

1. Bancroft, John D., and Marilyn Gamble. *Theory and Practice of Histological Techniques*. 6th ed. Oxford: Churchill Livingstone Elsevier, 2008. 22-23, 27.
2. Dapson, Janet Crookham, and Richard W. Dapson. *Hazardous Materials in the Histopathology Laboratory: Regulations, Risks, Handling and Disposal*. 4th ed. Battle Creek, MI: Anatech, 2005. 181-186.
3. Form-Zero™ Aquatic Bio-Assay Results and Summary: <http://www.newcomersupply.com/documents/product-flyers/Form-Zero%20Aquatic%20Bio-Assay%20Results%20and%20Summary.pdf>
4. Modifications developed by Newcomer Supply Laboratory.