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Part ABFZ550
February 2016

Form-Zero™ Formalin Neutralizer – Technical Memo

SOLUTION:	**500 cc Bottle (12/cs)**	**500 cc Bottle (32/cs)**
Form-Zero™ Formalin Neutralizer	Part ABFZ550-12	Part ABFZ550-32

Additionally Needed:

Aldehyde Waste Collection Container	Part ABFRC-250E
Tissue Funnel with Screen	Part ABFX-FUN

For storage requirements and expiration date refer to individual bottle 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 collection containers (ABFRC-250E).
    a. *See Procedure Notes #1 and #2.*
2. The use of a funnel with screen insert (ABFX-FUN) is recommended to avoid any extraneous tissue debris from accumulating in aldehyde waste solutions.
3. 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.*
4. 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.*
5. Continue agitation until Form-Zero™ powdered reagent blend completely dissolves.
6. Allow the mixed solution to stand for 20-25 minutes for the neutralization reaction to be fully complete.
    a. *See Procedure Notes #3 and #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 reusing.

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 test post-treated solutions for any residual aldehydes refer to MQuant Formaldehyde Test (110036) available through EMD Millipore. http://www.emdmillipore.com/US/en
    a. *Rinse test vessel several times with pretreated sample.*
    b. *Fill test vessel to the 5 ml mark with pretreated sample.*
    c. ***Add 20 drops** of test reagent to the test vessel; swirl to mix. (20 drops is a necessary increase from the suggested 10 drops in the product instructions).*
    d. *Immerse test strip reaction zone in sample for 1 second.*
    e. *Allow excess sample liquid to run off long edge of strip.*
    f. *After exactly 60-seconds, compare color of test strip reaction zone to the color chart.*
    g. *Record results on waste treatment log sheet.*
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.
