

## Formalex® “GREEN” Formalin Neutralizer – Technical Memo

<b>SOLUTION:</b>	<b>1 Gallon Cube</b>	<b>2.5 Gallon Cube</b>	<b>5 Gallon Cube</b>	<b>30 Gallon Drum</b>	<b>55 Gallon Drum</b>
Formalex® “GREEN” Formalin Neutralizer	Part ABFX-01	Part ABFX-250	Part ABFX-05	Part ABFX-30	Part ABFX-55

### Additionally Needed:

Formalex® Green Waste Collection Container, 1 Gallon	Part ABFXG-1
Formalex® Green Waste Collection Container, 2.5 Gallon	Part ABFXG-25
Funnel with Tissue Screen	Part ABFX-FUN
Formalex® Green Graduated Dispenser, 32 Ounce	Part ABFXG-GD
Formalex® Green pH Test Strips (100 strips/pack)	Part ABFXG-PH
Formalex® Green Empty Spray Bottle	Part ABFX-32E

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

### APPLICATION:

Newcomer Supply Formalex® “GREEN” Formalin Neutralizer is a multi-component, aqueous formulation which utilizes an organo-nitrogen based chemistry to effectively neutralize formalin waste products for sink disposal. 32 ounces of Formalex® “GREEN” will neutralize one gallon of 10% formalin or one gallon of 4% glutaraldehyde. Benefits include:

- No pH adjustment of solutions is required.
- Does not contain phosphates.
- Non-vapor forming.
- Formalin or glutaraldehyde can be neutralized in 4 hours to non-hazardous disposable solutions.
- Neutralized aldehyde products can be safely discharged to sewer and waste water treatment systems.
- No sludgy residue.

Formalex® “GREEN” recommended accessories to assist and complete the neutralization process.

- 1 Gallon or 2.5 Gallon Waste Collection Container
- Funnel with Tissue Screen
- 32 Ounce Graduated Dispenser
- pH Test Strips

### NEUTRALIZING PROCEDURE:

1. Collect acceptable concentrations of aldehyde waste in designated and well labeled Formalex® Green Waste Collection Container, 1 Gallon or 2.5 Gallon (ABFXG-1, ABFXG-25).
  - a. See Procedure Notes #1 and #2.
  - b. Use of Funnel with Tissue Screen (ABFX-FUN) is recommended to avoid any extraneous tissue debris from accumulating in aldehyde waste solutions.
2. Add 32 fluid ounces of Formalex® “GREEN” to each gallon (128 fluid ounces) of aldehyde waste. Or add 1 liter of Formalex® “GREEN” to 4 liters of aldehyde waste.
  - a. Use Formalex® Green 32 Ounce Graduated Dispenser (ABFXG-GD) for convenient measuring.
  - b. Refer to Page 2 for treatment calculation tables.
3. Securely tighten lid on collection container; agitate container to thoroughly mix solutions.
  - a. Do not add any additional solutions to collection container once neutralization process has started.
4. Allow mixed solution to stand for a minimum of 4 hours.
  - a. See Procedure Note #3.
5. Prior to re-opening, re-agitate container to thoroughly re-mix solution to decrease exposure to any potential headspace vapor.
6. Test treated solution with Formalex® Green pH Test Strips (ABFXG-PH) to determine completion of neutralization reaction.
  - a. Reaction is complete with a pH reading at or above 5.5.

7. Pour neutralized non-hazardous aldehyde waste product into sanitary sewer.
8. Rinse collection container and clean with cold tap water before reuse.
9. Use Formalex® Green Spray Bottle (ABFX-32E) to neutralize small formalin spills and accompanying formalin odors.

### PROCEDURE NOTES:

1. 10% formalin (4% formaldehyde) and 4% glutaraldehyde are the highest concentrations that can be neutralized.
  - a. Formalex® “GREEN” should never be used to directly treat concentrated 37% formaldehyde for sanitary sewer disposal.
2. Maintain separate, well labeled collection containers for waste formalin and waste glutaraldehyde solutions for best neutralization results.
3. To attain the lowest formalin residual, allow treated solutions to stand overnight or approximately 8-12 hours.
4. 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*. 4<sup>th</sup> ed. Battle Creek, MI: Anatech, 2005. 181-186.
3. Modifications developed by Newcomer Supply Laboratory.

## Calculating how much Formalex® “GREEN” that you need:

ENGLISH MEASUREMENTS FOR TREATMENT			METRIC MEASUREMENTS FOR TREATMENT		
Amount of Formalin Waste to Neutralize		Amount of Formalex Green Needed for Formalin Treatment	Amount of Formalin Waste to Neutralize		Amount of Formalex Green Needed for Formalin Treatment
Gallons	Ounces	(In OUNCES)	Milliliters	Liters	(In MILLILITERS)
0.25	32	8	500	0.5	125
0.50	64	16	1,000	1.0	250
0.75	96	24	1,500	1.5	375
1.00	128	32	2,000	2.0	500
1.25	160	40	2,500	2.5	625
1.50	192	48	3,000	3.0	750
1.75	224	56	3,500	3.5	875
2.00	256	64	4,000	4.0	1000
2.25	288	72	4,500	4.5	1125
2.50	320	80	5,000	5.0	1250
2.75	352	88	5,500	5.5	1375
3.00	384	96	6,000	6.0	1500
3.25	416	104	6,500	6.5	1625
3.50	448	112	7,000	7.0	1750
3.75	480	120	7,500	7.5	1875
4.00	512	128	8,000	8.0	2000
4.25	544	136	8,500	8.5	2125
4.50	576	144	9,000	9.0	2250
4.75	608	152	9,500	9.5	2375
5.00	640	160	10,000	10.0	2500

		Number of OUNCES in a Cube of Formalex Green	Number of MILLILITERS in a Cube of Formalex Green
1	Gal. Cube	128	3,785
2.5	Gal. Cube	320	9,463
5	Gal. Cube	640	18,925
30	Gal. Drum	3840	113,550
55	Gal. Drum	7040	208,175