

Neutralizing Solution Comparison

Neutralizing Solution	Compendial Neutralizing Media				
	3M™ Wide Spectrum Neutralizer ^{1,2}	Lethen Broth ^{1,3,4,5,6,7,8}	Neutralizing Buffer ^{1,3,7,8,9}	Dey-Engley (D/E) Neutralizing Broth ^{1,2,7,8,11,12}	Buffered Peptone Water (BPW) ^{1,2,7,8}
Effective neutralization of quaternary ammonium (quats) compounds	✓	✓	✓	✓	✗
Effective neutralization of high acid cleaners	✓	✓	✗	✓	✗
Effective neutralization of chlorine-based sanitizers	✓	✓	✓	✓	✗
Effective neutralization of hydrogen peroxide and peroxyacetic acid-based sanitizers	✓	✗	✗	✓	✗
Free from known allergenic components*	✓	?	✓	?	?
Free from known PCR-inhibitors	✓	✓	✗	✓	✓
Free from animal derived materials (ADM)	✓	✗	✓	✗	✗
Free from Genetically Modified Organism (GMO)-based components*	✓	✓	?	?	?
Maximum sample hold time before processing (at 2-8°C)	up to 96 hours	up to 48 hours	up to 48 hours	up to 48 hours	up to 48 hours
Room temperature storage (15-25°C)	up to 3 months	12 months	12 months	✗	12 months
Designed for compatibility with 3M™ Petrifilm™ Plates	✓	✓	✗	✗	✓
Designed for compatibility with 3M™ Molecular Detection System	✓	✓	✓ <i>dilution necessary</i>	✓	✓
AOAC® Performance Tested Methods SM Program certified	✓ Certificate #022104	✗	✗	✗	✗

Description	Catalog #	Quantity
3M™ Environmental Scrub Sampler Stick with 10mL Wide Spectrum Neutralizer	ESS10WSN	100/case
3M™ Environmental Scrub Sampler with 10mL Wide Spectrum Neutralizer and Gloves	HES10WSN2G	100/case



¹ Internal 3M data.

² *Performance Tested Methods*SM. Program certificate number 022104. AOAC Research Institute.

³ Laboratory procedures for the microbiological analysis of foods. Vol 3. The compendium of analytical methods. MFLP-41: Environmental sampling for the detection of microorganisms. 2010. Available at: <https://www.canada.ca/en/health-canada/services/food-nutrition/research-programs-analytical-methods/analytical-methods/compendium-methods/laboratory-procedures-microbiological-analysis-foods-compendium-analytical-methods.html>.

⁴ Lethen broth: A neutralizing solution for iodine, chlorine, quaternary ammonium and acid sanitizers. 3M Food Safety. 1985.

⁵ Sample handling sponges – new sponge qualification performance summary. TB.119.00. 3M Food Safety. 2012.

⁶ Environmental monitoring procedures. 3M Food Safety. 2018. Available at:

<https://multimedia.3m.com/mws/media/2411110/environmental-monitoring-procedures-article.pdf>

⁷ Ellerbroek, L., Johne, R., Schrader, C., and Schielke, A. (2012). PCR inhibitors – occurrence, properties, and removal. *Journal for Applied Microbiology*. 1365-2672.05384.x.

⁸ Jersek, B., Klančnik, A., Kovac, M., Piskernik, S., and Toplak, N. (2012). PCR in food analysis, polymerase chain reaction, Patricia Hernandez-Rodriguez and Arlen Patricia Ramirez Gomez. IntechOpen, DOI: 10.5772/38551. Available at: <http://www.intechopen.com/books/polymerase-chain-reaction/pcr-in-food-analysis>

⁹ 3M Molecular Detection Assay 2 - *Salmonella*, *Listeria*, *Listeria monocytogenes*, *E. coli* O157 (including H7), *Cronobacter*, *Campylobacter*, STEC Gene Screen (*stx*), STEC Gene Screen (*stx* and *eae*). Product instructions. 3M Food Safety.

¹⁰ Ignatovich, I., Leishman, O., Podtburg, T., Steinagel, S. (2017). Comparison of neutralizing buffered peptone water and Dey/Engley Broth in the recovery of *Salmonella enterica* from broiler carcass rinsates. *J Food Protection*. 80 (Supplement A): 163.

¹¹ Chen, J., Park, Y.J. (2011). Mitigating the antimicrobial activities of selected organic acids and commercial sanitizers with various neutralizing agents. *Journal of Food Protection*. 74: 820-825. Available at: <https://doi.org/10.4315/0362-028X.JFP-10-447>.

*Dependent upon raw material inputs; verify with manufacturer.



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