



Dean L. Olson, Ph.D., Director
Applications, Installations, and Customer Support
Protasis/MRM Corporation
101 W. Tomaras Avenue, Savoy, IL 61874 USA
(217) 351-4359 (phone); (217) 352-6655 (fax)
E-mail: dolson@microNMR.com
Tech Support: www.microNMR.com

OMNMR Alkaline and Acid Cleaning Solutions for D₂O **25 April 2008; DLO at Protasis/MRM**

The Cleaning Solution is compatible with all wetted parts in One-Minute NMR. We presently think that using both solutions successively, first the Alkaline, then the Acidic, will maintain the cleanliness of the fused silica flow cell for long periods of time.

Alkaline Cleaning Solution for D₂O Users **(Suitable for Automation)**

- 6 g KOH
- 25 mL Water
- 75 mL Ethanol

Dissolve KOH pellets in the water, which will evolve heat. Then, add the mixture to the ethanol. Protonated solvents may be used, since the Cleaning Solution needs to be thoroughly rinsed from the CapNMR probe anyway. Net result is about 1 M KOH. Store in a glass container.

Acidic Cleaning Solution for a D₂O Flow Path **(Suitable for Automation)**

- 25 mL DMSO
- 25 mL Acetonitrile
- 50 mL Formic Acid (reagent grade is 95% formic acid)

First, mix the DMSO and the acetonitrile. Then, pour the formic acid into the mixture. Protonated solvents may be used, since the Cleaning Solution needs to be thoroughly rinsed from the CapNMR probe anyway. Store in a glass container.

Enzyme Detergent Cleaning Solution

This cleaning solution is particularly helpful for biological sample use

- ZymitPro Enzyme Cleaning Solution
- Dilute 1:50 with H₂O

Zymit products comes in two versions

- Zymit is described as “A liquid dual-enzyme and detergent formula for removal of protein- and starch-based soils.” It is a low-foam formula, which is not really needed for One-Minute NMR use.
- ZymitPro is described as “A unique blend of protease enzymes, detergents, and builders that work together to achieve broad cleaning powers.” Immersion cleaning is listed as one cleaning method appropriate for this product.
 - This product seems most appropriate for use in One-Minute NMR automation applications.
- Details appear at www.zymit.com; click on the Cleaners Category, and select Zymit