

**GFAAS Sample Preparation**  
**CHEM 322**  
**Fall 2014**

**Protocol:**

All glass and plastic-ware used for solution preparation was cleaned by washing with dilute nitric acid. Solutions were prepared by digesting an accurately weighed sample of either NIST Bovine muscle (RM # 8414) or NIST Bovine Liver (RM # 1577b). Briefly, the digestion procedure involved addition of a 7 mL of trace metal grade concentrated nitric acid and 2 mL of 18 MΩ water to the pre-weighed samples in a Teflon microwave vessel. The vessels were inserted into the CEM MARS and run through a heating cycle to promote decomposition (50% power, 10 min ramp to 150° C, hold at 150° C for 10 min). Two reagent blanks were also prepared following this protocol. After cooling, the samples were quantitatively transferred to clean, pre-weighed plastic bottles.

**Sample Information:**

<b>ID</b>	<b>Mass of Sample (g)</b>	<b>Mass of Empty Bottle (g)</b>	<b>Mass of Bottle + Solution (g)</b>
Muscle Sample 1 (M1)	0.6250	12.3306	48.4500
Muscle Sample 2 (M2)	0.6254	12.4085	45.3212
Liver Sample 1 (L1)	1.4535	12.5289	42.6230
Liver Sample 2 (L2)	1.3650	12.3254	47.4095
Blank 1 (B1)	---	12.1710	47.4079
Blank 2 (B2)	---	12.0601	52.7653

**Characteristics of Bovine Standards:**

The Certificate of Analysis for the Bovine Muscle and Bovine Liver Standard Reference Materials can be found online at the NIST archive (National Institute of Standards and Technology) (<https://www-s.nist.gov/srmors/certArchive.cfm>). Enter the RM# in the search field and click "Go". Clicking on the resulting hyperlink will bring up the "Certificate of Analysis" or "Report of Investigation" for the material.