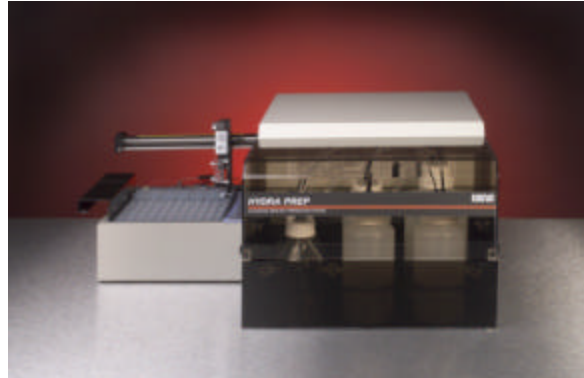


# Hydra Prep

## Automated Mercury Preparation System

### Questions and Answers



1. ***Why do mercury samples need to be prepared?***  
Mercury can be found in a variety of mercurial compounds, both organic and inorganic. In order to analyze mercury with the sensitive cold vapor atomic absorption (CVAA) or cold vapor atomic fluorescence (CVAFS) techniques, samples must be digested to elemental mercury.
2. ***What is the most common digestion procedure?***  
The most common chemical digestion procedure uses potassium permanganate to oxidize mercury compounds. The addition of potassium peroxodisulfate to the digestion is required to assure that 100% of the organic mercurial compounds are oxidized to mercuric ions.
3. ***What are the advantages of automated sample preparation?***  
Automated sample preparation not only improves laboratory productivity, but also provides a better day-to-day, operator-to-operator repeatability, resulting in improved analytical precision.
4. ***Does Hydra Prep save on the use of reagents?***  
Yes. As sample volumes are small (6 ml for aqueous samples and 0.1 gram for soils), reagent volumes are approximately 1/3 compared to conventional preparation methods. An added advantage is that the quantity of hazardous waste generated is reduced by up to 75%.
5. ***What is the sample digestion capacity?***  
Up to 88 aqueous samples or 28 soil samples can be digested in an unattended operation cycle.

6. **Does Hydra Prep include pre-programmed digestion protocols?**  
 Yes. Hydra Prep comes with pre-programmed protocols for water, soils, blood, fish and tissue.
7. **Is Hydra Prep compliant with international standards?**  
 Yes. Hydra Prep complies with U.S. EPA Methods 7470A and 245.1 for aqueous samples; 7471A for soil; 245.6 for fish and tissue as well as with other national standards, such as DIN-E121, DIN-E123 or equivalent.

8. **Can you show a Hydra Prep reagent addition schematic?** Yes. See Figure 1.

9. **Can Hydra Prep accommodate the bromide/bromide application?**  
 Yes. The six reagent bays can be easily exchanged to accommodate different applications

10. **Can Hydra Prep handle concentrated acids?**  
 Yes. The six reagent bays are stored in a self-contained corrosion resistant area. The reagent dispenser is rugged and can handle a variety of harsh reagents including concentrated acids and aqua regia.

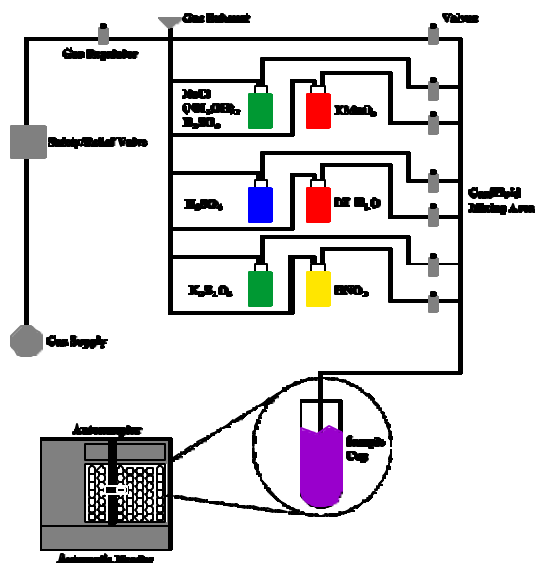


Figure 1. Hydra Preparation Schematic

11. **Can Hydra Prep handle difficult to digest organic samples?**  
 Yes. The unique caps include integral reflux condensers that facilitate this digestion.
12. **Why does Hydra Prep automatically sparge samples?**  
 Automatic sparging eliminates interferences associated with the presence of chlorine.
13. **Is Hydra Prep computer controlled?**  
 Yes. All functions of Hydra Prep, such as pipetting of reagents and timing, are computer controlled, ensuring reproducibility of the digestion procedure.
14. **Does Hydra Prep include an autosampler?**  
 Yes. An autosampler that accommodates either 88, 15 ml samples or 28, 50 ml samples, plus 6 calibration standards and up to 7 check standards, is included.
15. **Is Hydra Prep compatible with the Hydra Series of analyzers?**  
 Yes. Hydra Prep is compatible with Hydra AA Mercury Analyzer.

16. ***Does Hydra Prep require a separate computer system?***

Hydra Prep, if used together with a Hydra AA analyzer, can simultaneously operate from the analyzer computer because of the true time-sharing capabilities of the software.

If Hydra Prep is operated as a stand-alone system, an optional computer is required.



6 Wentworth Drive  
Hudson, NH 03051 USA  
Tel: 603-886-8400 Fax: 603-886-9141  
Website: [www.TeledyneLeemanLabs.com](http://www.TeledyneLeemanLabs.com)