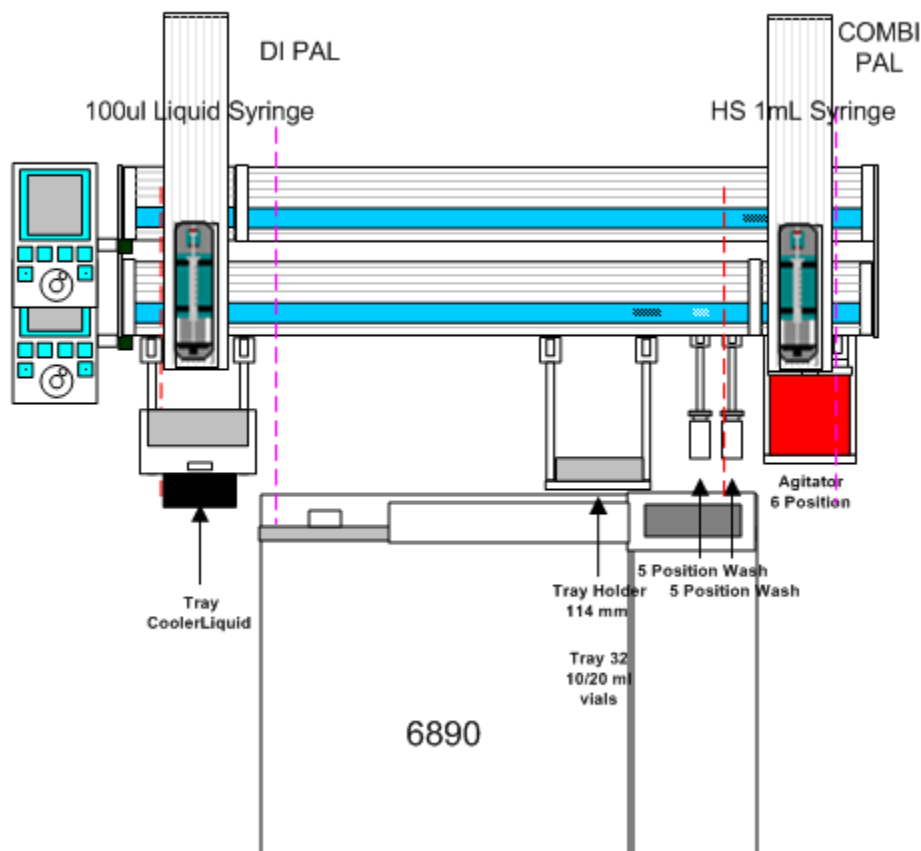


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LEAP Technologies is excited to introduce a system to perform automated static headspace gas chromatography – mass spectrometry (SHS-GC–MS) method for monitoring the formation of ethyl methane sulfonate from ethanol and methane sulfonic acid.

The system is designed to use a 100ul syringe to perform the liquid sample prep and a 1 mL Headspace Syringe to perform the Headspace analysis and the LEAP hardware is shown below. The method steps are outlined after that.



**TWIN PAL from LEAP System consists of:**

- 100 ul syringe adaptor and syringe, 1 mL Head Space heated adaptor and syringe,
- Two (5) position 10 mL reagent holders
- (6) position Agitator for 20 mL vials
- Ambient tray for (32) 20 mL vials
- Cooled tray for (98) 2 mL vials
- Chronos Mastersoftware with methods for sample prep and inject
- Installation & Training

*Please note that the cooled tray uses an external chiller not supplied by LEAP.*

### The available vial trays are:

- **Tray 98 position temperature controlled** for 2mL reaction vials
  - **Tray 32 position ambient tray** for 20mL HS vials
  - **Tray 5 position** for 10mL vials containing IS solution, derivatization reagent solution
  - **Tray 5 position** for 10mL vials containing 2 wash solutions and waste vials
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### The typical sample preparation sequence is as follows:

*With 100ul liquid syringe*

- **Transfer** 20uL reaction mixture from heated tray to 20 mL HS vial
- *Wash syringe*
- **Add** 20uL IS solution from 10 mL reagent vial to 20 mL HS vial
- *Wash syringe*
- **Add** 100uL derivatisation solution from 10 mL reagent vial to 20 mL HS vial
- *Wash syringe*

*With 1000ul headspace syringe*

- **Move** 20 mL vial to heated agitator
- *Heat 105 deg C and agitate at 600rpm for 15 minutes*
- **Inject** 1mL of HS into GC
- Move 20 mL vial back to ambient tray

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### Info on Chronos software from LEAP Technologies

Chronos Mastersoftware is an ideal solution for automating complex GC Sample Preparation steps on the CTC PAL. Software Integration with data systems ChemStation™ or Xcalibur™ assures seamless functionality with existing systems. Chronos not only exchanges information with other systems, but also controls the complete process and optimizes intelligent time-management resulting in significant improvement in system throughput. Single Sample List Control – including the flexible Twin PAL

