

## In-Vial Sparging Configuration for the Tekran 2600 Total Hg Analysis System

Rev. 021916

### TEKRAM 2600 IN-VIAL SPARGE

<b>Method 1631</b>	<b>(Dual Gold Trap CVAFS)</b>
<b>Method 245.7</b>	<b>(Direct CVAFS detection)</b>
<b>US EPA IO-5</b>	<b>(Ambient Air)</b>
<b>ASTM D-6350</b>	<b>(Natural Gas)</b>

*Tekran equipment is manufactured under US and  
foreign patents and patents pending*



The **Tekran 2600 CVAFS Analytical System** is the most versatile and dependable analyzer in the Tekran product line. Always striving to improve our products, we have further refined the Tekran 2600 analyzer and can now offer our customers a new configuration for total mercury analysis. Learning from the success of other Tekran analytical systems as well as listening to the suggestions of our customers, the Tekran 2600 can now be purchased with a direct in-vial sparging option. The **Tekran 2600 In-Vial Sparging Configuration (2600-IVS)** departs from flow-based techniques and uses direct sparging in septum vials to quantify Total Mercury content in the samples. The new in-vial sparging configuration is fully compliant with EPA Method 1631 and EPA Method 245.7.

The Tekran 2600-IVS advantages are summarized below:

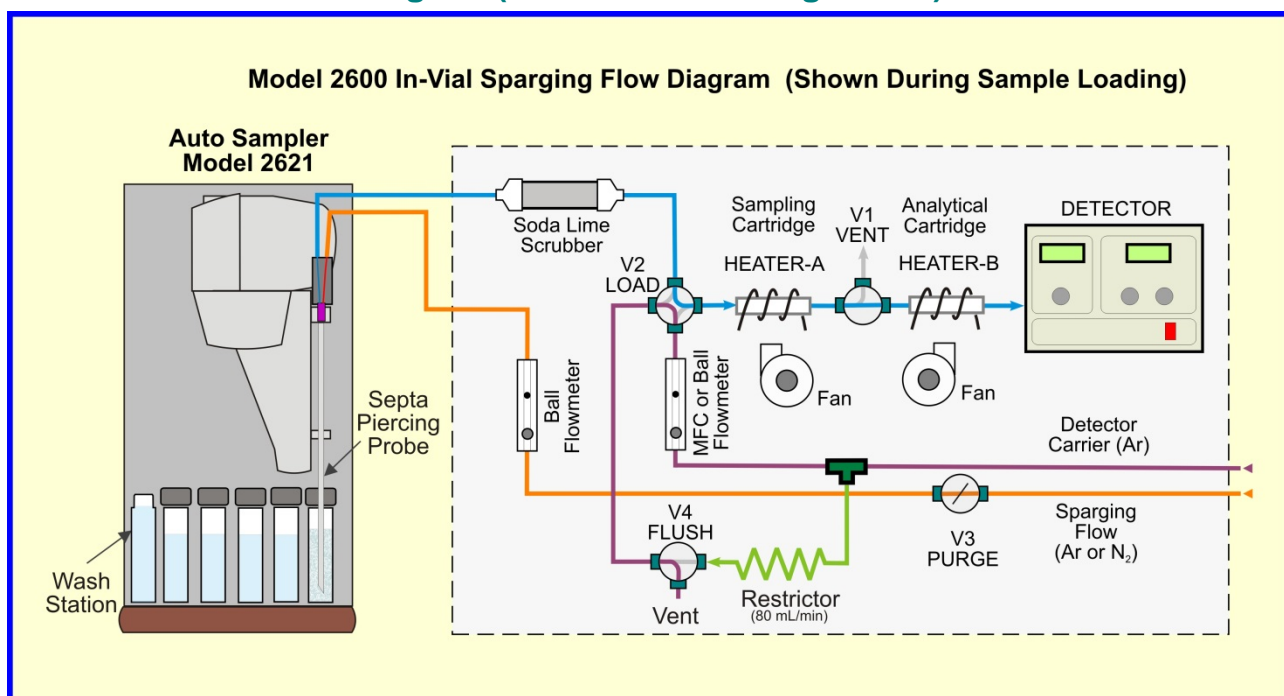
- **Reduced cost!**
  - Less hardware to purchase
  - Huge reduction in consumables
- No liquid transfer; elimination of phase separator, peristaltic pump, and liquid lines
- Great reduction in liquid reagent volume and waste
- Sample time shortened from 4-½ minutes to 3-¼ minutes
- Only gases are transferred, further reducing carryover potential
- Modular design allows autosampler to be shared with the Tekran 2700

The Tekran 2600-IVS uses sealed septum vials as the reaction vessel for tin chloride reduction chemistry. The Tekran 2600-IVS automates the sparging and analytical processes of EPA Methods 1631 and 245.7. The 2600-IVS eliminates the need for a peristaltic pump and phase separator, since mercury is sparged directly from the septum vial. This provides cost savings on

hardware components, reduces analytical gas consumption, and eliminates consumable items such as pump tubing, fittings, and sample lines. Overall, the configuration changes make the Tekran 2600-IVS analytical system much more streamlined.

The Tekran 2600-IVS configuration capitalizes on the significant changes to the analytical technique. With sparged liquids remaining in the analysis vials, it is not necessary to flush the sample lines with rinse solutions between samples. This speeds up the analytical cycle and dramatically reduces the waste solutions produced by the instrument. A single vial filled with de-ionized water is the only requirement for external rinsing of the septa-piercing probe. Following sample loading, carrier gas is back-flushed through the sample lines to keep them clean. Eliminating liquid contact with sample lines helps the system remain pristine and essentially eliminates the risk of sample carryover to an already robust analytical system. With elimination of the phase separator and pump unit, there are fewer connections in the sample lines so system integrity is further improved. Assembly and maintenance of the analytical system is also simplified for the end user.

### Tekran 2600-IVS Flow Diagram (Method 1631 Configuration)



Configuring the Tekran 2600 for in-vial sparging requires installation of additional hardware such as solenoid valve, capillary restrictor, and septa piercing probe. Refer to the Tekran 2600-IVS Flow Diagram directly above. Demonstrating the adaptability of the Tekran 2600 software, the new in-vial technique is fully automated and controlled by the Tek-MDS 2.5 software package. No software update is required.

**Currently own a Tekran 2600? Older Tekran Model 2600 instruments may be upgrade-compatible with our Tekran 2600 In-Vial Sparging Conversion Kit. Contact Tekran for details.**