OPERATING INSTRUCTIONS

Silica Gel treated with DNPH Sorbent Tubes

For measuring the air concentration of chemicals including formaldehyde

DESCRIPTION

These tubes are used to measure the average concentration of potentially harmful vapors in the air over a defined sample period. To use, the tube is connected to a small vacuum pump that draws air through the tube at a precise flow rate over a period of time. After the sample is taken, the tube is transported to a laboratory where they can remove the adsorbent material and perform analysis by solvent extraction and gas chromatography (GC) to determine the quantity of chemical collected, from which a time-weighted average (TWA) concentration can be calculated.

SPECIFICATIONS

Sorbent Material	Silica Gel treated with DNPH (2,4-Dinitrophenyl hydrazine)
Flow Resistance	<10 kPa at flows up to 500cc/min
Operating Temperature Range	10 to 40° C between 20-80% RH
Blank Tube Background	≤ NIOSH LOD for the target vapor
Standards Compliance	ISO 22065

Item No	Tube OD	Tube Length	Primary Sorbent Wt	Backup Sorbent Wt
ZST-055	6mm	110mm	300mg	150mg
ZST-055A	6mm	110mm	300mg	150mg

SAMPLING NOTES

- Not recommended for collection of Acrolein.
- Ozone may cause interference.
- Tubes may off gas small amounts of Acetonitrile. Do not sample for Acetonitrile at the same time as using these tubes.

SAMPLING PROCEDURES

1. Determine which sampling method you will be using and look up the required tube, flow rate, and sampling time. Sampling methods for vapors are available from numerous government agencies including NIOSH and OSHA in the USA along with non-governmental organizations such as ASTM.

2. Set the sampling pump to the flow rate specified in the sampling method using a representative tube in-line to simulate the appropriate amount of backpressure. Verify the flow rate with a calibration device traceable to a national standard.

3. Immediately before sampling, use a tube tip breaker tool to break open both ends of the tube as uniformly as possible. Ideally the opening on each end will be approx. 2mm diameter.

4. Connect the tube to a tube holder attached to the sampling pump, ensuring that the air flow is in the direction of the arrow mark on the tube.

5. Operate the sample pump at the flow rate specified and for the duration of time specified in the sampling method.

6. After sampling seal both ends of the tube using the plastic caps provided immediately. To avoid contamination of the sample, do not remove the caps until just before analysis in the laboratory.

7. Send tubes to laboratory for analysis.

CAUTION: High temperatures, high humidity, and excessive flowrates can cause reduced adsorption capacity.

STORAGE AND TRANSPORTATION

Store tubes at ≤4 ° C until ready to use. After sampling, store at ≤4 ° C. Transportation to the laboratory should be expedited (overnight service recommended). Do not ship before holidays or weekends if the laboratory will not be open to receive the tubes.

DISPOSAL

Spent sorbents should be disposed of as laboratory chemical waste. Unused sorbents and packing materials may be placed in normal waste receptacles. Empty or broken glass tubes may be placed into a container for protection against sharp edges. Glass may be recycled according to local glass recycling programs.

ACCESSORIES

Item No	**Description**
GIL-ST-900	Tube Tip Breaker, 5/PK
497697	Gemini Dual Sorbent Tube Holder, Adjustable Flow
APB-109032	Single Tube Holder, Non Adjustable Flow
APB-109033	Single Tube Holder, Adjustable Flow, 5-100cc
APB-109030	Single Tube Holder, Adjustable Flow, 5-800cc