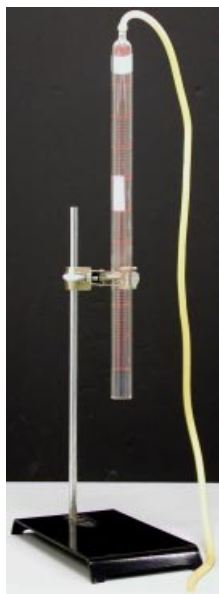


Volume Verification for the Sensidyne/Kitagawa Model AP-20S and Model AP-1S Piston Pumps

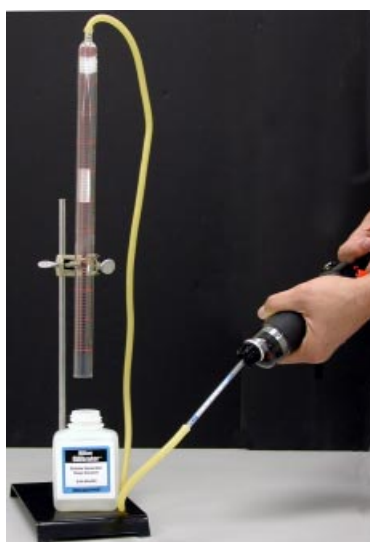
To assure optimum accuracy, the volume of air drawn through a detector tube must be correct within acceptable limits. Determining the sample volume is a simple procedure using the Sensidyne Volume Verification Kit (PN^o 830-1010-01). The kit includes some flexible tubing, soap solution, a ring stand, clamp, and a bubble flowmeter. The bubble flowmeter is marked from 0 to 110 ml (or cc). To verify the volume, follow Steps 1–8.



1 Assemble the bubbler as shown above.



2 Break off the ends of a fresh detector tube. Insert the tube into the pump (A 120SD or similar one-minute tube is recommended).



3 Attach the inlet of the tube to the flow meter via flexible tubing, ensuring that there are no leaks.

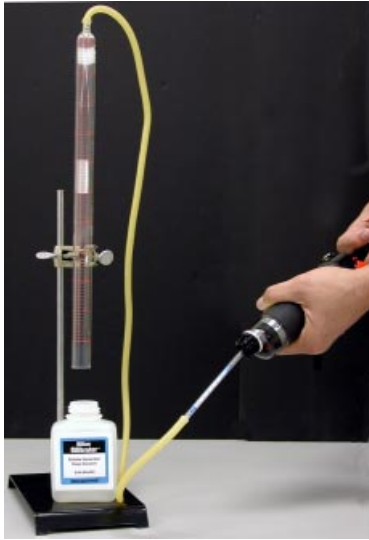


4 Introduce a soap bubble into the bubbler as shown above.

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Volume Verification

(continued)

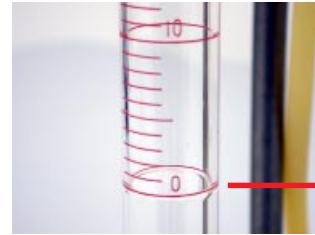


5

Use the pump to zero the soap bubble (see close-up in #6).

NOTE

To prevent bubbles from breaking prematurely, it will be necessary to first wet the bubbler walls by drawing a series of bubbles. This can be facilitated with a motorized pump.



Soap Bubble

6

The soap bubble should be at the zero mark.



7

Take a full pump stroke and observe that the bubble has stopped moving (about 1 minute for a 120SD tube).



Soap Bubble

8

The soap bubble should be at the 100 \pm 5 ml mark. If it is not lubricate the pump and repeat Steps 1-8.

It should be noted that there is no significant accuracy loss as long as 90 ml or more are drawn in the allotted time. The stainlength in the Sensidyne/Kitagawa system is determined by the first 80 to 90 ml of the sample. The remaining, slow moving sample portion serves to darken the stain and define the endpoint.

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