

KITAGAWA
HYDROGEN SULPHIDE LENGTH-OF-STAIN DETECTOR TUBES
(Type SE)

PERFORMANCE:

Measuring Range :	2 - 40 ppm	1 - 20 ppm	0.5 - 10 ppm
Sampling Time :	30 sec.	1 min.	2 min.
	(1/2 pump stroke) (1 pump stroke) (2 pump strokes)		
	*The graduations printed on the tube are for 1 pump stroke.		
Colour Change :	Yellow - Pink		
Detectable Limit :	0.2 ppm (2 pump strokes)		
Storage Condition:	In a cool and dark place, not to exceed 25°C (77°F)		

FLOW CONTROL ORIFICE SUPPLIED WITH PUMPS PRIOR TO SEPTEMBER, 1985 SHOULD NOT BE USED WITH THIS TUBE.

READ CAREFULLY THE "USER RESPONSIBILITY" SECTION PRIOR TO USING THIS PRODUCT.

SAMPLING AND MEASUREMENT:

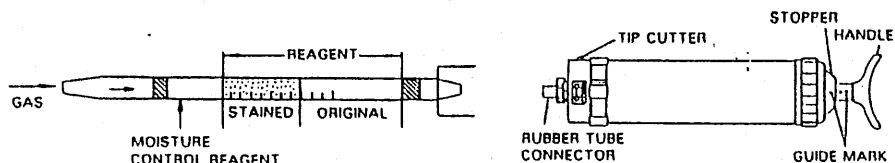


Fig. 1

- Break both ends of a new detector tube by using the tip cutter.
CAUTION: SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM AIRBORN PIECES OF BROKEN GLASS AND SHARP CUT GLASS EDGES.
- Insert the tube end securely according to the direction of printed arrow mark into the rubber tube connector as shown in Fig. 1.
- Align the guide marks (red dots) on the shaft and stopper of the pump. Pull the handle at a full stroke and wait for 1 minute. (In case of using the previous Model 400, turn the handle by 1/4 to lock after pulling it.)
- Remove the detector tube from the connector on the completion of the sampling. A reading can be obtained directly from the scale printed on the detector tube.
- In case that the concentration is less than 1 ppm, turn the handle right or left after above step 3 and push it back fully without removing the detector tube from the connector. Then repeat above step 3 and 4 once. And divide the reading value by 2.
- If the discolouration exceeds the scale with the above 1-pump-stroke procedure, the following 1/2-pump-stroke procedure is available for detection of higher concentration (upto 40 ppm).
 - Repeat above step 1 to 2 with another new detector tube.
 - Align the guide mark (red dots) on the shaft and stopper of the pump. Pull the handle at a 1/2 pump stroke (to 50 ml line) and wait for 30 seconds.
(In case of using previous Model 400, pull the handle at 1/2 stroke (to 50 ml line) without connecting the detector tube and turn the handle by 1/4 to lock after pulling it.)
 - Remove the detector tube from the rubber tube connector on the completion of sampling and read the reading value.
 - Then multiply the reading value by 2.

When the top of the discoloured layer is made obliquely, read the concentration at the centre between the longest and the shortest points of the discoloured layer. The total stain length should be read, even if the stained layer gets multi-colour discolouration.

CORRECTION FOR AMBIENT CONDITIONS:

Temperature;

No temperature correction is necessary at the temperature of 0°C (32°F) to 40°C (104 °F).

Humidity;

No corrections are necessary.

Atmospheric Pressure;

Tube readings can be corrected by using either the following equation:

$$\begin{aligned} \text{True concentration} &= \text{Tube reading} \times 1013 / (\text{Atmospheric pressure in mbar}) \\ \text{or True concentration} &= \text{Tube reading} \times 760 / (\text{Atmospheric pressure in mmHg}) \end{aligned}$$

INTERFERENCES:

Phosphine or Mercaptans produce a similar stain and give higher readings. Nitrogen dioxide or Ammonia does not change the discoloured layer by itself but each coexistence with Hydrogen sulphide gives lower readings.

HAZARDOUS AND DANGEROUS PROPERTIES OF HYDROGEN SULPHIDE:

T.L.V.** : 10 ppm
Explosive range in air: 4 - 45.5 %

**Threshold Limit Value established by the American Conference Governmental Industrial Hygienists, 1990.

CHEMICAL REACTION IN THE DETECTOR TUBE:



INSPECTION OF ASPIRATING PUMP:

Before testing, the pump shall be checked for proper performance. Leakage of air will affect accuracy of readings. The leakage check should be carried out by pulling the handle fully with an unopened tube into the connector and waiting for 3 minutes. If the handle comes back thoroughly to the original position when the lock is released, the performance is good. Any pump showing signs of leakage should be immediately removed from use until the leakage is corrected.

CAUTION:

Keep the detector tubes out of the reach of children and used tubes should be discarded carefully according to relevant regulations.

USER RESPONSIBILITY:

It is the sole responsibility of the user of this equipment to ensure that the equipment is operated, maintained, and repaired in strict accordance with these instructions and the instructions provided with each Model 400, 400A or AP-1 aspirating pump, and that detector tubes are not used which are either beyond their expiration date or have a colour different than referenced under Performance Specifications.

The Manufacturer and Manufacturer's Distributor shall not be otherwise liable for any incorrect measurement or any damages, whether damages result from negligence or otherwise.