

Kitagawa METHYL BROMIDE DETECTOR TUBES

★ READ CAREFULLY THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE ASPIRATING PUMP PRIOR TO USING THIS PRODUCT.

★ DON'T DISCARD THIS INSTRUCTION MANUAL UNTIL ALL THE TUBES IN THIS BOX ARE USED UP.

1. PERFORMANCE:

Measuring Range

and Sampling Time: 10 - 500 ppm (1 pump stroke, 2 minutes)

Graduations on the detector tube apply to 1 pump stroke.

Colour Change : White → Reddish Orange

Detectable Limit : 1 ppm

Operating temperature: 0-40°C (32-104°F) (Temperature correction is necessary.)

Aspirating Pump : Model AP-1, 400A or 400

CAUTION!

1. DETECTOR TUBE AND PRIMER TUBE CONTAINS REAGENTS (CHROMIUM OXIDE AND SULPHURIC ACID)
2. DON'T TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
3. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

NOTICE

1. THE USE OF ASPIRATING PUMPS OTHER THAN MODELS AP-1, 400A OR 400 MAY CAUSE CONSIDERABLE ERROR IN INDICATION.
2. DON'T USE FLOW CONTROL ORIFICE WITH THIS TUBE. (FOR MORE DETAIL, REFER TO THE INSTRUCTIONS OF THE ASPIRATING PUMP.)
3. BEFORE TESTING, CHECK THE ASPIRATING PUMP FOR LEAKS (REF. ITEM 8). ANY PUMPS SHOWING SIGNS OF LEAKAGE SHOULD BE CORRECTED BEFORE USE.
4. DON'T USE THIS TUBE OUTSIDE THE STATED OPERATING TEMPERATURE RANGE.
5. STORE TUBES IN A DARK AND REFRIGERATED PLACE, NOT TO EXCEED 10°C (50°F), AND USE BEFORE EXPIRATION DATE PRINTED ON TOP OF THE BOX.
6. PRIOR TO USE, READ CAREFULLY ITEM 9 "USER RESPONSIBILITY"

2. SAMPLING AND MEASUREMENT:

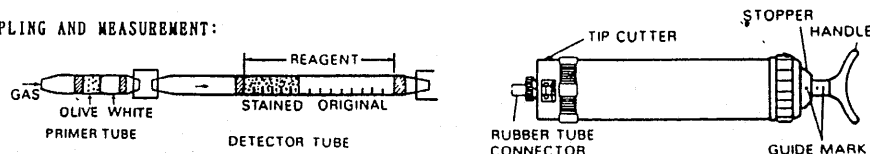


Fig. 1

- ① Break both ends of detector tube and primer tube, and connect each end of the detector tube and primer tube with rubber tube as shown in Fig.1.

CAUTION! SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM SPLINTERING GLASS.

- ② Insert the detector tube into aspirating pump securely as shown in Fig.1. (Arrow mark shall point to the pump.)
- ③ Align the guide marks on the shaft and stopper of the aspirating pump.
- ④ Pull pump handle to full stroke until it locks and wait for 2 minutes or until confirmation that sampling is completed (See descriptions of the flow indicator in the pump instructions).

NOTE: If using model 400, pull pump handle to full stroke and turn the handle by 1/4 turn to lock, then wait for 2 minutes.

- ⑤ On completion of sampling, read the scale at the top of the stained layer.
- SPECIAL NOTE: 1. When the top of the stained layer is unclear, read the scale at the centre between the longest and shortest points. The total stain length should be read, even if the stained layer gets multicolour discoloration.

3. CORRECTION FOR AMBIENT CONDITIONS:

- ① Temperature: The scale is calibrated based on the temperature of 20°C (68°F). Readings obtained in other temperature circumstances should be corrected with the following temperature correction table.

Tube Readings (ppm)	Temperature Correction Table						
	Corrected Concentration (ppm)						
	0°C (32°F)	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
500	—	—	—	620	500	430	390
400	—	—	630	475	400	360	325
300	—	675	430	345	300	280	260
200	580	320	235	210	200	190	175
150	260	185	160	150	150	140	130
100	120	110	100	100	100	95	90
50	50	50	50	50	50	50	50

- ② Humidity: No corrections are necessary.

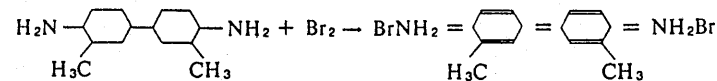
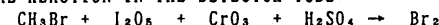
- ③ Atmospheric Pressure :

$$\text{True concentration} = \frac{\text{Temperature corrected concentration} \times 1013}{\text{Atmospheric pressure (in hPa or mbar)}}$$

4. INTERFERENCES:

Halogen or Halogenated hydrocarbons produce a similar stain and give higher readings (more than 40 ppm of Trichloroethylene or Tetrachloroethylene).

5. CHEMICAL REACTION IN THE DETECTOR TUBE:



6. DISPOSAL OF TUBE:

USED TUBES SHOULD BE DISCARDED CAREFULLY ACCORDING TO RELEVANT REGULATIONS, IF ANY.

7. HAZARDOUS AND DANGEROUS PROPERTIES OF METHYL BROMIDE:

T.L.V. ◆: 5 ppm

Explosive range in air: 10 - 15 %

◆ Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1995 -1996.

7. INSPECTION OF ASPIRATING PUMP:

Checking for leaks:

- ① Insert sealed, unbroken detector tube into the pump.
- ② Align the guide marks on the shaft and stopper of the pump.
- ③ Pull the handle to full stroke and wait for 3 minutes. (If using model 400, turn the handle by 1/4 turn to lock.)
- ④ Unlock the handle and allow it to return slowly into the pump with holding the cylinder and handle securely.

CAUTION! HANDLE WILL TEND TO SNAP BACK INTO THE PUMP QUICKLY.

- ⑤ If the handle returns completely to the original position, the performance is satisfactory. Otherwise, refer to maintenance procedure in the pump instructions to correct the fault.

8. 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 AP-1, 400A or 400 aspirating pump, and that detector tubes are not used which are either beyond their expiration date or have a colour change different to that stated in the 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.