No.198U

KITAGAWA
METHYL CYCLOHEXANONE LENGTH-OF-STAIN DETECTOR TUBES
(Type U)
(Direct Reading Type)

PERFORMANCE:

Measuring Range	:	2 - 100 ppm
Sampling Time	:	4.5 minutes (3 pump strokes)
Colour Change	:	Yellow - Pale blue
Detectable Limit	:	1 ppm
Storage Condition:		In a cool and dark place, not to exceed 25°C (77°F)

*FLOW CONTROL ORIFICE SHOULD NOT BE USED WITH THIS TUBE.

SAMPLING AND MEASUREMENT:

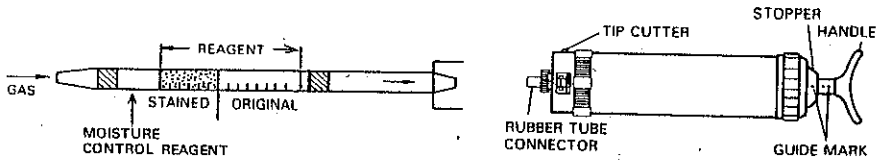

Fig. 1

1. Break both ends of a new detector tube by using the tip cutter, and insert the detector tube end securely according to the direction of printed arrow mark into the rubber tube connector as shown in Fig. 1.
2. Align the guide marks (red dots) on the shaft and stopper of the pump. Pull the handle at a full stroke and wait for 1.5 minutes. (In case of using the previous Model 400, turn the handle by 1/4 to lock after pulling it.)
3. Turn the handle right or left by 1/4 and push it back fully without removing the detector tube from the connector. Then repeat these pulling and pushing steps twice (three times in total).
4. 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.

SPECIAL NOTE

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;

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.

Temperature Correction Table

Scale Readings (ppm)	True Concentration (ppm)				
	0°C (32°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
100	-	130	100	80	66
80	130	105	80	65	52
60	100	80	60	48	36
40	68	54	40	30	22
20	35	26	20	14	10
10	18	14	10	7	5
2	3	3	2	1	1

Humidity;

No corrections are necessary.

Atmospheric Pressure;

Tube readings can be corrected by using either the following equation:
True concentration = Tube reading x 1013/(Atmospheric pressure in mbar)
or True concentration = Tube reading x 760/(Atmospheric pressure in mmHg)

INTERFERENCES:

Alcohols produce similar stains and the coexistence with Methyl cyclohexanone give higher readings. Paraffin hydrocarbons (more than C_3), Aromatic hydrocarbons or Halogenated hydrocarbons change the whole reagent to Pale brown. Esters change the bottom of stains to Pale brown. Each coexistence of them with Methyl cyclohexanone do not affect the accuracy of the reading values.

HAZARDOUS PROPERTY OF METYYL CYCLOHEXANONE:

T.L.V.** : 50 ppm

**Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 1987.

CHEMICAL REACTION IN THE DETECTOR TUBE:

$$CH_3C_6H_9O + Cr^{6+} + H_2SO_4 \longrightarrow Cr^{3+}$$

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. When the handle does not come back to the original position completely, give maintenance to the pump referring to the relevant description in the instruction manual of the pump. Then, confirm the pump by carrying out this inspection procedure again.

CAUTION:

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