TIME-WEIGHTED-AVERAGE TOLUENE DETECTOR TUBES

PERFORMANCE:

Measuring Range: 20 to 200 ppm TWA concentration (depending on sampling duration)
20 to 120 ppm (4 to 8 hours duration sampling)
40 to 200 ppm (1 to 4 hours duration sampling)
* The scale printed on the tube is calibrated at 8 hours sampling, and the air flow rate of 10 ml/min.

Color Change: White to Black

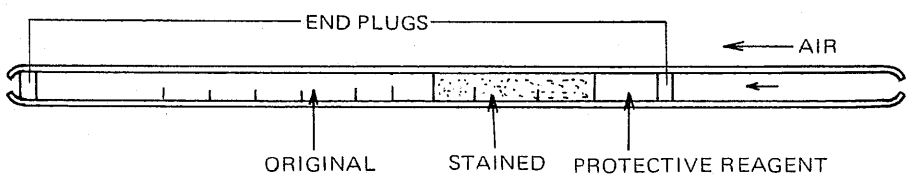

Fig. 1

SAMPLING:

1. Break tips of a TWA Toluene tube and insert it into the special tube holder provided.
2. Connect the tube holder to the sampling pump with suitable tubing (silicone rubber, pvc, etc.); and if the tube holder is away from the breathing zone, load sampled air from the breathing zone to the tube holder through teflon tubing.
3. Turning the pump on, start sampling with the flow rate of 10 ml/min, and record the starting time or the number figured by a counter on the personal sampler.
4. After completion of sampling, turn the pump off and record the finished time or number on the counter of sampling.

MEASUREMENT:

1. In case of 8 hours, with 10 ml/min sampling correctly, the TWA concentration can be read directly by the scale printed on the tube at the top of Black stain.
2. If the sampling duration is less than 8 hours, the actual TWA concentration can be obtained graphically from the chart provided below.
3. If the flow rate is not 10 ml/min, divide the scale reading by the ratio of sampled air volume to 4800 ml.

$$\text{Actual TWA concentration (ppm)} = I \times \frac{4800}{n \times Kv}$$

I = Scale reading
n = Sampling finished number on the counter – starting number : strokes (minus)

TEMPERATURE AND HUMIDITY CORRECTION:

No temperature correction is necessary from 10°C (50°F) to 30°C (86°F).
From 0% (20°C = 68°F) to 70% (20°C = 68°F) relative humidity, no need for corection.

INTERFERENCES:

Coexistence of Benzene, Acetone or Methyl Ethyl Keton with Toluene more than the level of 180%, 20%, 20% of Toluen respectively give higher readings.
Coexistence of more than 50 ppm of Hexane produces a dark brown stain.

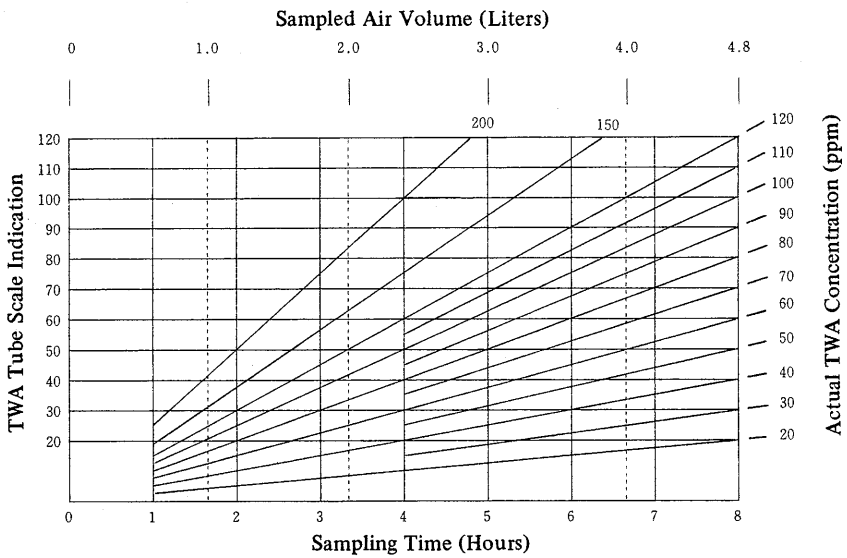

Fig. 2 SCALE CONVERSION CHART

Example: (1) If sampling time is 5 hours and scale reading is 50, the Actual TWA concentration is 80 ppm.
(2) If sampled air volume is 4.0ℓ, and scale reading is 50, the Actual TWA concentration is 60 ppm.