Kitagawa

NO. 501

TIME-WEIGHTED-AVERAGE AMMONIA DETECTOR TUBES

PERFORMANCE:

Measuring Range: 5 to 200 ppm TWA concentration
(depending on sampling duration)
5 to 50 ppm (4 to 8 hours duration sampling)
10 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 8 ml/min.

Color Change: Purple to Yellow

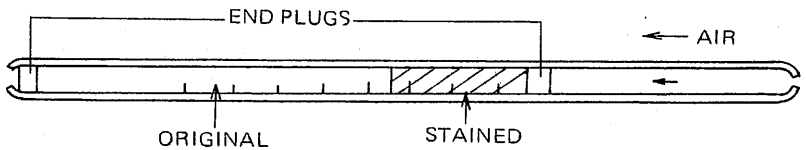

Fig. 1

SAMPLING:

1. Break tips of a TWA NH_3 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 8 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 8 ml/min sampling correctly, the TWA concentration can be read directly by the scale printed on the tube at the top of yellow 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 8 ml/min, divide the scale reading by the ratio of sampled air volume to 3840 ml.

$$\text{Actual TWA concentration(ppm)} = I \times \frac{3840}{n \times Kv}$$

I = Scale reading

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

Kv= Volume coefficient: ml/stroke

TEMPERATURE AND HUMIDITY CORRECTION:

No temperature correction is necessary from 10°C (50°F) to 30°C (86°F).
From 30% (20°C = 68°F) to 100% (20°C = 68°F) relative humidity, no need for correction.

INTERFERENCE:

Coexistence of Hydrogen sulfide does not affect accurate readings.
Coexistence of more than 20 ppm of Sulfur dioxide gives lower readings.

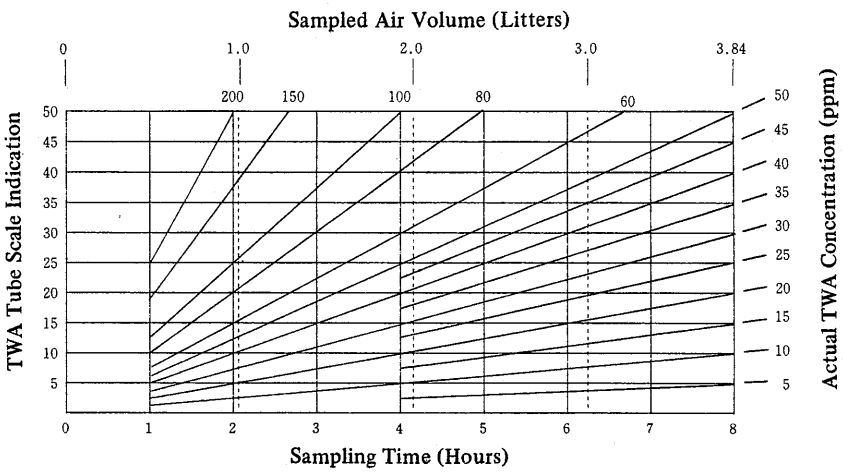

Fig. 2 SCALE CONVERSION CHART

Example: (1) If sampling time is 4 hours and scale reading is 20, the Actual TWA concentration is 40 ppm.
(2) If sampled air volume is 2.0ℓ, and scale reading is 5, the Actual TWA concentration is 10 ppm.