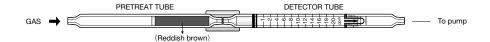
# **ACRYLONITRILE**



## 1. PERFORMANCE

1) Measuring range : 1-20 ppm 0.5-10 ppm 0.25-5 ppm 0.2-4 ppm Number of pump strokes  $1 (100 \text{m} \ell)$   $2 (200 \text{m} \ell)$   $4 (400 \text{m} \ell)$   $5 (500 \text{m} \ell)$ 

2) Sampling time : 1.5 minutes/1 pump stroke

3) Detectable limit : 0.05ppm (500m $\ell)$ 

4) Shelf life : 1 year (Necessary to store in refrigerated conditions;  $0 \sim 10 \, ^{\circ}\text{C}$ )

5) Operating temperature :  $0 \sim 40 \,^{\circ}\text{C}$ 

6) Temperature compensation : Necessary (See "TEMPERATURE CORRECTION TABLE") 7) Reading : Direct reading from the scale calibrated by 1 pump stroke

8) Colour change : Yellow→Red

## 2. RELATIVE STANDARD DEVIATION

RSD-low: 10% RSD-mid.: 5% RSD-high: 5%

## 3. CHEMICAL REACTION

By decomposing with an Oxidizer, Hydrogen cyanide is produced, Hydrogen cyanide reacts with Mercuric chloride, then Hydrogen chloride is liberated and PH indicator is discoloured.

 $CH_2 = CHCN + CrO_3 + H_2SO_4 \rightarrow HCN$ 

HCN + HgCI<sub>2</sub>→HCI

#### 4. CALIBRATION OF THE TUBE

GAS CHROMATOGRAPHY

## 5. INTERFERENCE AND CROSS SENSITIVITY

Substance	ppm	Interference	Coexistence	
Butadiene	Less than 350 ppm		The accuracy of readings is not affected.	
Toluene	Less than 600 ppm		"	
Hexane	Less than 800 ppm		"	
Styrene	Less than 720 ppm		"	
Hydrogen cyanide		Similar stain is produced.	Higher readings are given.	

## (NOTE)

In case of 2 to 5 pump strokes, following formula is available for actual concentration.

Actual concentration = Temperature corrected value  $\times \frac{1}{\text{Number of pump strokes}}$ 

#### TEMPERATURE CORRECTION TABLE

Tube	Corrected Concentration (ppm)					
Readings (ppm)	0°C (32°F)	10 ℃ (50 °F)	20 °C (68 °F)	30°C (86°F)	40°C (104°F)	
20	26	22.5	20	18	17	
18	23	20	18	16.5	15.5	
16	20.5	18	16	15	14	
14	18	15.5	14	13	12	
12	15.5	13.5	12	11	10.5	
10	13	11	10	9.5	9	
8	10.5	9	8	7.5	7	
6	8	7	6	6	5.5	
4	5.5	4.5	4	4	4	
2	3	2	2	2	2	
1	1.5	1	1	- 1	1	