Tube No. 158S — STYRENE

GAS → [tube diagram with scale: 5 20 50 100 150 200 250 300 ppm] → To pump

1. PERFORMANCE

- 1) Measuring range : 5-300 ppm   2.5-150 ppm
  - Number of pump strokes 1 (100 mℓ)   2 (200 mℓ)
- 2) Sampling time : 1 minute/1 pump stroke
- 3) Detectable limit : 0.5 ppm (200 mℓ)
- 4) Shelf life : 3 years
- 5) Operating temperature : 0 ~ 40 ℃
- 6) Reading : Direct reading from the scale calibrated by 1 pump stroke
- 7) Colour change : White → Yellow

2. RELATIVE STANDARD DEVIATION

RSD-low : 15 %   RSD-mid. : 15 %   RSD-high : 10 %

3. CHEMICAL REACTION

A polymer of Styrene is produced by sulphuric acid.

$$H_2SO_4 + \underset{\bigcirc}{CH} : CH_2 \longrightarrow \left(- \underset{\bigcirc}{CH} - CH_2 - \right)$$
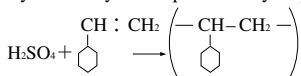
4. CALIBRATION OF THE TUBE

GAS CHROMATOGRAPHY

5. INTERFERENCE AND CROSS SENSITIVITY

Substance		ppm	Interference	ppm	Coexistence
Acrylonitrile	FIG.1		The accuracy of readings is not affected.	400	Lower readings are given.
Butadiene	FIG.2	3	Similar stain is produced.	5	Uneven discolouration is produced and higher readings are given.
Formaldehyde	FIG.3		〃	15	Yellowish orange stain is produced and higher readings are given.
Acetaldehyde			〃	350	Similar stain is produced and higher readings are given.
Methyl alcohol			The accuracy of readings is not affected.	0.35 %	Pale discolouration is produced and higher readings are given.
Ethyl alcohol			〃	0.18 %	〃
Ethyl acetate			〃	700	〃
Butyl acetate			〃	700	〃

(NOTE)

In case of 2 pump strokes, following formula is available for actual concentration.
Actual concentration = 1/2 × Reading value.

FIG.1 Influence of Acrylonitrile

Coexistence
Interference

FIG.2 Influence of Butadiene

FIG.3 Influence of Formaldehyde