# 1, 4-DIOXANE



### 1. PERFORMANCE

1) Measuring range 20-500 ppmNumber of pump strokes  $1(100\text{m}\ell)$ 

2) Sampling time : 1.5 minutes/1 pump stroke

3) Detectable limit ∴ 5 ppm 4) Shelf life ∴ 2 years 5) Operating temperature ∴ 0 ~ 40 °C

6) Temperature compensation : Necessary (See "TEMPERATURE CORRECTION TABLE")

7) Reading : Graduations printed on the tube are calibrated by Methyl alcohol at 1 pump stroke

and 1,4-Dioxane concentration is determined by using a conversion chart.

8) Colour change : Orange → Pale blue

#### 2. RELATIVE STANDARD DEVIATION

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

# 3. CHEMICAL REACTION

Pottassium dichromate is reduced.

$$O < CH_2CH_2 > O + Cr^{6+} + H_2SO_4 \rightarrow Cr^{3+}$$

## 4. CALIBRATION OF THE TUBE

GAS CHROMATOGRAPHY

# 5. INTERFERENCE AND CROSS SENSITIVITY

Substance	ppm	Interference	ppm	Coexistence	
Alcohols		Similar stain is produced.		Higher readings are given.	
Toluene	200	Whole reagent is changed to Brown.	500	The top of discoloured layer becomes unclear.	
Hexane		The accuracy of readings is not affected.	below 1,000ppm	The accuracy of readings is not affected.	
Ethyl acetate		"	"	"	
Trichloroethylene		"	"	"	

#### 1,4-Dioxane concentration (ppm)



No.119U Tube reading (ppm)

#### TEMPERATURE CORRECTION TABLE

	Scale Readings (%)	True Concentration (%)						
		0°C (32°F)	10 °C (50° F)	20°C (68°F)	30°C (86°F)	40 ℃ (104° F)		
	500	700	600	500	470	440		
	400	480	440	400	370	350		
	300	370	330	300	280	260		
	200	250	220	200	190	170		
	100	130	110	100	90	85		
	50	65	60	50	45	40		
	20	25	23	20	18	15		