

# Kitagawa TOLUENE 721 DETECTOR TUBES

- ★ THIS DETECTOR TUBE IS USED WITH THE EXCLUSIVE USE MODEL S-20(SERIES) AIR SAMPLER.
- ★ READ CAREFULLY THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE SAMPLING PUMP PRIOR TO USING THIS PRODUCT.
- ★ DON'T DISCARD THIS INSTRUCTION MANUAL UNTIL ALL THE TUBES IN THIS BOX ARE USED UP.

## 1. PERFORMANCE:

Measuring Range : 0.05 - 1.0 ppm  
 Sampling Volume : 4 ℓ  
 Sampling Time : 200mℓ × 20min  
 Colour Change : White → Brown

Detectable Limit: 0.01 ppm

Operating temperature: 5 - 35°C (41-95° F) (No corrections are necessary.)

Operating humidity : 10 ~ 80 % RH

Sampling Pump : Model S-20 Series

- CAUTION**

  1. PRE-TREAT TUBE CONTAINS REAGENTS.
  2. DETECTOR TUBE CONTAINS REAGENTS.
  3. DON'T TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
  4. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

### NOTICE

1. USE THE SAMPLING PUMPS WITH THE ABILITY OF 200 ml/min FLOW RATE POSSIBLE WHEN THE 721 DETECTOR TUBE CONNECTED.
2. DON'T USE THIS TUBE OUTSIDE THE STATED OPERATING TEMPERATURE RANGE.
3. STORE TUBES IN A REFRIGERATED PLACE (0-10 °C/32-50°F), AND USE BEFORE EXPIRATION DATE PRINTED ON TOP OF THE BOX.
4. PRIOR TO USE, READ CAREFULLY ITEM 9 "USER RESPONSIBILITY".

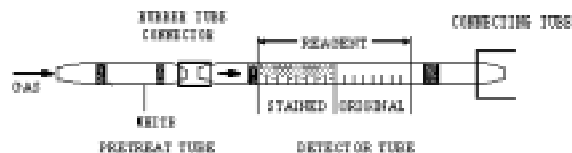


Fig.1

## 2. SAMPLING AND MEASUREMENT:

- ① Break both ends of detector tube and pre-treat tube with attached ampule cutter, and connect each end of the detector tube and pre-treat tube with rubber tube connector as shown in Fig.1.

**CAUTION SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM SPLINTERING GLASS.**

- ② Insert the detector tube into connecting tube of MODEL S-20 Air sampler, and fix it into the detector tube holder. (If connecting direction of detector tube or pre-treat tube is wrong, correct readings cannot be given)
- ③ Turn ON power of Model S-20.
- ④ Preset TIMER at 20 minutes.
- ⑤ In accordance with Instruction manual of each air sampler, preset TIMER (Hours) at 20 minutes and adjust sampling amount at 200 ml/min.
- ⑥ After completion of sampling (20 minutes), remove detector tube and read the scale at the top of the stained layer.

\* With regard to sampling and measuring procedure, it depends on each model of air sampler, therefore read instruction manual of each instrument carefully and make a measurement.

- SPECIAL NOTE:**
- I. When the maximum point of the stained layer is unclear, read the scale at the centre between the longest and shortest points.
  - II. It is desirable to read the concentration immediately after measurement because the stained layer gets longer gradually.

## 3. CONVERSION OF CONCENTRATION UNIT:

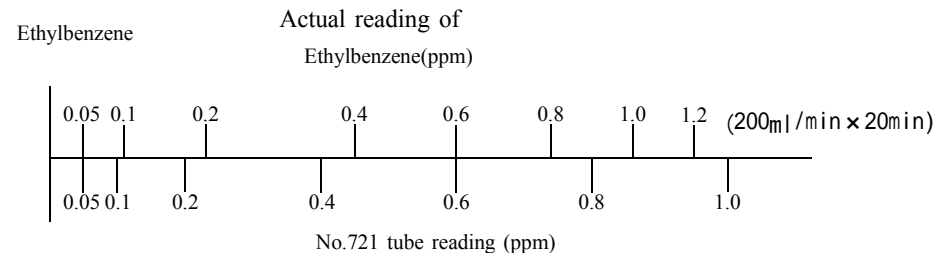
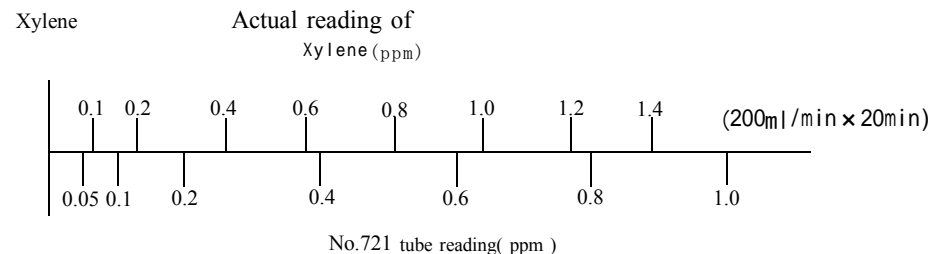
Concentration unit of this detector tube is "ppm", therefore conversion to "μ g/m<sup>3</sup>" is made by the following converting formula.

$$\text{Toluene}[\mu \text{ g/m}^3] = \text{Toluene}[\text{ppm}] \times \frac{92.14}{22.4} \times \frac{273}{273 + t[^\circ\text{C}]} \times \frac{1013}{[h\text{Pa}]} \times 1000$$

In case of 25°C · 1013 hPa, approximate value can be obtained by the following formula.

$$\text{Toluene}[\mu \text{ g/m}^3] = \text{Toluene}[\text{ppm}] \times 3768$$

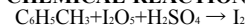
## 4. CONVERSION CHART



## 5. INTERFERENCE:

Coexistence of Xylene or Ethyl benzene produce a similar stain and will give a higher reading.

## 6. CHEMICAL REACTION IN THE DETECTOR TUBE:



## 7. DISPOSAL OF TUBE:

**USED TUBES SHOULD BE DISCARDED CAREFULLY ACCORDING TO RELEVANT REGULATIONS, IF ANY.**

## 8. HAZARDOUS AND DANGEROUS PROPERTIES OF Toluene.

T.L.V.◆: 50 ppm

Explosive range in air: 1.2 - 7.0%

◆ Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 2000.

## 9. USER RESPONSIBILITY:

**It is the sole responsibility of the user of this equipment to ensure that the equipment is operated, maintained, and repaired in strict accordance with these instructions and the instructions provided with each Model AP-1, 400A or AP-400 aspirating pump, and that detector tubes are not used which are either beyond their expiration date or have a colour change different to that stated in the Performance specifications.**

**The Manufacturer and Manufacturer's Distributor shall not be otherwise liable for any incorrect measurement or any damages, whether damages result from negligence or otherwise.**