

- ★ THIS DETECTOR TUBE IS USED WITH THE AIR SAMPLER S-23E or S-25N EXCLUSIVELY.
- ★ READ CAREFULLY THIS INSTRUCTION MANUAL AND THE INSTRUCTIONS OF THE SAMPLING PUMP PRIOR TO USE OF THIS PRODUCT.
- ★ DO NOT 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	: 200 mL/min × 20min
Colour Change	: White → Brown
Detectable Limit	: 0.01 ppm
Operating Temperature	: 5-35 °C (41-95°F)
Operating Humidity	: 10 - 80%RH
Sampling Pump	: Air sampler (S-23E or S-25N)

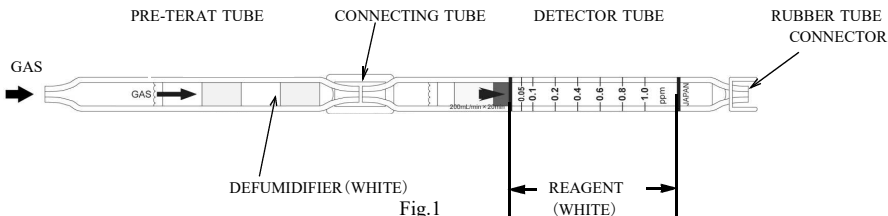
⚠ CAUTION

1. DETECTOR TUBE CONTAINS REAGENTS.
2. DO NOT TOUCH THESE REAGENTS DIRECTLY ONCE TUBES ARE BROKEN.
3. KEEP THE TUBES OUT OF THE REACH OF CHILDREN.

NOTICE

1. THE SAMPLING AND MEASURING PROCEDURE IS DIFFERENT WITH DEPENDING ON THE MODEL OF AIR SAMPLERS. THEREFORE, READ THE INSTRUCTION MANUAL OF EACH SAMPLER CAREFULLY BEFORE USE AND THEN MAKE A MEASUREMENT.
2. DO NOT 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 TUBE BOX.
4. PRIOR TO USE, READ CAREFULLY **ITEM 9. USER RESPONSIBILITY** .

2. SAMPLING AND MEASUREMENT:



- ① Break both ends of the detector tube and the pre-treat tube with attached ampoule cutter provided.
⚠ CAUTION SAFETY GLASSES AND GLOVES SHOULD BE WORN TO PREVENT INJURY FROM SPLINTERING GLASS.
- ② Connect the detector tube and the pre-treat tube with the rubber tube connector of the Model S-20 series air sampler as shown in the above illustration, and fix it into the detector tube holder. (If connecting direction of the detector tube and the pre-treat tube is not correct, correct reading value cannot be obtained.)
- ③ Turn ON power of the Model S-20 series air sampler.
- ④ In accordance with the instruction manual of each air sampler, preset the TIMER (Hours) at 20 minutes and adjust the sampling amount at 200mL/min.
- ⑤ After completion of sampling (20 minutes), remove the detector tube from the tube holder and read the scale at the maximum point of the stained layer.

- SPECIAL NOTE:**
- I. When the maximum point of the stained layer is oblique, 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. CORRECTION FOR AMBIENT CONDITIONS:

- ① Temperature; No temperature correction is necessary
- ② Humidity; No correction is necessary.
- ③ Atmospheric Pressure;

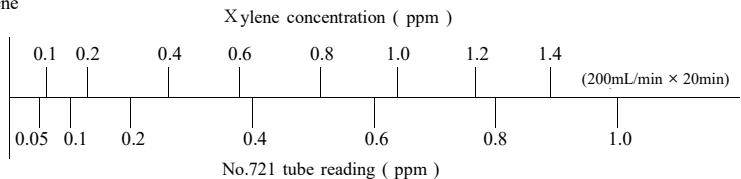
$$\text{True concentration} = \text{Tube reading} \times \frac{1013}{\text{Atmospheric pressure (in hPa)}}$$

4. INTERFERENCE:

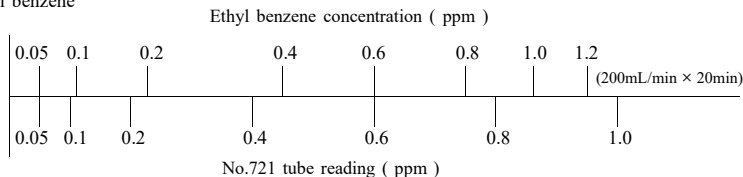
Xylene or Ethyl benzene produces similar stain and coexistence gives higher readings.

5. CONVERSION CHART

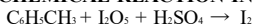
Xylene



Ethyl benzene



6. CHEMICAL REACTION IN THE DETECTOR TUBE:



7. DISPOSAL OF TUBE:

USED TUBES SHOULD BE DISPOSED CAREFULLY IN ACCORDANCE WITH RELEVANT REGULATIONS, IF ANY.

8. HAZARDOUS AND DANGEROUS PROPERTIES OF TOLUENE:

TLV-TWA ◆ : 50 ppm

Explosive range in air : 1.2 - 7%

◆ Threshold Limit Value established by the American Conference of Governmental Industrial Hygienists, 2005.

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 S-23E or S-25N air sampler, 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 Distributors shall not be otherwise liable for any incorrect measurement or any damages, whether damages result from negligence or otherwise.

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