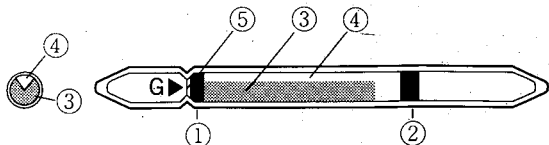


## PASSIVE DOSI-TUBE FOR FORMALDEHYDE

## GENERAL :

The Gastec Passive Dosimeter Tube No.91D provides the measurement of the mean value of FORMALDEHYDE in air by the principle of diffusion sampling. No air sampling equipment such as aspiration pump, motor driven air sampler is needed for the measurement. The calibration marks printed on each tube indicate PPM × Hour and averaged concentration can be available by obtained the sampling time measured.

## PERFORMANCE :



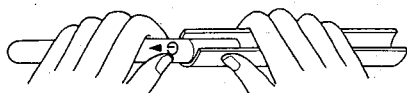
- 1 & 2 Upper and Lower End Plug Packing  
 3 Diffuser  
 4 Analyzing Reagent  
 5 Score

Calibration Scale	1—20 ppm·hour		
Color Change	Yellow—Reddish Brown		
Measuring Range	1—20 ppm	0.2—4 ppm	0.1—2 ppm
Sampling Hours	1	5	10
Detecting Limit	—	—	0.05 ppm

## SHELF LIFE :

Please refer to the term of validity of a label of a Detector Tube Box.

## OPERATING PROCEDURE :



1. Prepare Passive Dosimeter Tube and Dosi-Tube Holder No. 710.
2. Record the measurement starting time on the peel off numbered label in each box of the tube and put the label on the tube.
3. Break the tube at the score of the tube with Gastec Passive Dosi-Tube Holder. Insert a part of the tube in the tube holder where the tube can be broken at the score and break the tube carefully. Remove the broken part of the tube and discard it carefully from the tube holder.
4. Insert the analyzing tube end into the tube holder. For personal sampling, put the dosi-tube holder to the shirt collar of the personnel or workplace where the measurement is required.
5. To protect the tube holder of shirt collar from dropping during operation, support the tube holder with string through a small hole of the tube holder.
6. Measurement concentration can be obtained from an hour sampling. 4—10 hours sampling time is recommended.
7. When the sampling is finished, record the time on the label of the tube and calculate the actual sampling time.

8. The averaged gas concentration can be obtained by the following formula :

$$\text{Average Concentration (ppm)} = \frac{\text{Dosi-Tube Reading (ppm} \cdot \text{hours)}}{\text{Actual Sampling Time}}$$

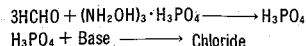
## CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE :

Calibration of the Gastec passive dosimeter tube No. 91D is based on a tube temperature of 20°C (68°F) and approximately 50% relative humidity and normal atmospheric pressure.

- (1) No correction is required for tube temperature of 0-40°C (32-104°F)
- (2) No humidity correction for 0-90% relative humidity range is required.
- (3) No pressure correction is required.

## DETECTION PRINCIPLE :

Formaldehyde reacts with hydroxylamine phosphate to liberate phosphorous acid, which discolors pH indicator to reddish brown.



## INTERFERENCES :

Substance	Concentration	Interference	Changes color by itself to
Acid gases		+	} Reddish brown
Aldehydes, Ketones		+	

## APPLICATION FOR OTHER SUBSTANCES :

The Gastec dosi-tube No.91D can also be used for the detection of following substances in air with correction factor below:

Substance	Correction	Sampling time	Measuring range
Acetaldehyde	Factor : 1.0	} 1 to 10 hours	0.1 to 20 ppm
Furfural	Factor : 2.0		0.2 to 40 ppm
Methyl ethyl Ketone	Factor : 1.25		0.125 to 25 ppm

## CORRECTION FACTOR :

Detector tubes are primarily designed to measure specific gases. But it is also possible to measure other substances of similar chemical properties with the aid of a correction factor or chart. A correction factor is a figure which is multiplied by the concentration interpreted from the color starting on the detector tube. The correction may also be presented as a chart on tube if the correction relationship is nonlinear. Therefore, please make use of the correction factor/chart measuring ranges as a reference. Moreover, this factor may vary slightly between production batches. For a more precise factor please contact your Gastec distributor.

## DANGEROUS AND HAZARDOUS PROPERTIES :

Threshold Limit Value-Time Weighted Average (TLV-TWA) by ACGIH (1996) : 0.3 ppm (7—8 hours)

**TUBES MUST BE STORED AT TEMPERATURE BELOW 10°C (50°C).**