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# Gas Detection Tube Data Sheet

## Formaldehyde HCHO No. 10-121-05

	Extended Range	Standard Range	Extended Range
Range (ppmv)		0.1 - 5	0.8 - 40
No. of Pump Strokes		5	1
Sample Volume (mL)		500	100
Sample Time (min)		5 x 2	2
Correction Factor		1	7.5

Precision (Relative Standard Deviation)\*:  $\leq \pm 20\%$

Linearity with No. of Pump Strokes:  $r^2 > 0.995$

Humidity:

Humidity (RH)	<5%	30%	50%	80%
Corr. Factor	1.0	0.85	0.79	0.75

Temperature Range: 0 - 40°C  
(32 - 104°F)

Temp (°C/°F)	0/32	10/50	20/68	30/86	40/104
Corr. Factor	1.27	1.10	1.0	0.87	0.79

Storage Life: 2 years in darkness at 5 °C (40 - 77°F). Refrigeration preferred.

Color Change: Yellow → Reddish brown

Reaction Principle:  $3\text{HCHO} + (\text{NH}_2\text{OH})_3 \cdot \text{H}_3\text{PO}_4 \rightarrow \text{H}_3\text{PO}_4 + 3\text{H}_2\text{C}=\text{NOH} + 3\text{H}_2\text{O}$   
 $\text{H}_3\text{PO}_4 + \text{Base} \rightarrow \text{Phosphate (dye color change)}$

Cross-sensitivity: Substance	Concentration (ppmv)	Apparent Reading*
Acetaldehyde	3	3
Propionaldehyde	3	3
Acetone	3	Entire tube <sup>#</sup>
Methyl ethyl ketone	3	Entire tube <sup>#</sup>
CH <sub>4</sub>	25000	0
CO	500	0
CO <sub>2</sub>	1000	0
H <sub>2</sub> S	100	0
SO <sub>2</sub>	100	0
Hexane	2000	0
Toluene	100	0
Isobutylene	100	0.5
Isopropanol	2000	0
Phenol	25	0
Styrene	20	0

\*Data based on RAE pumps and tubes used in standard range.

<sup>#</sup> Faint brown color over entire stain length. 100 ppm gives stronger color.

Note: In dry air the background color may change: read only reddish-brown color.

Caution: Dispose of spent or expired tubes according to local regulations.  
Possibly hazardous materials are given under the section Reaction Principle.