

Uniphos Detector Tube Instruction Sheet

Direct Reading Length of Stain Type

Multigas-V Detector Tube

SMG-5

MOST IMPORTANT:

Before using this product, carefully read this instruction sheet and strictly follow the recommended instructions.

SPECIFICATION:

Measurement Range	Qualitative
No. of Pump Strokes	1 (100 mL)
Sampling Time	1 minute per pump stroke (100 mL)
Color Change	Refer chart given overleaf
Storage condition	Below 10°C (50°F)
Calibration condition	Calibrated at 20°C (68°F), 50% RH and 1013 mbar
Reaction principle	Refer the chart given overleaf.

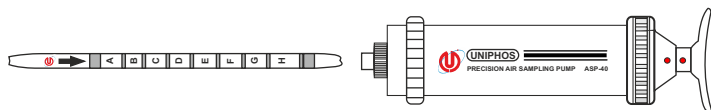
NOTES:

1. The sampling pump and detector tube together form a measuring system.
2. Uniphos tubes when used with pump of similar design of other manufacturers ensure that the pump is of 100 ml per stroke capacity.
3. Before each day's use, check the pump for leaks and use it only if it is free from leak.

HOW TO CHECK THE PUMP FOR LEAK:

Insert an unopened tube into the pump inlet and pull a stroke. After 3 minutes unlock the handle and release it slowly holding the handle and the cylinder securely, so that the **piston does not fly back violently**. If the handle returns to the 0 red line, the pump is leak free and fit for use.

MEASUREMENT PROCEDURE:



1. Break both ends of the tube using the tip breaker on the sampling pump.
2. Insert one end of the tube securely into the sampling pump inlet, ensuring that the arrow mark on the tube points towards the pump.
3. Rotate the piston shaft until the red dot on it aligns with the red dot on the pump body.
4. Insert the open end of the tube into the gas to be sampled and pull the handle 1 stroke until it locks in place, and wait for the sampling time indicated. The end-of-flow indicator (Vac. Test) at the end of the pump handle also shows when sampling is complete.
5. Remove the tube from the pump and observe the color change of each column. If any color change is happened to any column, refer the chart to find out the approximate concentration of gas present in the area.
6. Check for possible interferences of other gases.

CORRECTION FOR TEMPERATURE, HUMIDITY AND PRESSURE:

Temperature - Not necessary between 0 - 40°C (32 - 104°F).

Relative humidity - Not necessary between 10 - 90 %.

Pressure - Multiply tube reading with compensation factor F.

$$F = \frac{1013 \text{ (mbar)}}{\text{actual atmospheric pressure (mbar)}} \quad \text{Or} \quad \frac{760 \text{ (mmHg)}}{\text{actual atmospheric pressure (mmHg)}}$$

APPLICATION AREA:

This tube is suitable for the qualitative analysis of unknown gases listed in the chart in the environment or in industrial area.

OPERATING PRINCIPLE AND THE CHEMICAL REACTION:

The tube contains seven different indicating layers. On drawing the sample air containing one or more of fourteen gases which can be detected by this tube, the indicating layer changes its colour as per the chart given overleaf.

INTERFERENCES:

This tube is not specific to any one particular gas. If gases with similar chemical property are present along with the gases listed in the chart, it can produce colour change due to their interference.

CAUTION:

1. The process of breaking the tube ends can generate flying glass bits and leave the tube with sharp edges. Use eye and hand protection while breaking the tube ends.
2. Keep tubes out of reach of unauthorized persons, especially children.
3. Dispose of used tubes according to local regulations.

IMPORTANT:

As we are continuously working on the improvement of products, we reserve the right to change the specifications without any prior notice.

USER RESPONSIBILITY:

It is entirely the responsibility of the user of the equipment (detector tube with pump) to see that the equipment is operated, maintained and repaired in strict accordance with the manufacturer's instructions provided with the equipment. It is also the sole responsibility of the user to ensure that the tubes are not used beyond their expiration date. The manufacturer and manufacturer's distributors are not otherwise liable for any incorrect measurement and its consequences or any damages resulting from user's negligence or otherwise.

Manufactured By : Uniphos Envirotronic Pvt. Ltd.(100% EOU)



Nahuli(PO), Umbergaon (Tal.)

Valsad (Dist), Gujarat, India - 396105

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#RD-001

Rev.0325

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CHART FOR GAS CONCENTRATION LEVEL VERSUS COLOUR CHANGE OF MULTIGAS-V DETECTOR TUBE.

Gas Name: - Multigas - V				Sampling volume:- 100 mL			Sampling time:- 1.0 minutes			
Code No.: - SMG – 5				Colour change:- As per chart			Shelf life: - 18 Months Date: - 01.03.2025			
Sr. No.	Gas Name	Original Colour → Conc. (ppm) ↓	A (Yellow)	B (White)	C (Blue)	D (White)	E (White)	F (Yellow)	G (Yellow)	H (Blue)
Active reagents: -			pH indicator	N – benzyl aniline & 4,4 Nitro benzyl pyridine	BaCl2.2H2O HCl & pH indicator	O – Tolidine	Copper sulphate	HgCl2, HCl & pH indicator	Palladium chloride & Sodium metabisulphite	NaOH & pH indicator
01	Hydrogen Chloride	≥ 5	Pink (III)	--	--	--	--	--	--	--
		≥ 50	Pink (I)	--	--	--	--	--	--	--
02	Phosgene	≥ 0.1	--	Red (III)	--	--	--	--	--	--
		≥ 10	--	Red (I)	--	--	--	--	--	--
03	Chlorine	≥ 05	--	--	--	Yellow (III)	--	--	--	--
		≥ 50	--	--	--	Yellow (I)	--	--	--	--
04	Sulphur Dioxide	≥ 05	--	--	Yellow (III)	--	--	--	--	--
		≥ 30	--	--	Yellow (I)	--	--	--	--	--
05	Nitrogen Dioxide	≥ 05	--	--	Violet (I)	Yellow (III)	--	--	--	--
		≥ 30	--	--		Yellow (I)	--	--	--	--
06	Hydrogen Sulfide	≥ 10	--	--	--	--	Brown (III)	Red (III)	--	--
		≥ 100	--	--	--	--	Brown (I)	Red (I)	--	--
07	Hydrogen Cyanide	≥ 2.5	--	--	--	--	--	Red (III)	--	--
		≥ 30	--	--	--	--	--	Red (I)	--	--
08	Carbon Monoxide	≥ 25	--	--	--	--	--	--	Black (III)	--
		≥ 100	--	--	--	--	--	--	Black (I)	--
09	Acetylene	≥ 200	--	--	--	--	--	--	Black (III)	--
		≥ 2000	--	--	--	--	--	--	Black (I)	--
10	Ethylene	≥ 10000	--	--	--	--	--	--	Black (I)	--
11	Phosphine	≥ 50	--	--	--	--	--	Red (III)	Black (III)	--
		≥ 700	--	--	--	--	--	Red (I)	Black (I)	--
12	Hydrogen	≥ 100000	--	--	--	--	--	--	Black (I)	--
13	Propylene	≥ 10000	--	--	--	--	--	--	Black (III)	--
		≥ 50000	--	--	--	--	--	--	Black (I)	--
14	Mercaptans	≥ 200	--	--	--	--	--	--	Light Orange	--
		≥ 1000	--	--	--	--	--	--	Light Orange	--
15	Carbon Dioxide	≥ 5,000	--	--	--	--	--	--	--	White (III)
		≥ 20,000	--	--	--	--	--	--	--	White (I)

Notes:- 1. --: No Colour change
 2. Stain – I: - The whole layer discolored
 II: - Half layer discolored
 III: - Approx. 0.5 – 2 mm layer discolored

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