Tube No.
131

INORGANIC GAS QUALITATIVE DETECTOR TUBE

Section	Original Colour
A	Pale purple
B	Reddish purple
C	White
D	White
E	Yellow

1. SPECIFICATIONS

1) Substances to be detected : Acetic acid, Amines, Ammonia, Carbon monoxide, Chlorine, Hydrogen chloride, Hydrogen sulphide, Nitrogen dioxide, Phosphine,Sulphur dioxide, *Acetylene and *Metyl mercaptan (*: Organic gas)
2) Tube per box : 10tubes (10-time use)
3) Pump stroke : 1 (100mℓ)
4) Sampling time : 20 seconds
5) Shelf life : 1 year
6) Operating temperature : 0 ~ 40℃
7) Colour change : Refer to following" 3. DISCOLOURATION / QUALITATIVE CHART"
8) Non-discolouration confirmed substances : Carbon dioxide, Hydrogen cyanide, Nitric oxide and *Ethylene (*: Organic gas)

2. CHEMICAL REACTION

SECTION	CHEMICAL REACTION PRINCIPLES
A	By reacting with Phosphoric acid, PH indicator is discoloured. $2NH_3 + H_3PO_4 \rightarrow (NH_4)_2HPO_4$
B	By reacting with an Alkaline, PH indicator is discoloured. $SO_2 + 2NaOH \rightarrow Na_2SO_3 + H_2O$
C	By reacting with o-Toluidine, Nitro-*o*-Toluidine (Dyestuff) is liberated.
D	By reacting with Lead Acetate (II), Lead sulphide is produced. $H_2S + Pd(CH_3COO)_2 \rightarrow PdS + 2CH_3COOH$
E	Potasium disulphide palladate (II) is reduced and Palladium is liberated. $CO + K_2Pd(SO_3)_2 \rightarrow K_2(SO_3)_2PdCO$ $K_2(SO_3)_2PdCO \rightarrow CO_2 + SO_2 + K_2SO_3$

3. DISCOLOURATION / QUALITATIVE CHART

CHART 1. INORGANIC GAS QUALITATIVE QUALITATIVE DETECTION CHART

Selection（Original Colour）					*1) Substances（＊2）
A（Pale purple）	B（Reddish purple）	C（White）	D（White）	E（Yellow）	
Yellow	——	——	——	——	1) Ammonia（5） 2) Amines（5）
	Yellow	——	——	——	3) SO_2（10） 4) Acetic Acid（15）
	Pink	——	——	——	5)Hydrogen chloride（20）
	White	Yellowish orange	——	——	6) Chlorine（5）
	——	Yellow	——	——	7) Nitrogen dioxide（5）
		——	Brown	——	8) H_2S（10）
			——	Pale blackish brown	9) CO（10）
				Dark black	10) Phosphine（2）
				Pale Yellowish green	11) Acetylene（10）
				Dark yellow	12)Methyl mercaptan（10）

NOTES：—

（1）—— ：Undiscoloured

（2）（*1）：Item No. for quick reference to details in CHART

（3）（*2）：Detectable gas concentration limit of the substance（Unit：ppm）
The discolouration length is approx.0.5 to 1.0 mm.

（4）Sybstance No.4）,11）and 12）are organic substances.

CHART 2. CHART FOR GAS-CONCENTRATION LEVEL AND DISCOLOURATION

INORGANIC SUBSTANCES	GAS CONCENTRATION (PPM)	SECTION				
		A (Pale purple)	B (Reddish purple)	C (White)	D (White)	E (Yellow)
1) Ammonia	50	Yellow (I)	——	——	——	——
	5	Yellow (III)	——	——	——	——
2) Amines	50	Yellow (I)	——	——	——	——
	5	Yellow (III)	——	——	——	——
3) Sulphur dioxide (SO_2)	50	——	Yellow (I)	——	——	——
	10	——	Yellow (III)	——	——	——
4) Acetic Acid	30	——	Yellow (II)	——	——	——
	15	——	Yellow (III)	——	——	——
5) Hydrogen chloride	50	——	Pink (II)	——	——	——
	20	——	Pink (III)	——	——	——
6) Chlorine	20	——	White (I)	Yellowish orange (I)	——	——
	5	——	White & Pale purple (II)	——	——	——
7) Nitrogen dioxide	20	——	——	Yellow (I)	——	——
	5	——	——	Yellow (I)	——	——
8) Hydrogen sulphide (H_2S)	100	——	——	——	Brown (II)	Brown (II)
	10	——	——	——	Brown (II)	——
9) Carbon monoxide (CO)	50	——	——	——	——	Blackish brown (I)
	10	——	——	——	——	Pale blackish brown (I)
10) Phosphine	30	——	——	——	——	Black (II)
	2	——	——	——	——	Pale black (III)
11) Acetylene	50	——	——	——	——	Yellowish green (I)
	10	——	——	——	——	Pale yellowish green (I)
12) Methyl mercaptan	100	——	——	——	——	Pale yellow (I)
	10	——	——	——	——	Dark yellow (II)

NOTES : —

1) ——: Undiscoloured

2) Discolouration level : I ; The whole layer is discoloured. II ; A half layer is discoloured. III ; Approx. 0.5-1.0mm of the layer is discoloured.

3) Sybstance No.4) ,11) and 12) are organic substances.

NON-DISCOLOURATION CONFIRMED SUBSTANCES

1) Hydrogen cyanide (HCN) 2) Carbon dioxide (CO_2) 3) Ethylene (Organic substance) 4) Nitric oxide (NO)