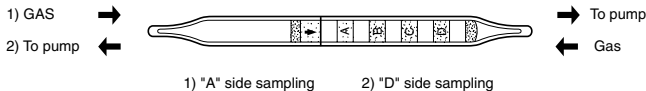


Tube No.
186B

ORGANIC GAS QUALITATIVE DETECTOR TUBE



Section	Original Colour
A	Orange
B	White
C	Yellow
D	Yellow

1. SPECIFICATIONS

- 1) Substances to be detected : Acetaldehyde, Actone, Acetylene, Aniline, Benzene, 1,3-Butadiene, Butane, 1-Butanol, Butyl acetate, Carbon disulphide, Cresol, Ethyl acetate, Ethyl amine, Ethyl benzene, Ethyl cellosolve, Ethylene, Ethylene oxide, Formaldehyde, Gasoline, Heptane, Hexane, Isopropyl, alcohol, Kerosine, Methyl alcohol, Methyl ethyl, ketone, Methyl isobutylketone, Methyl mercaptan, Pentane, Phenol, Propane, Styrene, Tetrachloroethylene, Tetrahydrofuran, Toluene, 1,1,1-Trichloroethane, Trichloroethylene, Vinyl chloride, Xylene, * Arsine, * Carbon monoxide and * Hydrogen sulphide (* : Inorganic gas)
- 2) Tube per box : 10tubes (5-time use)
- 3) Pump stroke : 1 (100mℓ) + 1 (100mℓ)
- 4) Sampling time : 30 + 30 seconds
- 5) Shelf life : 1 year
- 6) Operating temperature : 0 ~ 40 °C
- 7) Colour change : Refer to following "3. DISCOLOURATION / QUALITATUVE CHART"
- 8) Non-discolouration confirmed substances : Acetic acid, Carbon tetrachloride, Methane, Methyl bromide and Pyridine

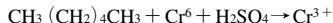
2. CHEMICAL REACTION

SECTION

A

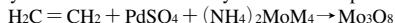
CHEMICAL REACTION PRINCIPLES

Chromium oxide is reduced.



B

Molybdate is reduced and Molybdeum blue is produced.



C

Iodine pent-oxide is reduced.



D

Phenol is oxidized and the polymer is produced.



3. DISCOLOURATION / QUALITATIVE CHART

CHART 1. ORGANIC GAS QUALITATIVE QUALITATIVE DETECTION CHART

"A" side sampling Selection	"D" side sampling Selection				* 1) Substances — * 2 (X) — — * 3 (X/Y) —	
	A (Orange)	B (White)	C (Yellow)	D (Yellow)		
Dark brown	Dark brown	—	—	—	1) Propane (100) 2) Butane (10) 3) Pentane (10) 4) Hexane (10) 5) Trichloroethylene (10) 6) Tetrachloroethylene (100) 7) Vinyl chloride (10)	
		White	—	8) Butadiene (100)		
	Greenish brown	—	Pale blue	—	9) Gasoline (0.1mg/ℓ)	
	—	Pale brown	—	—	—	10) Benzene (10/100) 11) Toluene (30/200) 12) Xylene (60/1,000) 13) Ethylene benzene (60/400)
			—	Pale blue	—	14) Ethylene (10) 15) Acetylene (10,000/100)
		—	Yellowish orange	—	16) Styrene (100)	
		—	—	—	17) Acetone (600) 18) Methyl ethyl ketone (100) 19) Ethyl acetate (600) 20) Butyl acetate (100) 21) Ethylene oxide (100) 22) Formaldehyde (600) 23) Kerosene (0.1mg/ℓ)	

“A” side sampling Selection	“D” side sampling Selection				* 1) Substances — * 2 (X) — — * 3 (X/Y) —
	A (Orange)	B (White)	C (Yellow)	D (Yellow)	
Greenish brown	Greenish brown	—	—	—	24) Heptane (10) 25) Carbon disulphide (100)
	—	—	Yellowish orange	—	26) Methyl mercaptan (100/20)
Green	—	—	Black	—	27) Methyl alcohol (100) 28) 1-Butanol (100) 29) Acetaldehyde (100) 30) Methyl isobutyl Ketone (100) 31) Ethyl cellosolve (100) 32) Tetrahydrofuran (100) 33) 1,1,1-Trichloroethane (1,000)
	—	—	—	—	34) Hydrogen sulphide (100,10) 35) Arsine (100,20)
—	—	—	Pale blue	—	36) Isopropyl alcohol (600)
			—	Pale brown	37) Carbon monoxide (100)
				Pale blue	38) Phenol (10) 39) Cresol (20)
				Bluish green	40) Aniline (40)
				Pale blue	41) Ethyl amine (100)

NOTES : —

(1) —: Undiscoloured

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

(3) * 2 (X) : Detectable gas concentration limit of the substance (Unit : ppm)

* 3 (X/Y) : “X” means detectable gas concentration limit (Unit : ppm) of “A” side sampling and “Y” means “D” side sampling's one.

(4) The discolouration length is approx.0.5 to 1.0 mm.

(5) Substance No.34) ,35) and 37) are inorganic gases.”

CHART 2. CHART FOR GAS-CONCENTRATION LEVEL AND DISCOLOURATION

ORGANIC SUBSTANCES	CONC. LEVEL	"A" side sampling SECTION			"D" side sampling SECTION		
		A (Orange)	B (White)	C (Yellow)	D (Yellow)		
1) Propane	H	Dark brown (I)	Dark brown (I)				
	M	Dark brown (I)	Dark brown (I)				
2) Butane	H	Dark brown (I)	Dark brown (I)				
	M	Dark brown (I)	Dark brown (I)				
	L	Dark brown (III)	Dark brown (III)				
3) Pentane	H	Greenish brown (I)	Greenish brown (I)				
	M	Dark brown (I)	Dark brown (I)				
	L	Dark brown (III)	Dark brown (III)				
4) Hexane	H	Greenish brown (I)	Greenish brown (I)				
	M	Dark brown (II)	Dark brown (II)				
	L	Dark brown (III)	Dark brown (III)				
5) Trichloroethylene	H	Dark brown (I)	Dark brown (I)				
	M	Dark brown (II)	Dark brown (II)				
	L	Dark brown (III)	Dark brown (III)				
6) Tetrachloroethylene	H	Dark brown (I)	Dark brown (I)				
	M	Dark brown (III)	Dark brown (III)				
	L						
7) Vinyl chloride	H	Dark brown (I)	Dark brown (I)				
	M	Dark brown (II)	Dark brown (II)				
	L	Dark brown (III)	Dark brown (III)				
8) Butadiene	H	Dark brown (II)	Dark brown (II)	Yellow orange (I)	Brown (I)		
	M	Dark brown (III)	Dark brown (III)		White (II)		
	L						
9) Gasoline	H	Dark brown (I)	Greenish brown (II)	Brown (I)	Pale blue (I)		
	M	Dark brown (III)	Greenish brown (III)	Brown (I)	Pale blue (I)		
	L	Dark brown (III)	Greenish brown (III)		Pale blue (II)		
10) Benzene	H	Dark brown (I)	Dark brown (III)	Pale brown (I)			
	M	Dark brown (II)		Pale brown (I)			
	L	Dark brown (III)					
11) Toluene	H	Dark brown (I)	Dark brown (III)	Brown (I)			
	M	Dark brown (III)		Pale brown (I)			
	L	Dark brown (III)					

ORGANIC SUBSTANCES	CONC. LEVEL	“A” side sampling		“D” side sampling			
		SECTION A (Orange)	SECTION A (Orange)	A (Orange)	B (White)	SECTION C (Yellow)	D (Yellow)
33) 1, 1, 1-Trichloroethane	H M	Greenish brown (III)	-----	-----	-----	-----	-----
34) Hydrogen sulphide (H ₂ S)	H	Green (II)	Green (II)	-----	-----	Black (II)	-----
	M L	Green (III)	-----	-----	-----	Black (II) Black (III)	-----
35) Arsine	M L	Green (II)	-----	-----	-----	Black (I) Black (II)	-----
36) Isopropyl alcohol	H M	Green (III)	-----	-----	-----	-----	-----
37) Carbon monoxide (CO)	H	-----	-----	-----	-----	Pale blue (II)	-----
	M L	-----	-----	-----	-----	Pale blue (III)	-----
38) Phenol	M L	-----	-----	-----	-----	-----	Pale brown (I) Pale brown (I)
39) Cresol	M L	-----	-----	-----	-----	-----	Pale brown (I) Pale brown (I)
40) Aniline	M L	-----	-----	-----	-----	-----	Bluish green (III) Bluish green (III)
41) Ethyl amine	H	-----	-----	-----	-----	-----	White (I)
	M L	-----	-----	-----	-----	-----	Pale blue (III)

NOTES : -----

- 1) ----- : Undiscoloured
- 2) CONC. LEVEL (Gas concentration level) : H ; approx. 1,000-5,000 ppm
M ; approx. 100-500 ppm
L ; approx. 10-50 ppm
- 3) Discolouration level : 1 ; The whole layer is discoloured.
2 ; A half layer is discoloured.
3 ; Approx.0.5-2.0 mm of the layer is discoloured.
- 4) Substance No.34) ,35) and 37) are inorganic substances.

NON-DISCOLOURATION CONFIRMED SUBSTANCES

- 1) Carbon tetrachloride
- 2) Pyridine
- 3) Methyl bromide
- 4) Acetic acid
- 5) Methane
- 6) Ethane