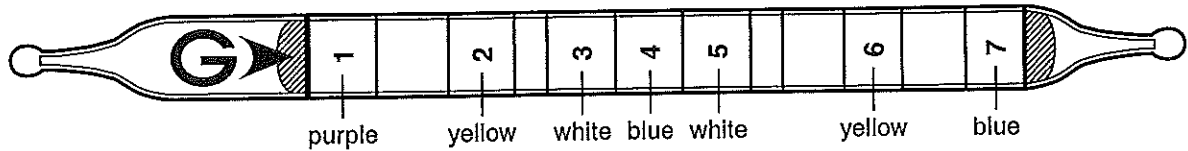


## ■ Polytec IV (No.27)



Detecting layer	No. Name (Original colour)	1	2
		NH <sub>3</sub> (Purple)	HCl (Yellow)
Reaction principle		$3\text{NH}_3 + \text{H}_3\text{PO}_4 \rightarrow (\text{NH}_4)_3\text{PO}_4$	$\text{HCl} + \text{Base} \rightarrow \text{Chloride}$
Substances & measurement results	Ammonia, Diethylamine ( $\geq 25$ ppm) ( $\geq 150$ ppm)	Yellow (Inlet) Yellow (Whole layer)	
	Hydrogen chloride ( $\geq 5$ ppm) ( $\geq 150$ ppm) (*)		Red (Inlet) Red (Whole layer)
	Hydrogen sulphide ( $\geq 10$ ppm) ( $\geq 120$ ppm) ( $\geq 200$ ppm) ( $\geq 800$ ppm)		
	Chlorine ( $\geq 5$ ppm) ( $\geq 20$ ppm) ( $\geq 50$ ppm)		
	Sulphur dioxide ( $\geq 10$ ppm) ( $\geq 50$ ppm)		
	Nitrogen dioxide ( $\geq 5$ ppm) ( $\geq 30$ ppm)		
	Acetylene ( $\geq 200$ ppm) ( $\geq 2,000$ ppm)		
	Carbon monoxide ( $\geq 25$ ppm) ( $\geq 100$ ppm)		
	Ethylene ( $\geq 10,000$ ppm)		
	Phosphine ( $\geq 50$ ppm) ( $\geq 700$ ppm)		
	Hydrogen ( $\geq 50,000$ ppm) ( $\geq 100,000$ ppm)		
	Methyl mercaptan ( $\geq 200$ ppm) ( $\geq 1,000$ ppm)		
	Propylene ( $\geq 10,000$ ppm) ( $\geq 50,000$ ppm)		
Carbon dioxide ( $\geq 5,000$ ppm) ( $\geq 20,000$ ppm)			

Parenthesized values after substances show their concentrations.

Number of pump strokes : n=1

Sampling time : 30 seconds per 1 pump stroke (100ml)

Shelf life : 1.5 years

Reaction principle : See the table below

	3 H <sub>2</sub> S (White)	4 SO <sub>2</sub> (Blue)	5 NO <sub>2</sub> (White)	6 CO (Yellow)	7 CO <sub>2</sub> (Blue)
	H <sub>2</sub> S + CuSO <sub>4</sub> → CuS	SO <sub>2</sub> + BaCl <sub>2</sub> + H <sub>2</sub> O → 2HCl HCl + Base → Chloride	NO <sub>2</sub> + C <sub>14</sub> H <sub>16</sub> N <sub>2</sub> → C <sub>14</sub> H <sub>14</sub> N <sub>2</sub> O	CO + Na <sub>2</sub> Pd(SO <sub>3</sub> ) <sub>2</sub> → Pd	CO <sub>2</sub> + 2KOH → K <sub>2</sub> CO <sub>3</sub>
	Brown (Inlet) } Brown (Whole layer)			— — Dark brown (Inlet) Dark brown (Whole layer)	
		Yellow (Inlet) } Yellow (Whole layer)	— Yellow (Inlet) Yellow (Whole layer)		
		Yellow (Inlet) Yellow (Whole layer)			
		} Purple (Whole layer)	Yellowish orange (Inlet) Yellowish orange (Whole layer)		
				Dark brown (Inlet) Dark brown (Whole layer)	
				Dark brown (Inlet) Dark brown (Whole layer)	
				Dark brown (Inlet)	
				Dark brown (Inlet) Dark brown (Whole layer)	
				Gray (Inlet) Dark brown (Whole layer)	
				Yellowish orange (Inlet) Yellowish orange (Whole layer)	
				Gray (Inlet) Gray (Whole layer)	
					Brown (Inlet) Brown (Whole layer)

(\*) At relative humidity of 50 %. The detecting limit is lowered at a lower humidity or increased at a higher humidity.