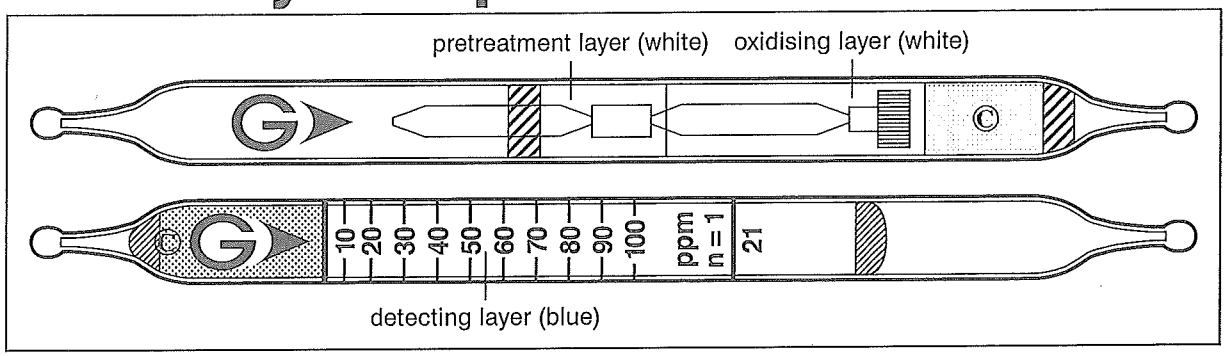
Carbonyl Sulphide COS No.21



Performance

When used, these tubes are to be connected. See page 2-3.

Measuring range	5 to 10 ppm	10 to 100 ppm	100 to 200 ppm
Number of pump strokes	2 (200 ml)	1 (100 ml)	1/2 (50 ml)
Correction factor	1/2	1	2
Sampling time	6 min	3 min	1.5 min

Detecting limit : 1 ppm (2 pump strokes)
Colour change : Blue → Yellow
Corrections for temperature & humidity : Unnecessary
Relative standard deviation : 10 %(for 10 to 30 ppm), 5 %(for 30 to 100 ppm)
Shelf life : 2 years (in the refrigerator)

Reaction principle

Pretreatment tube : $COS + I_2O_5 + H_2SO_4 \rightarrow SO_2 + CO_2$
Detector tube : $SO_2 + BaCl_2 + 2H_2O \rightarrow BaSO_3 + 2HCl$
$HCl + Base \rightarrow Chloride$

Possible coexisting substances and their interferences (NOTE : Page 2-5)

Substance	Concentration	Interference	Changes colour by itself to
Carbon disulphide		+	Yellow
Sulphur dioxide		+	Yellow
Butane	≧ 5000 ppm	−	No
Propane	≧ 5000 ppm	−	No

Up to 500 ppm of hydrogen sulphide is trapped in the white layer in the pretreatment tube.

Calibration gas generation

High pressure gas cylinder method

TLV-TWA : 5 ppm
Explosive range : 12.0 to 19 %