tert-Butyl Mercaptan $(CH_3)_3CSH$ and
Dimethyl Sulphide $(CH_3)_2S$ 　　　No.77

tbm tube (yellow)

dms tube (pink)
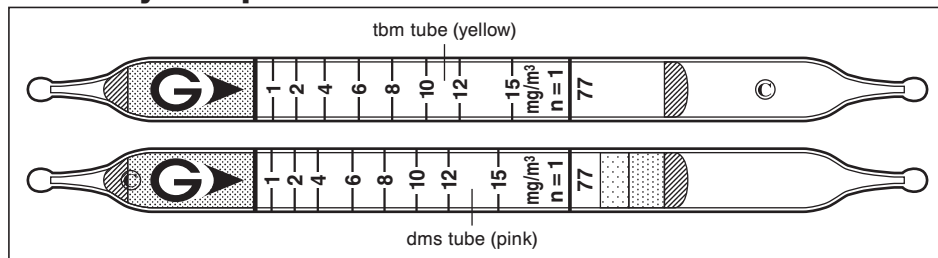
Detector tube	TBM Tube	DMS Tube
Measuring range	1-15 mg/m^3	1-15 mg/m^3
Number of pump stroke	1 （100 ml）	1 （100 ml）
Correction factor	1	1
Sampling time	2 min	
Detecting limit	0.2 mg/m^3（n=1）	0.2 mg/m^3（n=1）
Colour change	Yellow → Pink	Pink → Pale Yellow
Corrections for temperature & humidity	Temperature correction is necessary.	Unnecessary

Relative standard deviation : 10 %（for 1 to 5 mg/m^3）, 5 %（for 5 to 15 mg/m^3）
Shelf life : 　　　　　　　 2 years（in the refrigerator）

Reaction principle

tert-Butyl Mercaptan Tube
$(CH_3)_3CSH + HgCl_2 \rightarrow (CH_3)_3CSHgCl + HCl$
$HCl + Base \rightarrow$ Chloride compound
Dimethyl Sulphide Tube
$(CH_3)_2S + KMnO_4$（Pink） $\rightarrow$ Chemical reaction products（Pale yellow）
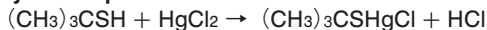
Possible coexisting substances and their interferences

For tert-Butyl Mercaptan Tube

Substance	Concentration	Interference	Changes colour by itself to
Mercaptans		+	Pink
Hydrogen sulphide		+	Pink

For Dimethyl Sulphide Tube

Substance	Concentration	Interference	Changes colour by itself to
Olefins		+	Pale yellow
Tetrahydrothiophene		+	Pale yellow

Hydrogen sulphide and Mercaptans do not give any effect on tube reading of DMS until the primary tube（TBM）become wholly discoloured.

Calibration gas generation

For tert-Butyl Mercaptan Tube : Diffusion tube method
For Dimethyl Sulphide Tube : 　Permeation tube method