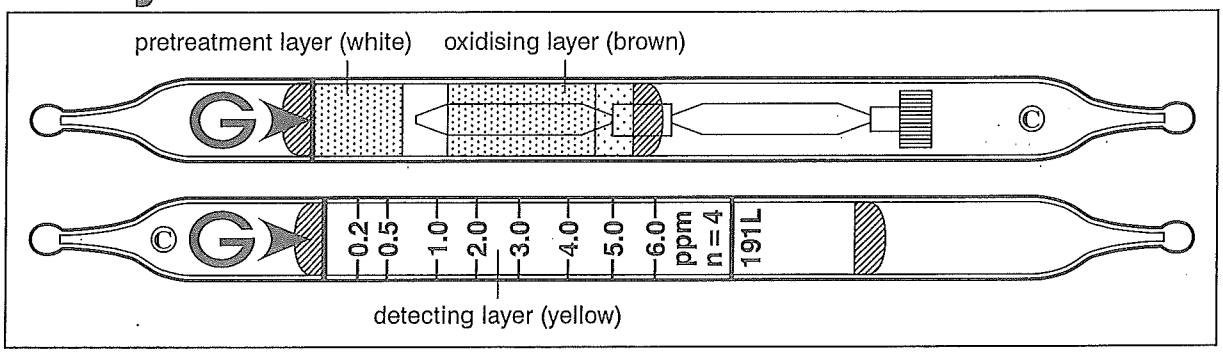
Acrylonitrile CH_2:CHCN No.191L



Performance

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

Measuring range	0.1 to 0.2 ppm	0.2 to 6.0 ppm	6.0 to 18.0 ppm
Number of pump strokes	4 (400 ml)	2 (200 ml)	1 (100 ml)
Correction factor	1/2	1	3
Sampling time	8 min	4 min	2 min

Detecting limit : 0.05 ppm (4 pump strokes)
Colour change : Yellow → Pink
Corrections for temperature & humidity : Unnecessary
Relative standard deviation : 10 % (for 0.2 to 2.0 ppm), 5 % (for 2.0 to 6.0 ppm)
Shelf life : 3 years

Reaction principle

Pretreatment tube : CH_2:CHCN + Cr^{6+} + H_2SO_4 → HCN
Detector tube : 2HCN + $HgCl_2$ → 2HCl
HCl + Base → Chloride

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

Substance	Concentration	Interference	Changes colour by itself to
Acetone cyanohydrin		+	Pink
Nitriles (≧ C3)		+	Pink
Alcohols, Esters, Ketones		No	No
Aromatic hydrocarbons		No	No
Hydrogen chloride		No	No
Hydrogen cyanide		No	No

Chlorine, hydrogen chloride, hydrogen cyanide, nitric acid and water vapour are trapped in the white layer in the pretreatment tube.

Other substances measurable with this detector tube

Substance	Correction	No. of pump strokes	Measuring range
Butyronitrile	Factor : 30	1	6 to 180 ppm
2-methyl-3-butenenitrile	Factor : 2.0	2	0.4 to 12.0 ppm
2-Pentenenitrile	Factor : 1.2	2	0.24 to 7.2 ppm
3-Pentenenitrile	Factor : 2.0	2	0.4 to 12.0 ppm

Calibration gas generation

Diffusion tube method

TLV-TWA : 2 ppm

Explosive range : 3 to 17 %