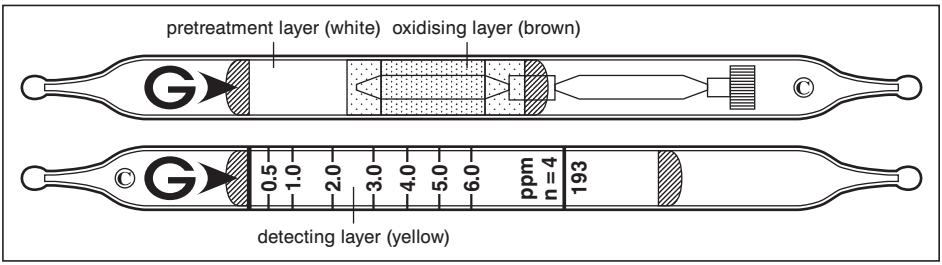
2-Pentenenitrile $CH_3CH_2CH{:}CHCN$ No.193



When used, these tubes are to be connected.

Performance

Measuring range	0.5 to 6.0 ppm	6.0 to 15.0 ppm
Number of pump strokes	4 (400 ml)	2 (200 ml)
Correction factor	1	2.5
Sampling time	8 min	4 min

Detecting limit : 0.1 ppm (4 pump strokes)
Colour change : Yellow → Red
Corrections for temperature & humidity : Temperature correction is necessary.
Relative standard deviation : 10 % (for 0.5 to 2 ppm), 5 % (for 2 to 6 ppm)
Shelf life : 3 years

Reaction principle

Pretreatment tube : $CH_3CH_2CH{:}CHCN + Cr^{6+} + H_2SO_4 \rightarrow HCN$
Detector tube : $2HCN + HgCl_2 \rightarrow 2HCl$
$HCl + Base \rightarrow Chloride$

Possible coexisting substances and their interferences

Substance	Concentration	Interference	Changes colour by itself to
Hydrogen chloride, Hydrogen cyanide		No	No
Acetone cyanohydrin		+	Red
Alcohols, Esters, Ketones	≧ 20 ppm	−	No
Nitriles (≧ C_3)		+	Red
Aromatic hydrocarbons	≧ 20 ppm	−	No

Dehumidifying agent removes humidity and acid gases.

Calibration gas generation

Diffusion tube method