Acrylonitrile CH_2:CHCN NO.191L

Performance

Measuring Range	0.1 to 0.2ppm	0.2 to 6.0 ppm	6.0 to 18.0 ppm
Number of Pump Stroke	4	2	1
Correction Factor	1/2	1	3
Sampling Time	3 minutes per pump stroke		
Detecting Limit	0.05 ppm (n=4)		
Colour Change	Yellow ⟶ Pink		
Reaction Principle	Acrylonitrile is decomposed by acid to liberate hydrogen cyanide which reacts with mercuric chloride to generate hydrogen chloride. The generated hydrogen chloride discolours indicator to pink. CH_2:CHCN + Cr^{6+} + H_2SO_4 ⟶ HCN 2HCN + $HgCl_2$ ⟶ 2HCl + Hg $(CN)_2$ HCl + Base ⟶ Chloride		
Coefficient of Variation	10% (for 0.25 to 1 ppm), 5% (for 1 to 6 ppm)		
Shelf Life	3 Years		
Corrections for temperature & humidity	Unnecessary		
Store the tubes at cool and dark place.			

Possible coexisting substances and their interferences

Substance	Concentration	Interference	Change colour by itself
Hydrogen chloride	-	No effect	No discoloration
Hydrogen cyanide	-	No effect	No discoloration
Nitriles (≧C3)	-	Plus error	Discolour pink stain
Acetone cyanohydrin	-	Plus error	Discolour pink stain
Alcohols, Esters, Ketones	-	No effect	No discoloration
Aromatic hydrocarbons	-	No effect	No discoloration

Other substance measurable with this detector tube

Substance	Correction Factor	No. of Pump Strokes	Measuring Range
n-Butyronitrile	30	1	6 to 180 ppm
2-methyl-3-butenenitrile	2.0	2	0.4 to 12 ppm
2-Pentenenitrile	1.2	2	0.24 to 7.2 ppm
3-Pentenenitrile	2.0	2	0.4 to 12 ppm

Calibration gas generation Diffusion tube method

TLV-TWA	TLV-STEL	Explosive range
2ppm	-	3 to 17%