

**Carbonyl sulfide**

COS

**no.21****Performance**

<b>Measuring Range</b>	5 to 10 ppm	10 to 100 ppm	100 to 200 ppm
<b>Number of Pump Strokes</b>	2	1	1/2
<b>Correction Factor</b>	1/2	1	2
<b>Sampling Time</b>	3 minutes per pump stroke		
<b>Detecting Limit</b>	1 ppm (n=2)		
<b>Color Change</b>	Blue → Yellow		
<b>Reaction Formula</b>	<p>COS is oxidized by iodine pentoxide and sulfuric acid to generate SO<sub>2</sub> in primary tube. The SO<sub>2</sub> reacts with barium chloride to liberate hydrogen chloride which discolors pH indicator (BCG) to yellow.</p> $\text{COS} + \text{I}_2\text{O}_5 + \text{H}_2\text{SO}_4 \longrightarrow \text{SO}_2 + \text{CO}_2 + \text{BaCl}_2 + \text{H}_2\text{O}$ $\longrightarrow \text{BaSO}_3 + \text{HCl}$		
<b>Coefficient of Variation</b>	10% (for 10 to 30 ppm), 5% (for 30 to 100 ppm)		
<b>Shelf Life</b>	2 Years		
<b>Corrections for temperature &amp; humidity</b>	Unnecessary		
<b>Store the tubes in the refrigerator to keep at 10°C (50°F) or below.</b>			

**Possible coexisting substances and their interferences (NOTE)**

<b>Substance</b>	<b>Concentration</b>	<b>Interference</b>	<b>Change color by itself</b>
Carbon disulfide	-	Plus error	Produce yellow stain
Sulfur dioxide	-	Plus error	Produce yellow stain
Butane	5000 ppm	Minus error	No discoloration
Propane	5000 ppm	Minus error	No discoloration

**Calibration gas generation** High pressure gas cylinder method

TLV-TWA	TLV-STEL	Explosive range
-	-	12 to 19%

Nextteq LLC – 8406 Benjamin Rd., Suite J, Tampa FL 33634, USA

Phone (toll free): 877-312-2333 Fax (toll free) 877-312-2444

Policy Statement and Legal Notices

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