



Dimethyl sulfide/Dimethyldisulfide — NCASI Technical Bulletin 656*

NCASI Technical Bulletin 656 tested Tedlar bags for sampling reduced sulfur gas in the workplace atmosphere. Dimethyldisulfide, dimethyl sulfide, hydrogen sulfide, and methyl mercaptan were collected and analyzed by GC-FPD. The Tedlar bags performed well for reduced sulfur gas sampling and produced good recoveries up to 7 days after sample collection.

Required Equipment:

1. An **air sampling pump** capable of sampling at the recommended flow rate with the sampling medium in line, such as:
 - SKC **Universal Sampler** with exhaust port fitting installed
 - SKC **Grab Air Sampler**
2. An **air flow calibrator**, such as:
 - Defender Primary Standard Calibrator Cat. No. 717 Series
3. SKC **Black Layered Tedlar Sampling Bag** Cat. No. 240-08B
4. SKC **Teflon® Tubing** Cat. No. 231-9-23

SKC Application Guides:

1. Sampling Train—Air Sample Bags, #1167
2. Calibrating a Pump Using an Electronic Calibrator, #1366

	STEL
Flow Rate	1000 ml/min
Sample Time	12 minutes
Air Volume	12 L

Sampling and Analysis:

1. Calibrate the pump to the desired flow rate. *Request SKC Application Guide #1366 for more information on calibrating a pump.*
2. For sampling, attach a piece of tubing to the hose/valve fitting of the bag. Connect the other end of the tubing to the outlet fitting of the pump. Place the pump in the work area to be monitored and open the valve on the bag. *Request SKC Application Guide #1167 for further information on setting up a sampling train using air sample bags.*
3. Sample at an accurately known flow rate for the recommended period of time.

4. At the end of the sampling period, turn off the pump, close the valve on the bag by turning it clockwise, and note the ending time. Remove the bag and record any pertinent sampling information.

5. Calibrate the pump with the representative sampling media in line to verify that the flow has not changed by more than 5%.

6. The sample can be either analyzed directly from the bag using a portable gas chromatograph or sent to a laboratory for analysis. Sample bags sent out for analysis should be packed loosely and padded to minimize the danger of being punctured during shipment. All pertinent sampling information should be included. Do not ship the bags by air unless they are stored in a pressurized cabin. Shipments of filled sample bags must comply with regulations concerning hazardous materials.

Storage:

Analyze within 7 days of collecting the sample to minimize loss of analyte by adsorption and permeation.

Analyzing Method:

Gas chromatography - Flame photometric detector (GC-FPD)

* "A Study of the Use of Tedlar Bag Sampling for the Determination of Reduced Sulfur Gas Concentrations in Workplace Atmospheres," Technical Bulletin Number 656, National Council of the Paper Industry for Air and Stream Improvement, December 1993.

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