



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

400 Seventh St., S.W.  
Washington, D.C. 20590

SEP 22 2000

Ref. No. 00-0182

Mr. John P. Seiler  
Physical and Toxic Agents Division  
U. S. Department of Labor  
Mine Safety & Health Administration  
P.O. Box 18233  
Pittsburgh, Pennsylvania 15236

Dear Mr. Seiler:

This is in reference to your letter dated June 20, 2000, requesting clarification on the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to the shipment of mine air samples from remote locations to your laboratory in Pittsburgh. Specifically, you propose to class and label your air samples as "Laboratory Samples- Non-hazardous."

According to your letter and enclosures, evacuated 50cc samples bottles are used to collect mine atmospheric air samples. The glass tip is broken then re-sealed with a plastic cap containing wax and shipped to the laboratory for analysis. An analysis is performed at the laboratory for oxygen, nitrogen, carbon dioxide, carbon monoxide, methane, hydrogen, acetylene, ethylene, ethane, and argon. Most of the time, the concentrations are around normal atmospheric conditions; however, during some mine fires, up to 60% methane can be found.

Under §173.22, it is the shipper's responsibility to properly classify a hazardous material. This Office does not perform that function. According to your laboratory analysis, your gas samples could contain as much as 60 % methane which is a Division 2.1 flammable gas, as well as other flammable gases such as acetylene, ethylene, and ethane; carbon monoxide which is a Division 2.3 poisonous gas; and Division 2.2 non-flammable gases such as carbon dioxide, oxygen, nitrogen, and argon. If your gas samples meet the hazard class defining criteria in Part 173, they are subject to the HMR. Based upon your hazard class determination, possible shipping descriptions from the Hazardous Materials Table for describing your gas samples are as follows:

Gas sample, non-pressurized, flammable, n.o.s., 2.1, UN 3167 or

Gas sample, non-pressurized, toxic, flammable, n.o.s., 2.3, UN 3168 or

Gas sample, non-pressurized, toxic, n.o.s., 2.3, UN 3169



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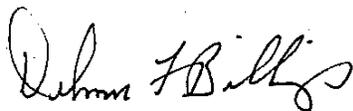
173.22

Section 173.306(a)(4) requires gas samples to be transported under the following conditions:

(1) a gas sample may only be transported as non-pressurized gas when its pressure corresponding to ambient atmospheric pressure in the container is not more than 105 kPa absolute (15.22 psia); (2) non-pressurized gases, toxic (or toxic and flammable) must be packed in hermetically sealed glass or metal inner packagings of not more than one L (0.3 gallons) overpacked in a strong outer packaging; (3) non-pressurized gases, flammable must be packed in hermetically sealed glass or metal inner packagings of not more than 2.5 L (0.5 gallons) overpacked in a strong outer packaging.

I hope this satisfies your inquiry.

Sincerely,



Delmer F. Billings  
Chief, Standards Development  
Office of Hazardous Materials Standards

U.S. Department of Labor

Mine Safety and Health Administration  
Pittsburgh Safety & Health Technology Center  
P.O. Box 18233  
Pittsburgh, PA 15236



PHYSICAL AND TOXIC AGENTS DIVISION

June 20, 2000

Mr. Edward Mazullo  
United States Department of Transportation  
Research and Special Programs Administration  
Office of Hazardous Materials Exemptions and Approvals  
400 7<sup>th</sup> Street, Southwest  
Washington, DC 20590

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Dear Mr. Mazullo:

This letter is in reference to my telephone conversation with Mr. James Jones during which we discussed problems we have been having shipping mine air sample bottles from remote locations to our laboratory in Pittsburgh.

For many years, the Mine Safety and Health Administration (MSHA) (and its predecessor, the United States Bureau of Mines) has been shipping sealed 50cc mine air sample bottles from the field to its laboratories for subsequent analysis using gas chromatographs. These samples, and their results, are very important during the course of a mine emergency operation or mine fire. Recently, some express shippers have held up samples because of questions on whether the samples are a hazardous material and fall under the hazardous materials transportation regulations. This has caused unacceptable time delays.

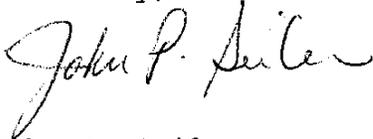
Evacuated 50cc sample bottles (as shown in Figure 1 enclosed) are used to collect mine atmospheric air samples. The glass tip is broken then re-sealed with a plastic cap containing wax and shipped to the laboratory for analysis. In the laboratory, the ampules are opened under a supersaturated salt water solution and a septum placed on the bottle (as shown in Figure 2 enclosed). A sample is pulled from the bottle and injected into a gas chromatograph for subsequent analysis. An analysis is performed for oxygen, nitrogen, carbon dioxide, carbon monoxide, methane, hydrogen, acetylene, ethylene, ethane, and argon. Most of the time, the concentrations hover around normal atmospheric conditions; however, during some mine fires, up to 60% methane can be found.

In our opinion, the air samples pose little hazard during transportation. The highest pressure differential should only be one atmosphere. We propose to label them as "Laboratory Samples - Non-hazardous."

Please examine our use of these sample bottles and inform us as to whether they are deemed covered under the appropriate regulations for shipment as a hazardous material requiring special packaging and labeling. If they do not, then perhaps you could provide us with a letter that we could forward to our shippers to indicate the minor nature shipment.

If you have any questions, please contact me at (412) 386-6980.

Sincerely,

A handwritten signature in cursive script that reads "John P. Seiler". The signature is written in dark ink and is positioned above the typed name.

John P. Seiler  
Acting Chief  
Physical and Toxic Agents Division

Enclosures