



U.S. Department  
of Transportation

Pipeline and Hazardous Materials  
Safety Administration

1200 New Jersey Ave., SE  
Washington, DC 20590

**JAN 30 2009**

Mr. Chris McKenzie  
S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, OH 43920

Ref. No.: 08-0293

Dear Mr. McKenzie:

This is in response to your letter dated November 19, 2008 and subsequent conversations with a member of my staff and a member of the Office of Hazardous Materials Technology, requesting clarification of the applicability of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) to ferrosilicon with between 50 and 75 percent silicon. Specifically, you request confirmation from this Office that the test report and supporting documentation submitted with your letter provides sufficient verification that the tested materials your company receives are not subject to the requirements of the HMR.

As provided in § 173.22, it is the shipper's responsibility to properly classify a hazardous material. Such determinations are not required to be verified by this Office. However, based on the information you provided, including a description of the particle size of the material being tested, it is our opinion that the product your company receives containing ferrosilicon with between 50 and 75 percent silicon, and specifically tested in accordance with the United Nations (UN) Manual of Tests and Criteria, does not meet the definition in § 173.124(c) for a Division 4.3 (Dangerous When Wet) material. Therefore, provided the material does not meet any other hazard class definition, the tested material is not subject to the HMR and not regulated for purposes of the transportation of hazardous materials in commerce.

I hope this information is helpful. Please contact us if you require additional assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Hattie L. Mitchell".

Hattie L. Mitchell  
Chief, Regulatory Review and Reinvention  
Office of Hazardous Materials Standards

Foster  
3173.124  
Definitions

08-0293

12/4/08

**Alston, Barbara <PHMSA>**

**From:** CHRIS MCKENZIE [cmckenzie@shbellco.com]  
**Sent:** Wednesday, November 19, 2008 9:43 AM  
**To:** Alston, Barbara <PHMSA>  
**Cc:** JOHN BEDECK  
**Subject:** RE: Ferro Silicon Testing

Barbara,

Good morning, do we have any information on our request for confirmation regarding the Ferro Silicon testing we submitted?

Regards,

*Chris McKenzie*  
S.H. Bell Company  
330-385-5083 ext. 203  
412-445-7962 cell

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**From:** barbara.alston@dot.gov [mailto:barbara.alston@dot.gov]  
**Sent:** Monday, November 10, 2008 4:06 PM  
**To:** CHRIS MCKENZIE  
**Subject:** RE: Ferro Silicon Testing

Good Afternoon Mr. McKenzie,  
Received your e-mail and the attachments, will print out and see what department can help you. We are closed on tomorrow (Veterans Day) in Washington DC. Thanks for your patience and have a nice day.

*Barbara Alston*  
*UniSpec Enterprises, Inc.*  
*US DOT/PHMSA Contractor*  
*THE RECORD CENTER*  
*HAZMAT/PHH30/PHH31/PHH32/PHH33*  
*1200 New Jersey Avenue SE/E21-202*  
*Washington, DC 20590*  
*Ph. 202-366-5046/Fx. 202-366-3753*  
*barbara.alston@dot.gov*  
*http://www.unispec1.com/*

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**From:** CHRIS MCKENZIE [mailto:cmckenzie@shbellco.com]  
**Sent:** Monday, November 10, 2008 3:47 PM  
**To:** Alston, Barbara <PHMSA>  
**Subject:** FW: Ferro Silicon Testing

**Alston, Barbara <PHMSA>**

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**From:** CHRIS MCKENZIE [cmckenzie@shbellco.com]  
**Sent:** Monday, November 10, 2008 3:47 PM  
**To:** Alston, Barbara <PHMSA>  
**Subject:** FW: Ferro Silicon Testing  
**Attachments:** FeSi Sample 1.pdf; FeSi Sample 2.pdf; FeSi Sample 3.pdf; FeSi Sample 4.pdf; FeSi Sample 5.pdf

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**From:** CHRIS MCKENZIE  
**Sent:** Monday, October 27, 2008 4:54 PM  
**To:** 'phmsa.hmhazmatsafety@dot.gov'  
**Cc:** JOHN BEDECK  
**Subject:** Ferro Silicon Testing

To Whom it may concern,

S.H. Bell Company submitted five samples of typical Ferro Silicon material handled at our East Liverpool and Chicago facilities for testing to determine the hazardous material status of each. The testing was conducted in accordance with UN Manual and Criteria Section 33.4.1.4.4.1. The testing results indicate the material does not meet the requirements of a Division 4.3 Dangerous when wet material. This testing was conducted at the recommendation of the U.S. Coast Guard in response to our request for a waiver from the requirements of part 105 of Title 33 Code of Federal Regulations (33 CFR part 105). The U.S. Coast Guard has indicated that written proof of the hazardous material status from the Department of Transportation Pipeline and Hazardous Materials Safety Administration (DOT PHMSA) is required for S.H. Bell Company to obtain the waiver.

Please review the attached testing results. The results of the testing conducted on the Ferro Silicon materials handled by S.H., Bell Company reveal the neither spontaneous ignition occurred, or that the rate of evolution of flammable gas exceeded the listed threshold. Therefore, we ask the DOT PHMSA to provide written confirmation that the Ferro Silicon materials do not exhibit characteristics of a material that is required to be classified in Division 4.3, Dangerous when Wet , 49 CFR 173.124(c) or as a cargo of particular hazard in 33 CFR part 126.3.

We appreciate your timely review and look forward to your response. If additional information is required please contact me directly.

Best Regards,  
*Chris McKenzie*  
S.H. Bell Company  
330-385-5083 ext. 203  
412-445-7962 cell

<<FeSi Sample 1.pdf>> <<FeSi Sample 2.pdf>> <<FeSi Sample 3.pdf>> <<FeSi Sample 4.pdf>> <<FeSi Sample 5.pdf>>

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**From:** CHRIS MCKENZIE  
**Sent:** Monday, October 27, 2008 4:54 PM  
**To:** 'phmsa.hmhzmsafety@dot.gov'  
**Cc:** JOHN BEDECK  
**Subject:** Ferro Silicon Testing

To Whom it may concern,

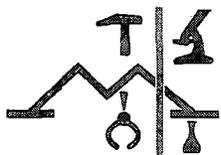
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We appreciate your timely review and look forward to your response. If additional information is required please contact me directly.

Best Regards,  
*Chris McKenzie*  
S.H. Bell Company  
330-385-5083 ext. 203  
412-445-7962 cell

<<FeSi Sample 1.pdf>> <<FeSi Sample 2.pdf>> <<FeSi Sample 3.pdf>> <<FeSi Sample 4.pdf>> <<FeSi Sample 5.pdf>>



# Andrew S. McCreath & Son, Inc.

1649 Bobali Drive  
Harrisburg, PA 17104  
Telephone: (717) 364-1440  
Fax: (717) 364-1640

ANALYTICAL AND CONSULTING CHEMISTS

BALTIMORE, MD ♦ CHICAGO, IL ♦ CLEVELAND, OH ♦ GARY, IN ♦ GHENT, KY ♦ KALININGRAD, RUSSIA  
KLAIPEDA, LITHUANIA ♦ NEW ORLEANS, LA ♦ PHILADELPHIA, PA ♦ PITTSBURGH, PA

August 8, 2008

S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, Ohio 43920  
Gentlemen:

The sample received from you on July 30, 2008 identified as: Ferro Silicon , Bag # 1, was tested in accordance with UN Manual of Tests and Criteria Section 33.4.1.4.4.1 (Dangerous when wet material). Results are as follows:-

## Spontaneous Ignition Test

Division 4.3 a (1)	No Spontaneous Ignition
Division 4.3 a (2)	No Spontaneous Ignition
Division 4.3 a (3)	No Spontaneous Ignition

## Gas Evolution Measurement

Total volume in ml each hour.

<u>Time Interval</u>	<u>Test 1</u>	<u>Test 2</u>
1 Hour	0.50 MI	0.00 MI
2 Hour	0.50 MI	0.00 MI
3 Hour	0.50 MI	0.00 MI
4 Hour	0.50 MI	0.50 MI
5 Hour	0.50 MI	0.50 MI
6 Hour	0.50 MI	0.50 MI
7 Hour	<u>0.50 MI</u>	<u>0.50 MI</u>
Total	0.50 MI	0.50 MI

Page No. 2  
August 8, 2008  
DOT Test  
FeSi - Bag #1

Maximum Rate - 0.05 liter/hour/kilogram

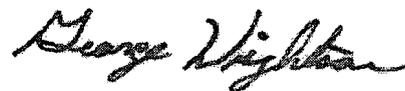
Average Rate - 0.007143liter/hour/kilogram

Based on the requirements found in Section 33.4.1.4.4.1 in Recommendations on the Transport of Dangerous Goods Rev. 4 publication by the United Nations, 2003 this material is not reactive enough to be classified in Division 4.3.

Lab #08073003

Yours very truly,

ANDREW S. McCREATH & SON, INC.

A handwritten signature in cursive script, appearing to read "George Wightman".



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August 8, 2008

S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, Ohio 43920  
Gentlemen:

The sample received from you on July 30, 2008 identified as: Ferro Silicon , Bag # 2, was tested in accordance with UN Manual of Tests and Criteria Section 33.4.1.4.4.1 (Dangerous when wet material). Results are as follows:

## Spontaneous Ignition Test

Division 4.3 a (1)	No Spontaneous Ignition
Division 4.3 a (2)	No Spontaneous Ignition
Division 4.3 a (3)	No Spontaneous Ignition

## Gas Evolution Measurement

Total volume in ml each hour.

<u>Time Interval</u>	<u>Test 1</u>	<u>Test 2</u>
1 Hour	0.00 MI	0.00 MI
2 Hour	0.00 MI	0.00 MI
3 Hour	0.00 MI	0.00 MI
4 Hour	0.00 MI	0.00 MI
5 Hour	0.00 MI	0.00 MI
6 Hour	0.00 MI	0.00 MI
7 Hour	0.00 <u>MI</u>	0.00 <u>MI</u>
Total	0.00 MI	0.00 MI

Page No. 2  
August 8, 2008  
DOT Test  
FeSi - Bag #2

Maximum Rate - 0.00 liter/hour/kilogram

Average Rate - 0.00 liter/hour/kilogram

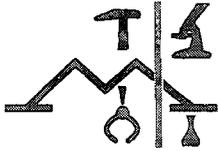
Based on the requirements found in Section 33.4.1.4.4.1 in Recommendations on the Transport of Dangerous Goods Rev. 4 publication by the United Nations, 2003 this material is not reactive enough to be classified in Division 4.3.

Lab #08073004

Yours very truly,

ANDREW S. McCREATH & SON, INC.

A handwritten signature in black ink, appearing to read "George Nighan". The signature is written in a cursive, flowing style.



# Andrew S. McCreath & Son, Inc.

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August 8, 2008

S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, Ohio 43920  
Gentlemen:

The sample received from you on July 30, 2008 identified as: Ferro Silicon , Bag # 3, was tested in accordance with UN Manual of Tests and Criteria Section 33.4.1.4.4.1 (Dangerous when wet material). Results are as follows:

### Spontaneous Ignition Test

Division 4.3 a (1)	No Spontaneous Ignition
Division 4.3 a (2)	No Spontaneous Ignition
Division 4.3 a (3)	No Spontaneous Ignition

### Gas Evolution Measurement

Total volume in ml each hour.

<u>Time Interval</u>	<u>Test 1</u>	<u>Test 2</u>
1 Hour	0.75 MI	1.00 MI
2 Hour	1.75 MI	1.00 MI
3 Hour	1.75 MI	1.50 MI
4 Hour	2.00 MI	2.00 MI
5 Hour	2.50 MI	3.00 MI
6 Hour	3.00 MI	3.50 MI
7 Hour	<u>4.00 MI</u>	<u>3.75 MI</u>
Total	4.00 MI	3.75 MI

Page No. 2  
August 8, 2008  
DOT Test  
FeSi – Bag #3

Maximum Rate - 0.10 liter/hour/kilogram

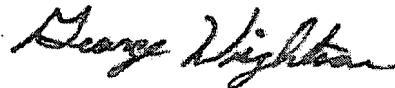
Average Rate - 0.055357 liter/hour/kilogram

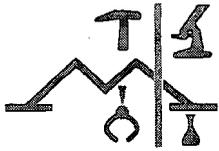
Based on the requirements found in Section 33.4.1.4.4.1 in Recommendations on the Transport of Dangerous Goods Rev. 4 publication by the United Nations, 2003 this material is not reactive enough to be classified in Division 4.3.

Lab #08073005

Yours very truly,

ANDREW S. McCREATH & SON, INC.

A handwritten signature in cursive script, appearing to read "George Wightman".



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August 8, 2008

S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, Ohio 43920  
Gentlemen:

The sample received from you on July 30, 2008 identified as: Ferro Silicon , Bag # 4, was tested in accordance with UN Manual of Tests and Criteria Section 33.4.1.4.4.1 (Dangerous when wet material). Results are as follows:

## Spontaneous Ignition Test

Division 4.3 a (1)	No Spontaneous Ignition
Division 4.3 a (2)	No Spontaneous Ignition
Division 4.3 a (3)	No Spontaneous Ignition

## Gas Evolution Measurement

Total volume in ml each hour.

<u>Time Interval</u>	<u>Test 1</u>	<u>Test 2</u>
1 Hour	0.00 MI	0.00 MI
2 Hour	0.00 MI	0.00 MI
3 Hour	0.00 MI	0.00 MI
4 Hour	0.00 MI	0.00 MI
5 Hour	0.00 MI	0.00 MI
6 Hour	0.00 MI	0.00 MI
7 Hour	0.00 <u>MI</u>	0.00 <u>MI</u>
Total	0.00 MI	0.00 MI

Page No. 2  
August 8, 2008  
DOT Test  
FeSi - Bag #4

Maximum Rate - 0.00 liter/hour/kilogram

Average Rate - 0.00 liter/hour/kilogram

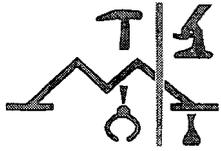
Based on the requirements found in Section 33.4.1.4.4.1 in Recommendations on the Transport of Dangerous Goods Rev. 4 publication by the United Nations, 2003 this material is not reactive enough to be classified in Division 4.3.

Lab #08073006

Yours very truly,

ANDREW S. McCREATH & SON, INC.

A handwritten signature in cursive script, appearing to read "George Wightman".



# Andrew S. McCreath & Son, Inc.

1649 Bobali Drive  
Harrisburg, PA 17104  
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KLAIPEDA, LITHUANIA ♦ NEW ORLEANS, LA ♦ PHILADELPHIA, PA ♦ PITTSBURGH, PA

August 8, 2008

S.H. Bell Company  
2217 Michigan Avenue  
East Liverpool, Ohio 43920  
Gentlemen:

The sample received from you on July 30, 2008 identified as: Ferro Silicon, Bag # 5, was tested in accordance with UN Manual of Tests and Criteria Section 33.4.1.4.4.1 (Dangerous when wet material). Results are as follows:

## Spontaneous Ignition Test

Division 4.3 a (1)	No Spontaneous Ignition
Division 4.3 a (2)	No Spontaneous Ignition
Division 4.3 a (3)	No Spontaneous Ignition

## Gas Evolution Measurement

Total volume in ml each hour.

<u>Time Interval</u>	<u>Test 1</u>	<u>Test 2</u>
1 Hour	0.00 MI	0.00 MI
2 Hour	0.00 MI	0.00 MI
3 Hour	1.00 MI	0.00 MI
4 Hour	1.25 MI	1.25 MI
5 Hour	1.25 MI	1.50 MI
6 Hour	1.25 MI	1.50 MI
7 Hour	2.00 <u>MI</u>	2.50 <u>MI</u>
Total	2.00 MI	2.50 MI

Page No. 2  
August 8, 2008  
DOT Test  
FeSi – Bag #5

Maximum Rate - 0.125 liter/hour/kilogram

Average Rate - 0.032143 liter/hour/kilogram

Based on the requirements found in Section 33.4.1.4.4.1 in Recommendations on the Transport of Dangerous Goods Rev. 4 publication by the United Nations, 2003 this material is not reactive enough to be classified in Division 4.3.

Lab #08073007

Yours very truly,

ANDREW S. McCREATH & SON, INC.

A handwritten signature in cursive script, appearing to read "George Nighan".

**S.H. BELL COMPANY**

# Memo

**To:** Glen Foster, Department of Transportation  
**From:** Chris McKenzie, S.H. Bell Co.  
**Date:** 1/26/2009  
**Re:** Ferro Silicon Size Description, Supplement to testing results.

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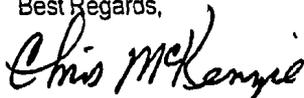
Glen,

The Ferro Silicon samples we submitted for testing ranged in size from a 2 inch piece down to dust. According to McCreath & Sons Laboratory where the samples were tested, each sample was individually crushed to 100 X 80 mesh size prior to testing. This size roughly equates to 1/100 of an inch to 1/80 of an inch.

The crushing ensures worst case scenario by maximizing the surface area tested. According to McCreath & Sons this is standard procedure for testing of this type.

Please contact me if additional information is needed.

Best Regards,



Chris McKenzie

S.H. Bell Company

330-385-5083 ext. 203

[cmckenzie@shbellco.com](mailto:cmckenzie@shbellco.com)

U.S. D.O.T. Ferro Silicon 1-26-09