



COLUMBIA STEEL CASTING CO., INC.

Phone 503-286-0685
Toll Free 800-547-9471
Customer Service Ext. 257
Fax 503-286-1743

P.O. Box 83095
Portland, OR 97283-0095
U.S.A.

service@columbiasteel.com
www.columbiasteel.com

November 6, 2020

Ms. Kenzie Billings, P.E.
Air Toxics Project Manager
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Re: Cleaner Air Oregon Source Testing – Baghouse 26
Columbia Steel Casting Co., Inc., Portland, Oregon

Dear Ms. Billings,

As part of the ongoing efforts related to Cleaner Air Oregon, Columbia Steel Casting Co., Inc. (Columbia Steel) submitted a Source Test Protocol to the Oregon Department of Environmental Quality (DEQ) on August 18, 2020, which was approved by DEQ on September 9, 2020 with a requirement to complete the testing by October 16, 2020. On September 25, 2020 DEQ approved an extension of the testing, which is now scheduled to be completed during December 7, 2020 through December 18, 2020.

The approved Source Test Protocol included the testing of Baghouse 26, which collects emissions from two Rotoblast shot blasting stations within the main foundry building. The shot blasting is a dry abrasive process using steel shot material. The source test parameters were to include select metals using Method 29, as well as hexavalent chromium using Method 0061, using three 720-minute test runs.

Columbia Steel is requesting the removal of Baghouse 26 from the Source Test Protocol. The shot blasting equipment is an episodic source running intermittently for blasting cast parts. The typical equipment run times are seven hours per week with only approximately four minutes per cycle, which includes two minutes of shot blasting and two minutes of dust collection from the chambers. Note that the process is intermittent with short run times regardless of the level of production. Even with the long source testing run times of 720 minutes per test run, each test run would only capture approximately 80 minutes of operating time and the remaining test run time (over 600 minutes) would be sampling ambient air. As such, testing Baghouse 26 would not provide meaningful emission rate data for the purposes of the Cleaner Air Oregon air toxics emission inventory and subsequent risk assessment.

November 6, 2020

Page 2

Columbia Steel proposes to calculate Baghouse 26 toxic emissions based on the particulate matter (PM) emission rate documented in the Air Contaminant Discharge Permit (ACDP) and the total metals present in the baghouse dust. The dust from the baghouse is collected for disposal, and periodically a laboratory analysis is completed for the purpose of waste characterization. The most recent analytical data is based on an August 2020 sampling event. Columbia Steel proposes to complete additional sampling prior to completion of the air toxics emission inventory with annual sampling thereafter. An example calculation is provided below:

$$\text{Emission factor (lb toxic/ton metal)} = (\text{PM emission factor [lb PM/ton metal]} \times (\text{toxic concentration in baghouse dust [mg toxic/kg PM]})) / (453,592 \text{ mg/lb}) / (2.2 \text{ lb/kg})$$

AP-42 Section 13.2.6 (Abrasive Blasting) states that “hazardous air pollutants, typically particulate metals, are emitted from some abrasive blasting operations. These emissions are dependent on both the abrasive material and the targeted surface.” The shot blast material (see attached Safety Data Sheet from Metaltec Steel Abrasive Company) contains 1.00-1.35% manganese. The remaining metals in the stack emissions is expected to be based on the quantity of metal in the targeted surface of the cast parts. Because the steel shot contains manganese, which is a toxic metal, using feedstock composition of the cast parts to determine stack emissions will not adequately capture the total metal emissions present. The concentration of metals in the baghouse dust will be more representative of the concentration of metals in the stack emissions. Note that this approach is acceptable because the dust is created in an abrasive process and does not include metal oxide formation or vaporization of metals.

If you have any questions, please contact Bruce Schacht at (503) 286-0685, x286 or Sarah Kronholm from SLR International Corporation at (503) 709-7039.

Sincerely,

COLUMBIA STEEL CASTING CO., INC.



Bruce Schacht
Environmental Engineer

Enc: Safety Data Sheet

Cc: Thomas Rhodes, Oregon Department of Environmental Quality
David Graiver, Oregon Department of Environmental Quality
Martha Cox, Columbia Steel Casting Co., Inc.
Dave Faust, Columbia Steel Casting Co., Inc.
Sarah Kronholm, SLR International Corporation
Brien Flanagan, Schwabe Williamson and Wyatt

SAFETY DATA SHEET

Prepared in accordance with
OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))



Section 1. Product Information and Company Identification

Product: Low Carbon Cast Steel Shot
Bainite Cast Steel Shot
Product Use: Steel Abrasive Blasting and Shot Peening
Company: Metaltec Steel Abrasive Company
41155 Joy Road
Canton, MI 48187
USA
Phone: 734-459-7900
Fax: 734-459-7907
Emergency Phone: 734-459-7900

Section 2. Hazards

This product is chemically inert and does not pose any specific risk to people or the environment. This product does not contain any radioactive elements. Compounds, processing conditions and products that are created during use can be hazardous. Ensure that the proper instructions have been issued and that all precautions for working with steel shot have been met.

Section 3. Chemical Composition

Element	Concentration	CAS
C	0.10-0.15%	7440-44-0
Mn	1.00-1.35%	7439-96-5
Si	0.10-0.25%	7440-21-3
Fe	>96.00%	1309-37-1
P	0.035% max	7723-14-0
S	0.035% max	7704-34-9

Section 4. First Aid Measures

Eye Contact: Flush with running water to remove particles. Seek additional medical attention if necessary.
Skin Contact: Brush off excess dust, wash area with soap and water.
Inhalation: Remove to fresh air. Seek medical attention
Ingestion: Seek medical help if large quantities of material have been ingested.

Section 5. Fire-fighting Strategies

These products are non-flammable and do not react to the use of water or other materials used for extinguishing fire. Fine metal dust that is created as a waste stream and/or contaminants that are removed during use may pose a risk of fire or explosion.

SAFETY DATA SHEET

Prepared in accordance with
OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))



Section 6. Accidental Release Measures

Cast Steel Shot spilled or leaked onto floors can cause hazardous walking conditions. Spills or leaks should be vacuumed or swept from working areas. When cleaning up large quantities of dust, a NIOSH approved respirator should be worn. Spilled Cast Steel Shot can be reused or disposed of as a non-hazardous waste. Collected dust from blast cleaning or shot peening operations always contain contaminants from the surface of the parts being processed, and therefore the dust may be classified as a hazardous waste and, as such, must be disposed of according to appropriate Local, State or Federal regulations.

Section 7. Handling and Storage

Store material away from incompatible materials and keep dust away from sources of ignition. Keep dry to reduce rusting. Observe maximum floor loading limitations.

Section 8. Exposure Controls/Personal Protection

- Ventilation: General and local exhaust ventilation should be provided.
- Respiratory Protection: NIOSH approved respirator should be worn.
- Eye Protection: Approved safety glasses with side shields should be worn at all times. Safety eyewash stations should be provided in close proximity to the work area.
- Other Protection Equipment: None required.

Section 9. Physical and Chemical Properties

Melting Point:	1371- 1482C	Vapor Pressure:	not applicable
Evaporation Rate:	not applicable	Vapor Density:	not applicable
Boiling Point:	2850 - 3150C	% Solid by Weight:	100%
Solubility in Water:	not applicable	pH:	not applicable
Flash Point:	not applicable	Auto Ignition Temp	930C
Appearance and Odor:	Steel shot is near spherical in shape and light gray to silver in color. Cast Steel Shot will not burn or explode		

SAFETY DATA SHEET

Prepared in accordance with
OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))



Section 10. Stability and Reactivity

Under normal working conditions, the product is stable and does not present any danger for hazardous reactions to occur.

Section 11. Toxicological Information

Primary Routes of Entry: Inhalation of dust or fumes created during use, or dust particulate in eyes.

Overexposure to dust containing the component elements of cast steel shot may cause skin, nose, mouth, and eye irritation.

Section 12. Ecological Information

Hazardous Decomposition Products: None

Cast Steel Shot will wear away at a controlled rate through normal use.

Section 13. Disposal Considerations

Spilled Cast Steel Shot can be reused or disposed of as a non-hazardous waste. Collected dust from blast cleaning or shot peening operations always contain contaminants from the surface of the parts being processed, and therefore the dust may be classified as a hazardous waste and, as such, must be disposed of according to appropriate Local, State or Federal regulations.

Section 14. Transport Information

No special conditions apply.

Section 15. Regulatory Information

No regulations apply.

Section 16. Other Information

The company has no control over this product or its use after it leaves our facility. The Company assumes no liability for loss or damage from the proper or improper use of this product. The information presented here has been compiled from sources considered to be reliable and accurate to the best of our knowledge and belief, but is not guaranteed to be so.

