

# GUARDIAN SYSTEMS, INC.

1108 Ashville Road  
P.O. Box 190  
Leeds, Alabama 35094

Telephone 205/699-6647  
Fax 205/699-3882

Page 1 of 2

American Rockwool Manufacturing, LLC  
1316 Village Creek Drive, Suite 600  
Plano, TX 75093

Report Date: 12/21/2016  
Receive Date: 12/08/2016  
Receive Time: 8:45

Attention: Mr. James M. Diebel

Control No.: 1612-00172 Sample # 001  
Sampler: GM  
Sample ID: Cryowool

Sample Date: 12/08/2016  
Sample Time: 8:30

## Laboratory Certificate

PARAMETER	RESULTS	UNITS	ANALYST	DATE	TIME
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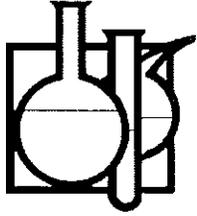
### Ignited as Oxide

Aluminum Oxide, ignited	19.7	Weight %	OS	12/20/2016	16:00
Barium Oxide, ignited	<0.05	Weight %	OS	12/20/2016	16:00
Calcium Oxide, ignited	18.50	Weight %	OS	12/20/2016	16:00
Iron Oxide, ignited	6.82	Weight %	OS	12/20/2016	16:00
Magnesium Oxide, ignited	8.30	Weight %	OS	12/20/2016	16:00
Phosphorus Oxide, ignited	0.21	Weight %	OS	12/20/2016	16:00
Potassium Oxide, ignited	0.65	Weight %	OS	12/20/2016	16:00
Silicon Oxide, ignited	43.08	Weight %	OS	12/20/2016	16:00
Sodium Oxide, ignited	2.10	Weight %	OS	12/20/2016	16:00
Sulfur Trioxide, ignited	0.25	Weight %	OS	12/20/2016	16:00
Strontium Oxide, ignited	0.092	Weight %	OS	12/20/2016	16:00
Titanium Oxide, ignited	0.91	Weight %	OS	12/20/2016	16:00

### Ignited as Element

Sulfur, ignited	0.10	Weight %	OS	12/20/2016	16:00
Sodium, ignited	1.56	Weight %	OS	12/20/2016	16:00
Titanium, ignited	0.55	Weight %	OS	12/20/2016	16:00
Strontium, ignited	0.076	Weight %	OS	12/20/2016	16:00
Aluminum, ignited	10.09	Weight %	OS	12/20/2016	16:00
Barium, ignited	<0.05	Weight %	OS	12/20/2016	16:00
Calcium, ignited	13.22	Weight %	OS	12/20/2016	16:00
Iron, ignited	4.77	Weight %	OS	12/20/2016	16:00
Magnesium, ignited	5.01	Weight %	OS	12/20/2016	16:00
Phosphorus, ignited	0.09	Weight %	OS	12/20/2016	16:00
Potassium, ignited	0.54	Weight %	OS	12/20/2016	16:00
Silicon, ignited	20.14	Weight %	OS	12/20/2016	16:00

This Certificate Continued on Next Page



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Approved By: Sara Bennett

### METHOD REFERENCES

1. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-20, revised March 1983, August 1993, May 1994
2. Standard Methods for the Examination of Water and Waste Water, 18<sup>th</sup>, 19<sup>th</sup>, 20<sup>th</sup>, 22<sup>nd</sup> Edition, 2012
3. Test Methods for Evaluating Solid Wastes Physical Chemical Method SW-846, 3<sup>rd</sup> Edition, Updated IV Decembrer 1996
4. 1987 ASTM Annual Standards
5. Code of Federal Regulations, Title 40, Part 136, Appendix A, Revised July 1995
6. Methods for the Determination of Organic Compounds in Drinking Water, EPA 600/4-8/039, Revised July 1991, August 1995
7. NIOSH Manual of Analytical Methods, 4<sup>th</sup> Edition, May 1996

Guardian Systems, Inc.