

10X ENGINEERED MATERIALS HEALTH AND SAFETY ANALYSIS DATA

10X Abrasives are SSPC-AB 1 Certified

10X Engineered Materials abrasive products are approved by the California Air Resources Board (CARB) and certified under Section 4 of the Society for Protective Coatings abrasive standard AB 1 (SSPC-AB 1) for nonmetallic abrasives (certification letter attached). SSPC-AB 1 certification requires that safety and quality testing be performed and attested by approved third-party laboratories and that results be submitted to SSPC on laboratory letterhead. The data presented in this document were produced by KTA-Tator, Inc and the laboratories that KTA-Tator selects for a subset of the required analyses. **Free silica and beryllium have never been detected in samples of 10X abrasives independently analyzed by certified third-party laboratories. The products are also virtually free of hazardous metals.**

Toxicity Characteristic Leaching Procedure (TCLP)

Schneider Laboratories Global, Inc. in Richmond, VA used EPA Toxicity Characteristic Leaching Procedure Method 1311 to measure levels of toxic metals in samples of 10X abrasives (report attached). Virtually no hazardous metals were detected in dry samples analyzed for Total Threshold Limit Concentration (TTL), as well as in wet extraction leachate samples analyzed for Soluble Threshold Limit Concentration (STLC). Three metals (Barium, Vanadium, and Zinc) were barely measurable at levels orders of magnitude below regulatory limits. Provided 10X abrasives are not contaminated with other materials in the work environment (coatings, substrate material, other abrasives, etc.), they can be safely disposed of by conventional methods, left on the ground, or disposed of in water. **10X abrasives will not contribute to health hazards associated with respirable free silica or beryllium.**

Substance	Total Threshold Limit Concentration (TTL)			Soluble Threshold Limit Concentration (STLC)		
	TTL Analysis Reporting Limit (mg/kg)	TTL Regulatory Limit (mg/kg)	10X TTL Level (mg/kg)	STLC Analysis Reporting Limit (mg/L)	STLC Regulatory Limit (mg/L)	10X STLC Level (mg/L)
Antimony	3.85	500	Not Detected	0.0800	15	Not Detected
Arsenic	3.85	500	Not Detected	0.0800	5	Not Detected
Barium	3.85	10,000	164	0.0800	100	2.74
Beryllium	3.85	75	Not Detected	0.0800	0.75	Not Detected
Cadmium	3.85	100	Not Detected	0.0800	1	Not Detected
Chromium (VI)	0.79	500	Not Detected	0.0200	5	Not Detected
Chromium (III)	9.63	2,500	Not Detected	0.200	5	Not Detected
Cobalt	3.85	8,000	Not Detected	0.0800	80	Not Detected
Copper	9.63	2,500	Not Detected	0.200	25	Not Detected
Fluoride	3.98	18,000	Not Detected	1.00	180	Not Detected
Lead	3.85	1,000	Not Detected	0.0800	5	Not Detected
Mercury	0.121	20	Not Detected	0.0005	0.2	Not Detected
Molybdenum	3.85	3,500	Not Detected	0.0800	350	Not Detected
Nickel	3.85	2,000	Not Detected	0.0800	20	Not Detected
Selenium	3.85	100	Not Detected	0.0800	1	Not Detected
Silver	3.85	500	Not Detected	0.0800	5	Not Detected
Thallium	3.85	700	Not Detected	0.0800	7	Not Detected
Vanadium	3.85	2,400	10.5	0.0800	24	0.121
Zinc	9.63	5,000	Not Detected	0.200	250	0.589

Crystalline Silica Content

Crystalline silica was not detectable in abrasive samples using NIOSH Method 7500 by Clark Testing of Jefferson Hills, PA (report attached).

Measurement	Analysis Reporting Limit	SSPC-AB 1 Class A Limit	10X Results
Cristobalite	0.1%	1.0%	Not Detected
Quartz	0.1%	1.0%	Not Detected
Tridymite	0.1%	1.0%	Not Detected

No warranty, express or implied, is made for use of this information. 10X Engineered Materials liability is limited to replacement of defective products.



www.sspc.org 800 Trumbull Drive Pittsburgh, PA 15205 P: 412.281.2331 T: 877.281.7772 F: 412.444.3591

October 6, 2020

Mr. Nathaniel Griffin
10X Engineered Materials, LLC
1162 Manchester Ave.
Wabash, IN 46992

Dear Mr. Griffin:

Based on our review of the results of independent third-party laboratory analyses submitted by 10X Engineered Materials LLC, SSPC is pleased to confirm that the products listed below have been certified to meet the requirements for a Type II, Class A abrasive as defined in SSPC-AB 1, Mineral and Slag Abrasives. These products have also been qualified as meeting requirements of SSPC-AB 1, Appendix B.

Products	SSPC Profile Grades	Certification Expires
10X abrasive media 20/40	Grade 3, Grade 4	October 1, 2022
10X abrasive media 20/70	Grade 3, Grade 4	October 1, 2022
10X abrasive media 40/70	Grade 3	October 1, 2022
10X abrasive media 70/100	Grade 2, Grade 3	October 1, 2022

Processing Plant: Wabash, Indiana

Contact Information:

Mr. Nathaniel Griffin
10X Engineered Materials, LLC
1162 Manchester Ave.
Wabash, IN 46992
614-596-1533
Email: Nathaniel.Griffin@10xem.com

SSPC will list the above products on our website as qualified products.

Sincerely,

John T. Whalen
Director of Technical Services



Customer: KTA-Tator, Inc. (1861)
Address: 115 Technology Drive
Pittsburgh, PA 15275

Order #: 376451

Matrix Bulk, STLC
Received 07/06/20
Reported 07/13/20

Attn:
Project: 10X Engineered Materials
Location: Pittsburgh
Number: 400379

PO Number: 20PO-312

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
376451-001	400379-3	Abrasive Media 40/70					
Metals Analysis							
Antimony		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Arsenic		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Barium		EPA 6010D / 3050B	164	3.85	mg/kg	07/08/20	BRW
Beryllium		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Cadmium		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Chromium		EPA 6010D / 3050B	<9.64	9.63	mg/kg	07/08/20	BRW
Cobalt		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Copper		EPA 6010D / 3050B	<9.64	9.63	mg/kg	07/08/20	BRW
Lead		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Molybdenum		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Nickel		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Selenium		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Silver		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Thallium		EPA 6010D / 3050B	<3.86	3.85	mg/kg	07/08/20	BRW
Vanadium		EPA 6010D / 3050B	10.5	3.85	mg/kg	07/08/20	BRW
Zinc		EPA 6010D / 3050B	<9.64	9.63	mg/kg	07/08/20	BRW
The Matrix Spike (MS) failed for barium. The MS is a duplicate sample spiked with Barium. The Matrix Spike (MS) result is outside acceptance limits due to the inhomogeneity of the sample. Sample results are not affected.							
Chromium (VI)		EPA 7196A / 3060	<0.790	0.790	mg/kg	07/07/20	SA
Mercury		EPA 7471A	<0.122	0.121	mg/kg	07/07/20	SA
Mercury		EPA 7470A / 1311	<0.0005	0.0005	mg/L	07/07/20	SA
Arsenic		EPA 6010D / 1311	<0.0800	0.0800	mg/L	07/07/20	DLJ
Barium		EPA 6010D / 1311	0.670	0.0800	mg/L	07/07/20	DLJ
Cadmium		EPA 6010D / 1311	<0.0800	0.0800	mg/L	07/07/20	DLJ
Chromium		EPA 6010D / 1311	<0.200	0.200	mg/L	07/07/20	DLJ
Lead		EPA 6010D / 1311	<0.0800	0.0800	mg/L	07/07/20	DLJ
Selenium		EPA 6010D / 1311	<0.0800	0.0800	mg/L	07/07/20	DLJ

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.



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Address: 115 Technology Drive
Pittsburgh, PA 15275

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Location: Pittsburgh
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PO Number: 20PO-312

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
376451-001	400379-3	Abrasive Media 40/70					
Silver		EPA 6010D / 1311	<0.0800	0.0800	mg/L	07/07/20	DLJ
Wet Chemistry Analysis							
Fluoride		SW846 9056M	<3.99	3.98	mg/kg	07/07/20	BHH
376451-002	400379-3	Abrasive Media 40/70					
Metals Analysis							
Antimony		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Arsenic		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Barium		EPA 6010D / WET Method	2.74	0.0800	mg/L	07/10/20	KM
Beryllium		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Cadmium		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Chromium		EPA 6010D / WET Method	<0.200	0.200	mg/L	07/10/20	KM
Cobalt		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Copper		EPA 6010D / WET Method	<0.200	0.200	mg/L	07/10/20	KM
Lead		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Molybdenum		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Nickel		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Selenium		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Silver		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Thallium		EPA 6010D / WET Method	<0.0800	0.0800	mg/L	07/10/20	KM
Vanadium		EPA 6010D / WET Method	0.121	0.0800	mg/L	07/10/20	KM
Zinc		EPA 6010D / WET Method	0.589	0.200	mg/L	07/10/20	KM
MS failed for all analytes except As, Hg, & Se due to matrix interference. Results are accurate and unaffected.							
Chromium (VI)		EPA 7196A / WET Method	<0.0200	0.0200	mg/L	07/10/20	KM
The matrix spike and the matrix spike duplicate failed due to interference.							
Mercury		EPA 7470A / 3005	<0.0005	0.0005	mg/L	07/09/20	SA
Wet Chemistry Analysis							
Fluoride		EPA 300.0 Rev 2.1	<1.00	1.00	mg/L	07/08/20	BHH
MS for STLC failed due to possible interference from the extraction fluid.							

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.



Analysis Report

Schneider Laboratories Global, Inc

2512 W. Cary Street • Richmond, Virginia • 23220-5117
804-353-6778 • 800-785-LABS (5227) • Fax 804-359-1475

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Address: 115 Technology Drive
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Order #:	376451
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Attn:
Project: 10X Engineered Materials
Location: Pittsburgh
Number: 400379

PO Number: 20PO-312

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					
376451-07/13/20 03:42 PM							

Reviewed By: **Jennifer Lee**
Manager

EPA TCLP Regulatory Limits

Parameter	Reg. Limit	Unit
Arsenic	5.00	mg/L
Barium	100	mg/L
Cadmium	1.00	mg/L
Chromium	5.00	mg/L
Lead	5.00	mg/L
Mercury	0.200	mg/L
Selenium	1.00	mg/L
Silver	5.00	mg/L

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.



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Attn:
Project: 10X Engineered Materials
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Number: 400379

PO Number: 20PO-312

Sample ID	Cust. Sample ID	Location	Result	RL*	Units	Analysis Date	Analyst
Parameter		Method					

State Certifications

Method	Parameter	Pennsylvania	Virginia
EPA 300.0 Rev 2.1	Fluoride	Not Certified	Not Certified
EPA 6010D	Antimony	ELAP Certified	VELAP Certified
EPA 6010D	Arsenic	ELAP Certified	VELAP Certified
EPA 6010D	Barium	ELAP Certified	VELAP Certified
EPA 6010D	Beryllium	Not Certified	VELAP Certified
EPA 6010D	Cadmium	ELAP Certified	VELAP Certified
EPA 6010D	Chromium	ELAP Certified	VELAP Certified
EPA 6010D	Cobalt	Not Certified	VELAP Certified
EPA 6010D	Copper	Not Certified	VELAP Certified
EPA 6010D	Lead	ELAP Certified	VELAP Certified
EPA 6010D	Molybdenum	Not Certified	VELAP Certified
EPA 6010D	Nickel	ELAP Certified	VELAP Certified
EPA 6010D	Selenium	ELAP Certified	VELAP Certified
EPA 6010D	Silver	ELAP Certified	VELAP Certified
EPA 6010D	Thallium	Not Certified	VELAP Certified
EPA 6010D	Vanadium	Not Certified	VELAP Certified
EPA 6010D	Zinc	Not Certified	VELAP Certified
EPA 7196A	Chromium (VI)	Not Certified	VELAP Certified
EPA 7470A	Mercury	ELAP Certified	VELAP Certified
EPA 7471A	Mercury	ELAP Certified	VELAP Certified
SW846 9056M	Fluoride	Not Certified	Not Certified

State	Certificate Number
Pennsylvania	ELAP 014
Virginia	VELAP 10779

All internal QC parameters were met. Unusual sample conditions, if any, are described. Surrogate Spike results designated with "D" indicate that the analyte was diluted out. "MI" indicates matrix interference. Concentration and *Reporting Limit (RL) based on areas provided by client. Values are reported to three significant figures. Solid PPM = mg/kg | PPB = µg/kg and Water PPM = mg/L | PPB = µg/L. The test results reported relate only to the samples submitted.

Pittsburgh
 Contact: Chad Quatman
 Address: 115 Technology Drive
 Pittsburgh, PA 15275
 Ph: Fax:
 Email: KTA-Tator



CLARK
 TESTING

Analytical Chemistry Lab
 1801 Route 51 South
 Building 9
 Jefferson Hills, PA 15025
 Ph: 412-387-1001
 Fax: 412-387-1028

FINAL REPORT

This report and the data within has completed QA/QC review

Primary Contact	Chad Quatman
PO #	20PO-311
Tracking #	413368-1
Client Sample #	400379-3 Abrasive Media 40 / 70 Mesh
Sample Date	07/07/2020
Received Date	07/07/2020

General Diagnostic Notes

Additional detail may be available if requested, at standard Clark consulting rates.

Sample Prep-Raw Materials

Test Code: P1110 / Method:

Result Date	07/08/2020
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Crystalline, Silica, XRD

Test Code: N3905 / Method: NIOSH 7500

Result Date	07/08/2020
Cristobalite	<0.1 wt. %
Quartz	<0.1 wt. %
Tridymite	<0.1 wt. %

Authorized Signature

Analyst: *Cindy Williams* Date: 07/15/2020
 Cindy Williams

Results relate only to items tested.