

**Attachment M**  
**Product Testing for Properties and Constituents**

SPECIALTY GRANULES LLC  
HAGERSTOWN, MARYLAND  
QUALITY VERIFICATION MANUAL

PROCEDURE NO: MIS-11  
SHEET NO: 1 of 5  
DATED: 10/07/19  
CANCELS: 08/18/11

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**Product Quality Testing for Properties and Constituents in Raw Granules, Rock Fines and Finished Products**

**PURPOSE:**

To establish product sampling and testing procedures for use at each plant to identify properties of raw granules, rock fines, and finished products.

**SCOPE:**

This procedure is applicable to existing, new, and substantially modified products that are or will be manufactured at Specialty Granules LLC (SGI) plants. Material sampling at plant locations and tests to be conducted as outlined in the attached charts.

**PROCEDURE:**

Material sampling and material testing will be conducted, unless specifically noted elsewhere, according to the attached sampling and testing charts. A sample inventory sheet that summarizes the day the samples were obtained at the Mill/Headlap Plant and Coloring Plant is to be submitted with the required samples to prevent confusion at the Technical Center for any missing samples as a result of downtime. Plant sample management and submission responsibilities will be shared by SGI's manufacturing personnel (Rock Technician) and/or plant quality personnel (Quality Specialist or Coordinator) according to the attached sampling chart (Table A). Sampling responsibilities will be conducted by one of the above mentioned person(s) or assigned to a competently trained person in operations capable of performing this task. The analysis will be completed by an independently certified and accredited analytical testing organization selected by Life of Mine (LOM) and Environmental Health & Safety (EH&S) personnel.

**SUSPECT FIBROUS MINERALS:**

Raw granules, rock fines, and finished products will be sampled and tested on a routine basis for suspect fibrous mineral content (weight %) using EPA/600/R-93/116 method. If fibrous minerals are detected through the EPA/600/R-93/116 method, the independent lab shall contact SGI and retest the sample using Transmission Electron Microscopy (TEM) method ASTM 5756. Reports shall be made to Legal, EHS and Plant Manager of any results showing 0.1%, or more, of respirable fibrous minerals which are classified as a Group I carcinogen (IARC 1987). Non-fibrous minerals, including the non-fibrous forms of the six regulated fibrous minerals, do not require reporting.

**CRYSTALLINE SILICA:**

Raw granules, rock fines, and finished products will be sampled and tested for respirable crystalline silica content (weight %) using X-ray Diffraction (XRD) and Computer Controlled Scanning Electron Microscopy (CCSEM). Reports shall be made to Legal, EHS and Plant Manager of any results higher than the maximum range reported on the specific material's SDS .

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**TCLP:**

Raw granules, rock fines, and finished products will be sampled and tested at the frequency indicated below using the Toxic Characteristic Leaching Procedure (TCLP), EPA SW-846 Method 1311, a procedure for analyzing the leachate for RCRA metals.

**SPLP:**

Raw granules, rock fines, and finished products will be sampled and tested at the frequency indicated below using the Synthetic Precipitation Leaching Procedure (SPLP), EPA SW-846 Method 1312, a procedure for analyzing the leachate for RCRA metals.

**AMD TESTING BY ACID-BASE ACCOUNTING METHOD:**

Raw granules, rock fines, and finished products will be sampled and tested at the frequency indicated below using the EPA (Sobek) Method for Acid-Base Accounting (ABA) to determine whether these materials have the potential to cause any acid mine drainage when stockpiled.

**Table A Sample Information**

Material	Location	Description	Responsible Person
Raw Granules (#11)	Mill Building	Daily Composite Sample	Rock Technician/Quality Specialist/Coordinator Sampling - as assigned
Rock Fines	Mill & Headlap Building (CHR)	Daily Composite Sample	Rock Technician/Quality Specialist/Coordinator Sampling - as assigned
Finished Products	Mill/Coloring/Shipping	Production Run Composite (Artificial, Headlap, Backsurfacing)	Quality Specialist/Coordinator Sampling - as assigned

**Table B Test Information**

Method	Description
EPA/600/R-93/116	Fibrous Minerals in Bulk Samples by Point Count
ASTM 5756	Transmission Electron Microscopy (TEM)
X-ray Diffraction for Crystalline Phases	CCSEM Computer-controlled Scanning Electron Microscopy
EPA SW-846 EPA Method 1311	Toxic Characteristic Leaching Procedure (TCLP)

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EPA SW-846 EPA Method 1312	Synthetic Precipitation Leaching Procedure (SPLP)
EPA (Sobek) Method ABA	Acid-Base Accounting method

**Table C Sample Testing Frequency at the Charmian Plant**

Initial Sample	Test Method	Baseline Testing Frequency	Ongoing Testing
Raw Granules	EPA/600/R-93/116	Monthly for One Year	Quarterly
Raw Granules	XRD	Monthly for One Year	Quarterly
Raw Granules	SPLP	None	None
Raw Granules	TCLP	Monthly for One Year	None
Raw Granules	ABA	None	None
Rock Fines	EPA/600/R-93/116	Monthly for One Year	Quarterly
Rock Fines	XRD	Monthly for One Year	Quarterly
Rock Fines	SPLP	Monthly for One Year	None
Rock Fines	TCLP	Monthly for One Year	None
Rock Fines	ABA	Monthly for One Year	None
Finished Products	EPA/600/R-93/116	One Monthly Composite	Quarterly
Finished Products	XRD	One Monthly Composite	Quarterly
Finished Products	SPLP	None	None*

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Finished Products	TCLP	One Monthly Composite	None*
Finished Products	ABA	None	None*

\*Additional testing will be conducted on new finished products and on finished products that have been subject to significant changes in formulation or processing conditions as directed by R&D. R&D shall notify the QES, LOM, and EH&S when new finished products and when significant changes are made to formulations or processing conditions.

REPORTING:

SGL will provide samples to a testing laboratory who will then report the analytical data on the samples to Standard Industries legal counsel and Life of Mine (LOM) personnel. LOM personnel will distribute the data to SGL EH&S and SGL Management as required. SGL's LOM personnel will be responsible for archiving all testing data for raw granules, rock fines, and finished products. Such data shall be maintained and destroyed in accordance with SGL's Record Retention Policy. SGL EH&S personnel will be responsible for notifying SGL's management of any results indicating the need for changes to existing or proposed product technical bulletins, including SDS sheets.