Attachment N
Safety Data Sheets

SAFETY DATA SHEET

1. Product and Company Identification

Material name	**CHARMIAN COLORED ROOFING GRANULES**
Version #	01
Issue date	02-17-2015
Revision date	02-17-2015
Supersedes date	12-20-2012
CAS #	Mixture
MSDS Number	G11E03
Product use	Applied to surface of roofing material.
Synonym(s)	Basalt coated with pigments, sodium silicate, kaolin clay, oil and siloxane.
Manufacturer/Supplier	Specialty Granules Inc. 13424 Pennsylvannia Ave. Suite 303 Hagerstown, MD 21742 gkamas@specialtygranules.com Contact Person: Gerald M. Kamas
General Assistance:	301-733-4000
Emergency	CHEMTREC (US): 1-800-424-9300 CHEMTREC International: 703-527-3887

2. Hazards Identification

Physical state	Solid.
Appearance	Granules.
Emergency overview	WARNING
Pictograms 	Under normal handling, the product is expected to pose low health hazards. Dusts generated during subsequent remanufacturing may pose the health hazards described in this MSDS. Contains a substance which may cause cancer by inhalation.
OSHA regulatory status	This product is hazardous according to OSHA 29 CFR 1910.1200.
Potential health effects	
Routes of exposure	Inhalation. Eyes. Skin.
Eyes	May cause eye irritation.
Skin	May cause skin irritation.
Inhalation	Inhalation of dusts may cause respiratory irritation. Contains a substance which may cause cancer by inhalation.
Ingestion	No harmful effects expected in amounts likely to be ingested by accident.
Target organs	Eyes. Skin. Respiratory system.
Chronic effects	Prolonged and repeated overexposure to dust can lead to pneumoconiosis. Inhalation of airborne titanium dioxide dust may cause cancer.
Potential environmental effects	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Basalt (Composition varies naturally. Typically contains feldspar, chlorite, microcline, muscovite and epidote)	Mixture	82 - 94
Quartz (a component of Basalt)	14808-60-7	4 - 12
Ceramic	Mixture	1-5
Iron oxide	1309-37-1	< 3

Components	CAS #	Percent
Titanium dioxide	13463-67-7	< 3
Carbon black	1333-86-4	< 1
Chromium oxide	1308-38-9	< 1
Distillates (petroleum, hydrotreated)	64742-46-7	< 1
Siloxane	10217-34-2	< 0.1

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact In case of contact, flush eyes with large amounts of water for 15 minutes. Get medical attention if irritation develops and persists.

Skin contact Wash off with soap and plenty of water. Get medical attention if irritation develops or persists.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get medical attention.

Ingestion DO NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration. Call a physician or poison control center immediately.

Notes to physician Treat symptomatically.

5. Fire Fighting Measures

Flammable properties No unusual fire or explosion hazards noted.

Extinguishing media

Suitable extinguishing media Use appropriate extinguishing media for any nearby fire.

Protection of firefighters

Protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.

Fire fighting equipment/instructions Use protective equipment appropriate for surrounding materials.

Hazardous combustion products None known.

6. Accidental Release Measures

Personal precautions Wear appropriate personal protective equipment (See Section 8).

Methods for cleaning up Clean up promptly by sweeping or vacuum. Avoid dust formation. Minimize dust generation and accumulation.

7. Handling and Storage

Handling Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust. Minimize dust generation and accumulation. Wash thoroughly after handling.

Storage Store in a manner which will minimize dust generation and accumulation. Store in sealed containers in a protected area.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable fraction.
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	TWA	5 mg/m3	Inhalable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	PEL	3.5 mg/m3	
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	PEL	5 mg/m3	Mist.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m3	
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable particles.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3 mg/m3	Inhalable
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m3	
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m3	

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable dust.

Mexico. Occupational Exposure Limit Values

Components	Type	Value	Form
Carbon black (CAS 1333-86-4)	STEL	7 mg/m3	
	TWA	3.5 mg/m3	
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Quartz (a component of Basalt) (CAS 14808-60-7)	TWA	0.1 mg/m3	

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields (or goggles).

Skin protection Wear protective gloves.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance Granules.

Physical state Solid.

Form Granules.

Color Not established.

Odor Not established.

Odor threshold Not available.

pH Not determined.

Vapor pressure Not applicable.

Vapor density Not available.

Boiling point Not Applicable.

Melting point/Freezing point > 2300 °F (> 1260 °C)

Solubility (water) Negligible.

Specific gravity 3.0

Flash point Not determined.

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Auto-ignition temperature Not available.

Partition coefficient (n-octanol/water) No data available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Not available.
Incompatible materials	No data available.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Carbon black (CAS 1333-86-4)		
Acute		
Dermal		
LD50	Rabbit	> 3 g/kg
Oral		
LD50	Rat	> 8000 mg/kg

Sensitization	No sensitizing effects known.
Acute effects	May cause irritation through mechanical abrasion.
Carcinogenicity	This material contains titanium dioxide, a component that has been tested in several carcinogenicity studies. Lung tumors were observed in rats following high dose exposure by inhalation and in female rats exposed by intratracheal instillation. Other studies have shown no tumors in rats following inhalation exposure and no tumors in mice or rats following oral exposure. Carbon black: Certain carbon blacks have proved carcinogenic in animal studies. Inhalation animal studies of high concentrations resulted in chronic inflammation, lung fibrosis and lung tumors. Epidemiology studies of workers include findings of bronchitis, pneumonia, emphysema and excess cancer. Substances bound in a polymer or other matrix should present little or no hazard.

ACGIH Carcinogens

Carbon black (CAS 1333-86-4)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	A2 Suspected human carcinogen. A4 Not classifiable as a human carcinogen.
Iron oxide (CAS 1309-37-1)	A4 Not classifiable as a human carcinogen.
Quartz (a component of Basalt) (CAS 14808-60-7)	A2 Suspected human carcinogen.
Titanium dioxide (CAS 13463-67-7)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Carbon black (CAS 1333-86-4)	2B Possibly carcinogenic to humans.
Iron oxide (CAS 1309-37-1)	3 Not classifiable as to carcinogenicity to humans.
Quartz (a component of Basalt) (CAS 14808-60-7)	1 Carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

US NTP Report on Carcinogens: Known carcinogen

Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	Known To Be Human Carcinogen.
Quartz (a component of Basalt) (CAS 14808-60-7)	Known To Be Human Carcinogen.

12. Ecological Information

Ecotoxicological data

Components		Species	Test Results
Carbon black (CAS 1333-86-4)			
Aquatic			
Crustacea	EC50	Daphnia	5600 mg/l, OECD 202

Ecotoxicity	No data available.
Persistence and degradability	No data available.
Bioaccumulation / Accumulation	No data available.

Partition coefficient	No data available.
Mobility in environmental media	No data available.

13. Disposal Considerations

Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations. When this product as supplied is to be discarded as waste, it does not meet the definition of a RCRA waste under 40 CFR 261.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as a hazardous material by DOT.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance (40 CFR 355, Appendix A)	No
Section 311/312 (40 CFR 370)	Yes

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) Not controlled

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Controlled

WHMIS classification D2A - Other Toxic Effects-VERY TOXIC

WHMIS labeling

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

State regulations

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Carbon black (CAS 1333-86-4)	Listed.
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Carbon black (CAS 1333-86-4)	Listed.
Quartz (a component of Basalt) (CAS 14808-60-7)	Listed.
Titanium dioxide (CAS 13463-67-7)	Listed.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Carbon black (CAS 1333-86-4)	Listed: February 21, 2003 Carcinogenic.
Quartz (a component of Basalt) (CAS 14808-60-7)	Listed: October 1, 1988 Carcinogenic.
Titanium dioxide (CAS 13463-67-7)	Listed: September 2, 2011 Carcinogenic.

US - New Jersey RTK - Substances: Listed substance

Carbon black (CAS 1333-86-4)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Quartz (a component of Basalt) (CAS 14808-60-7)	Listed.
Titanium dioxide (CAS 13463-67-7)	Listed.

US. Massachusetts RTK - Substance List

Carbon black (CAS 1333-86-4)	Listed.
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Quartz (a component of Basalt) (CAS 14808-60-7)	Listed.
Titanium dioxide (CAS 13463-67-7)	Listed.

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

Carbon black (CAS 1333-86-4)	Listed.
Distillates (petroleum, hydrotreated) (CAS 64742-46-7)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Quartz (a component of Basalt) (CAS 14808-60-7)	Listed.
Titanium dioxide (CAS 13463-67-7)	Listed.

Mexico regulations

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.
A HMIS® Health rating including an * indicates a chronic hazard.

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

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