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GROG FLINT (3-50)

GROG, FLINT



Missouri Calcined Fireclay, Calcined Flint Clay, Calcined Fire clay, STKO®, Calcined plastic, Calcined plastic fire clay, Calcined Flint, Dust Collector Fines

Safety Data Sheet  
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Revision Date: 06/06/2013

Version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

Product Identifier

Product Form: Mixture

Product Name: Missouri Calcined Fireclay, Calcined Flint Clay, Calcined Fire clay, STKO®, Calcined plastic, Calcined plastic fire clay, Calcined Flint, Dust Collector Fines

Intended Use of the Product

Use of the Substance/Mixture: High temperature aggregates

Name, Address, and Telephone of the Responsible Party

Christy Minerals LLC  
833 Booneville Rd.  
High Hill, MO 63350  
T (636)585-2214  
christyco.com

Emergency Telephone Number

Emergency Number : 1-800-535-5053 Domestic, 1-952-323-3500 International

SECTION 2: HAZARD IDENTIFICATION

Classification of the Substance or Mixture

GHS-US Classification

Carc. 1A H350  
STOT RE 1 H372

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

Hazard Statements (GHS-US)

Precautionary Statements (GHS-US)

- : Danger
- : H350 - May cause cancer (inhalation)
- : H372 - Causes damage to organs through prolonged or repeated exposure (inhalation)
- : P201 - Obtain special instructions before use.
- : P202 - Do not handle until all safety precautions have been read and understood.
- : P260 - Do not breathe dust.
- : P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
- : P270 - Do not eat, drink or smoke when using this product.
- : P280 - Wear protective gloves, protective clothing, eye protection, respiratory protection.
- : P308+P313 - If exposed or concerned: Get medical advice/attention.
- : P314 - Get medical advice and attention if you feel unwell.
- : P501 - Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.

Other Hazards: Not available

Unknown Acute Toxicity (GHS-US): Not available

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**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Not available

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses.

### Reference to Other Sections

Refer to section 9 for flammability properties.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not breathe dust. Avoid generating dust.

#### For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

### Environmental Precautions

Prevent entry to sewers and public waters.

### Methods and Material for Containment and Cleaning Up

**For Containment:** Avoid generation of dust during clean-up of spills.

**Methods for Cleaning Up:** Clear up spills immediately and dispose of waste safely. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up. Avoid generation of dust during clean-up of spills.

### Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

**Additional Hazards When Processed:** Do not breathe dust. Avoid dust production. Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product. Wash hands, forearms, and other exposed areas thoroughly after handling.

### Conditions for Safe Storage, Including Any Incompatibilities

**Storage Conditions:** Avoid generation of dust. Keep container closed when not in use.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers.

### Specific End Uses

High temperature aggregate

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>

# Missouri Calcined Fire Clay, Calcined Flint Clay, Calcined Fire clay, STKO, Calcined plastic, Calcined plastic fire clay

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Manitoba	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup> (total mass)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	0.3 mg/m <sup>3</sup> (total mass)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.10 mg/m <sup>3</sup> (designated substance regulation)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Québec	VEMP (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	300 particle/mL
<b>Titanium dioxide (13463-67-7)</b>		
Mexico	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Mexico	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	5000 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
Manitoba	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total mass)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total mass)
Ontario	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Québec	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Yukon	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Silica, amorphous (7631-86-8)</b>		
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	8 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	3000 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup> (regulated under Silica flour, total mass)
Northwest	OEL TWA (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup> (total mass, regulated under Silica flour)

# Missouri Calcined Fire Clay, Calcined Flint Clay, Calcined Fire clay, STKO, Calcined plastic, Calcined plastic fire clay

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Territories		
Yukon	OEL TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
<b>Silica, cristobalite (34464-46-1)</b>		
Mexico	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
USA IDLH	US IDLH (mg/m <sup>3</sup> )	25 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Manitoba	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup> (total mass)
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup> (total mass)
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (designated substance regulation)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	0.025 mg/m <sup>3</sup>
Québec	YEMP (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	150 particle/ml

### Exposure Controls

**Appropriate Engineering Controls:** Provide adequate ventilation to minimize dust concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

**Personal Protective Equipment:** Respiratory protection of the dependent type. Protective clothing. Protective goggles. Gloves.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics

**Hand Protection:** Protective gloves

**Eye Protection:** Chemical goggles or safety glasses.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: White - grey, dry aggregate to powder
Odor	: Odorless
Odor Threshold	: Not available
pH	: 6 - 8

# Missouri Calcined Fire Clay, Calcined Flint Clay, Calcined Fire clay, STKO, Calcined plastic, Calcined plastic fire clay

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Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: > 1500 °C (2732°F)
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: Not available
Specific Gravity	: 2.3-2.7 g/cc
Solubility	: Not available
Log Pow	: Not available
Log Kow	: Not available
Viscosity, Kinematic	: Not available
Viscosity, Dynamic	: Not available
Explosion Data - Sensitivity to Mechanical Impact	: Not available
Explosion Data - Sensitivity to Static Discharge	: Not available

## SECTION 02: STABILITY AND REACTIVITY

**Reactivity:** Hazardous reactions will not occur under normal conditions.

**Chemical Stability:** Stable at standard temperature and pressure.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.

**Conditions to Avoid:** Incompatible materials.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers.

**Hazardous Decomposition Products:** Not available

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects - Product

**Acute Toxicity:** Not classified

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Not classified pH: 6 - 8

**Serious Eye Damage/Irritation:** Not classified pH: 6 - 8

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Teratogenicity:** Not available

**Carcinogenicity:** May cause cancer (inhalation).

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs through prolonged or repeated exposure (inhalation).

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** May cause cancer by inhalation. Dust from this product may cause irritation to the respiratory tract.

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**Symptoms/Injuries After Skin Contact:** Prolonged contact with large amounts of dust may cause mechanical irritation.  
**Symptoms/Injuries After Eye Contact:** Prolonged contact with large amounts of dust may cause mechanical irritation.  
**Symptoms/Injuries After Ingestion:** If a large quantity has been ingested: Intestinal blockage. Gastrointestinal irritation.  
**Chronic Symptoms:** Repeated or prolonged exposure to respirable crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal.  
**Information on Toxicological Effects - Ingredient(s)**

### LD50 and LC50 Data

<b>Quartz (14808-60-7)</b>	
LD50 Oral Rat	> 5000 mg/kg
<b>Titanium dioxide (13463-67-7)</b>	
LD50 Oral Rat	> 10000 mg/kg
<b>Silica, amorphous (7631-86-9)</b>	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rabbit	> 2000 mg/kg
LC50 Inhalation Rat (mg/l)	> 2.2 mg/l (Exposure time: 1 h)
<b>Quartz (14808-60-7)</b>	
IARC Group	1
National Toxicity Program (NTP) Status	2
<b>Titanium dioxide (13463-67-7)</b>	
IARC Group	2B
National Toxicity Program (NTP) Status	1
<b>Silica, amorphous (7631-86-9)</b>	
IARC Group	3
<b>Silica, cristobalite (13464-46-1)</b>	
IARC Group	1

## SECTION 12: ECOLOGICAL INFORMATION

### Toxicity

<b>Silica, amorphous (7631-86-9)</b>	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: <i>Brachydanio rerio</i> (static))
EC50 Daphnia 1	7500 mg/l (Exposure time: 48 h - Species: <i>Cariodaphnia dubia</i> )
EC50 Other Aquatic Organisms 1	440 mg/l (Exposure time: 72 h - Species: <i>Pseudokirchneriella subcapitata</i> )

### Persistence and Degradability

Missouri Calcined Fireclay, Calcined Flint Clay, Calcined Fire clay, STKO®, Calcined plastic, Calcined plastic fire clay, Calcined Flint, Dust Collector Fines

Persistence and Degradability: Not established.

### Bioaccumulation Potential

Missouri Calcined Fireclay, Calcined Flint Clay, Calcined Fire clay, STKO®, Calcined plastic, Calcined plastic fire clay, Calcined Flint, Dust Collector Fines

Bioaccumulation Potential: Not established.

### Silica, amorphous (7631-86-9)

BCP Fish 1: (no bioaccumulation expected)

**Mobility in Soil:** Not available

### Other Adverse Effects

Other information: Avoid release to the environment.

# Missouri Calcined Fire Clay, Calcined Flint Clay, Calcined Fire clay, STKO, Calcined plastic, Calcined plastic fire clay

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### SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Recommendation: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

### SECTION 14. TRANSPORT INFORMATION

In Accordance With ICAO/IATA/DOT/TDS

UN Number Not regulated for transport

UN Proper Shipping Name Not regulated for transport

Additional Information Not regulated for transport

Transport by Sea Not regulated for transport

Air Transport Not regulated for transport

### SECTION 15. REGULATORY INFORMATION

#### US Federal Regulations

Missouri Calcined Fire Clay, Calcined Flint Clay, Calcined Fire clay, STKO, Calcined plastic, Calcined plastic fire clay	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

Quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Titanium dioxide (13463-67-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Silica, amorphous (7621-86-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Asbestos (1302-98-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Silica, cristobalite (14463-46-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Titanium dioxide (13463-67-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Quartz (14808-60-7)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Titanium dioxide (13463-67-7)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Silica, amorphous (7621-86-8)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

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### Silica, cristobalite (14464-45-1)

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) List

### Canadian Regulations

Missouri Calcined Fireclay, Calcined Flint Clay, Calcined Fire clay, STKO®, Calcined plastic, Calcined plastic fire clay, Calcined Flint, Dust Collector Flies

WHMIS Classification: Class D Division 2 Subdivision B - Toxic material causing other toxic effects  
 Class D Division 2 Subdivision A - Very toxic material causing other toxic effects



### Quartz (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List) inventory.  
 Listed on the Canadian Ingredient Disclosure List

WHMIS Classification: Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

### Titanium dioxide (13463-67-7)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification: Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

### Silica, amorphous (7631-86-9)

Listed on the Canadian DSL (Domestic Substances List) inventory.  
 Listed on the Canadian Ingredient Disclosure List

WHMIS Classification: Uncontrolled product according to WHMIS classification criteria

### Mullite (1302-93-8)

Listed on the Canadian DSL (Domestic Substances List) inventory.

### Silica, cristobalite (14464-45-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.  
 Listed on the Canadian Ingredient Disclosure List

WHMIS Classification: Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

## SECTION 9: OTHER INFORMATION

Indication of Changes: : 06/06/2013  
 Other information: : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

### GHS Full Text Phrases:

Carc. 1A	Carcinogenicity Category 1A
Carc. 2	Carcinogenicity Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H335	May cause respiratory irritation
H350	May cause cancer
H351	Suspected of causing cancer



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H372

Causes damage to organs through prolonged or repeated exposure

### Party Responsible for the Preparation of This Document

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