



Missouri Fireclay, Flint Clay, Plastic Fireclay, Hawthorn Bond®, Hawthorn Red, Cement Clay, #2 Clay, #1 Clay, JSM Clay, Christy Gold, Raw Flint Clay, Raw Plastic Clay

Safety Data Sheet
according to Regulation (EC) No. 453/2010
Revision date: 06/06/2013

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product form : Mixture
Product Name : Missouri Fireclay, Flint Clay, Plastic Fireclay, Hawthorn Bond®, Hawthorn Red, Cement Clay, #2 Clay, #1 Clay, JSM Clay, Christy Gold, Raw Flint Clay, Raw Plastic Clay

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial.
For professional use only.
Use of the substance/mixture : High temperature bonding agent, raw feed stock in refractories

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency Telephone Number

Emergency Number : 1-800-535-5053 Domestic, 1-352-323-3500 International

SECTION 2: Hazards identification

2.1. Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Carc. 1A H350

STOT RE 1 H372

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Carc.Cat.1; R49

T; R48/23

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label Elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS08

Signal word (CLP) :

Danger

Hazardous ingredients :

Quartz

Hazard statements (CLP) :

H350 - May cause cancer (inhalation)

H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (CLP) :

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe dust.

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P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P281 - Use personal protective equipment as required.
P314 - Get medical advice/attention if you feel unwell.
P501 - Dispose in a safe manner in accordance with local/national regulations.

2.3. Other Hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product Identifier	%	Classification according to Directive 67/548/EEC
Kaolin substance with national workplace exposure limit(s) (BE, BG, DK, ES, FI, FR, GB, IE, IT, PL, PT, SK)	(CAS No) 1332-58-7 (EC no) 310-194-1	60 - 100	Not classified
Quartz	(CAS No) 14808-60-7 (EC no) 238-878-4	20 - 30	Carc.Cat.1; R49 T; R48/23
Titanium dioxide substance with national workplace exposure limit(s) (AT, BE, BG, DK, ES, ET, FR, GB, GR, IE, IT, LT, LV, PL, PT, RO, SE)	(CAS No) 13463-67-7 (EC no) 236-675-5	0 - 2.75	Not classified

Name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Kaolin substance with national workplace exposure limit(s) (BE, BG, DK, ES, FI, FR, GB, IE, IT, PL, PT, SK)	(CAS No) 1332-58-7 (EC no) 310-194-1	60 - 100	Not classified
Quartz	(CAS No) 14808-60-7 (EC no) 238-878-4	20 - 30	Carc. 1A, H350 STOT RE 1, H372
Titanium dioxide substance with national workplace exposure limit(s) (AT, BE, BG, DK, ES, ET, FR, GB, GR, IE, IT, LT, LV, PL, PT, RO, SE)	(CAS No) 13463-67-7 (EC no) 236-675-5	0 - 2.75	Not classified

Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of First Aid Measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : When symptoms occur: go into open air and ventilate suspected area. If exposed or concerned: Get medical advice/attention.

First-aid measures after skin contact : Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Seek medical attention.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/injuries : Causes damage to organs through prolonged or repeated exposure (inhalation).
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.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: Firefighting measures

5.1. Extinguishing Media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire hazard	: Not flammable.
Explosion hazard	: Product is not explosive.
Reactivity	: Hazardous reactions will not occur under normal conditions.

5.3. Advice for firefighters

Precautionary measures fire	: Exercise caution when fighting any chemical fire.
Firefighting instructions	: Use water spray or fog for cooling exposed containers.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Do not breathe dust. Avoid generating dust.
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6.1.1. For non-emergency personnel

Protective equipment	: Use appropriate personal protection equipment (PPE).
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. 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.

6.4. Reference to other sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: Handling and storage

7.1. 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.
Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust.
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.

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7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible products : Strong acids. Strong bases. Strong oxidizers.

7.3. Specific end use(s)

High temperature bonding agent, raw feed stock in refractories.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
Austria	MAK (mg/m ³)	4 mg/m ³ (when it contains >1% or more of the substance, yearly average)
Belgium	Limit value (mg/m ³)	0.1 mg/m ³
Bulgaria	OEL TWA (mg/m ³)	0.07 mg/m ³
France	VME (mg/m ³)	0.1 mg/m ³ (restrictive limit)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³
Spain	VLA-ED (mg/m ³)	0.1 mg/m ³ (reclassified IARC group 2A to group 1)
The Netherlands	MAC TGG 8H (mg/m ³)	0.075 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	0.1 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	0.3 mg/m ³ (calculated)
Denmark	Grænseværdie (langvarig) (mg/m ³)	0.1 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	0.2 mg/m ³ (demolition and excavation works)
Hungary	AK-érték	0.15 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	0.1 mg/m ³
Lithuania	IPRV (mg/m ³)	0.1 mg/m ³
Poland	NDS (mg/m ³)	1.0 mg/m ³ (2% to 50% free crystalline silica)
Romania	OEL TWA (mg/m ³)	0.1 mg/m ³
Slovakia	NPHV (priemerná) (mg/m ³)	0.1 mg/m ³ (in Cristobalite or Tridymite)
Sweden	nivågränsvärde (NVG) (mg/m ³)	0.1 mg/m ³
Portugal	OEL TWA (mg/m ³)	0.025 mg/m ³
Portugal	OEL chemical category (PT)	A2 - Suspected Human Carcinogen

Titanium dioxide (13463-67-7)		
Austria	MAK (mg/m ³)	10 mg/m ³
Belgium	Limit value (mg/m ³)	10 mg/m ³
Bulgaria	OEL TWA (mg/m ³)	10.0 mg/m ³
France	VME (mg/m ³)	10 mg/m ³
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
Latvia	OEL TWA (mg/m ³)	10 mg/m ³
Spain	VLA-ED (mg/m ³)	10 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	4 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	12 mg/m ³ (calculated)
Denmark	Grænseværdie (langvarig) (mg/m ³)	6 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	4 mg/m ³
Lithuania	IPRV (mg/m ³)	5 mg/m ³
Poland	NDS (mg/m ³)	10.0 mg/m ³ (<2% free crystalline silica and containing no asbestos)
Romania	OEL TWA (mg/m ³)	10 mg/m ³
Romania	OEL STEL (mg/m ³)	15 mg/m ³

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Titanium dioxide (13463-67-7)		
Sweden	nivågränsvärde (NVG) (mg/m ³)	5 mg/m ³
Portugal	OEL TWA (mg/m ³)	10 mg/m ³
Portugal	OEL chemical category (PT)	A4 - Not Classifiable as a Human Carcinogen
Kaolin (1332-58-7)		
Belgium	Limit value (mg/m ³)	2 mg/m ³
Bulgaria	OEL TWA (mg/m ³)	6.0 mg/m ³ (containing <2% free Crystalline silicon dioxide in respirable fraction)
France	VME (mg/m ³)	10 mg/m ³
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
Spain	VLA-ED (mg/m ³)	2 mg/m ³ (this value is for the particulate matter that is free from Asbestos and contains less than 1% of Crystalline silica)
United Kingdom	WEL TWA (mg/m ³)	2 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	6 mg/m ³ (calculated)
Denmark	Grænseværdie (langvarig) (mg/m ³)	2 mg/m ³
Finland	HTP-arvo (8h) (mg/m ³)	2 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	2 mg/m ³
Poland	NDS (mg/m ³)	10.0 mg/m ³ (<2% free crystalline silica and containing no asbestos)
Slovakia	NPHV (priemerná) (mg/m ³)	10 mg/m ³
Portugal	OEL TWA (mg/m ³)	2 mg/m ³
Portugal	OEL chemical category (PT)	A4 - Not Classifiable as a Human Carcinogen

8.2. 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

: In case of inadequate ventilation wear respiratory protection.

Other information

: When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

: Solid

Appearance

: White to grey, aggregate to powder, lumps to powder.

Colour

: No data available

Odour

: earthy.

Odour threshold

: No data available

pH

: 6 - 8

Relative evaporation rate (butylacetate=1)

: No data available

Melting point

: > 1200 °C (>2192°F)

Freezing point

: No data available

Boiling point

: No data available

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Flash point	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Specific gravity	: 1.5-2.5 g/cc
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

VOC content : <0.1%

SECTION 10: Stability and reactivity

10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

10.2. Chemical stability

Stable at standard temperature and pressure.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Incompatible materials.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Based on available data, the classification criteria are not met

Quartz (14808-60-7)	
LD50 oral rat	> 5000 mg/kg
Titanium dioxide (13463-67-7)	
LD50 oral rat	> 10000 mg/kg

Skin corrosion/irritation	: Based on available data, the classification criteria are not met pH: 6 - 8
Serious eye damage/irritation	: Based on available data, the classification criteria are not met pH: 6 - 8
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Based on available data, the classification criteria are not met
Carcinogenicity	: May cause cancer by inhalation
Reproductive toxicity	: Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met
Specific target organ toxicity (repeated exposure)	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

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12.2. Persistence and degradability

Missouri Fireclay, Flint Clay, Plastic Fireclay, Hawthorn Bond®, Hawthorn Red, Cement Clay, #2 Clay, #1 Clay, JSM Clay, Christy Gold, Raw Flint Clay, Raw Plastic Clay

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1. UN number

No dangerous good in sense of transport regulations

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

14.6.1. Overland transport

No additional information available

14.6.2. Transport by Sea

No additional information available

14.6.3. Air Transport

No additional information available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Contains no REACH candidate substance

VOC content : <0.1%

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes : 06/06/2013

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Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of R-, H- and EUH-phrases::

Carc. 1A	Carcinogenicity, Category 1A
STOT RE 1	Specific target organ toxicity — Repeated exposure, Category 1
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R49	May cause cancer by inhalation
T	Toxic

SDS EU (REACH Annex II)

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