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 Telephone (770) 594-0660 Fax: (770) 645-3460
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MATERIAL SAFETY DATA SHEET

Section 1 - Material Identity

Product Trade Name(s): Old Mine #4
Common Name(s): Ball Clay
Chemical Name: $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$
CAS Number: 1332-58-7 (In TSCA Inventory)
Physical Form: Light gray to brown powder

HMIS Ratings

Health Hazard	1
Flammability Hazard	0
Reactivity Hazard	0
Max. Personal Protection	E

Manufacturer's Name & Address: Kentucky-Tennessee Clay Company, 100 Mansell Court
 East, Suite 300; Roswell, GA 30076
Emergency Telephone: (800) 424-9300 CHEMTREC

Section 2 - Ingredients and Hazards

Ingredient	Wt. % (Approx.)	CAS No.	OSHA PEL*	ACGIH TLV*
Kaolinite	~70% - 90%	1332-58-7	5 mg/m ³ Resp. 15 mg/m ³ Total	2 mg/m ³ Resp.
Crystalline Silica, Quartz	~10% - 30%	14808-60-7	0.1 mg/m ³ Resp.	0.025 mg/m ³ Resp.
Water	< 2%			

* Unless otherwise noted, all PEL and TLV values are reported as 8 hour time weighted averages (TWA).

Section 3 - Hazards Identification and Cautions

Appearance: Light gray to brown powder

Primary Routes of Entry: Skin contact, skin absorption, eye contact, ingestion: Hazard Classification - None. (Historical basis for classification.)

Target Organs: Eye, skin and lungs

Medical Conditions Aggravated by Exposure: Skin contact may aggravate existing dermatitis. Breathing excessive quantities of Ball Clay dust may aggravate pre-existing respiratory conditions.

Potential Health Effects:

Eye Contact: This product may produce irritation upon contact with the eye. See also Section 4 below.

Skin Contact: Prolonged or repeated exposure may cause skin irritation. Ball Clay is not expected to be absorbed through the skin in harmful amounts or to produce an allergic skin reaction. See also Section 4 below.

Ingestion: No adverse effect is expected. If ingested, seek medical advice. See also Section 4 below.

Inhalation: Inhalation of excessive quantities of Ball Clay dust may irritate the respiratory tract. See also Section 4 below. Prolonged exposure to respirable kaolin dust without the use of appropriate respiratory equipment could adversely affect respiratory function including fibrogenic response. See Am. Rev. Respir. Dis. 1983; 127:215-220; 231-253; 141-142; Doc. Thres. Limit Values and Bio. Exp. Ind., Sixth Edition, 1991: OSHA PEL-29 C.F.R. 1910.1000.

Sub chronic, Chronic: None expected. No applicable information was found concerning any potential health effects resulting from sub chronic or chronic exposure to Ball Clay.

This product typically contains crystalline silica (quartz sand) above 0.1% as a naturally occurring impurity. The International Agency for

Research on

Cancer has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)."

It also noted that carcinogenicity was not detected in all industrial circumstance studies, and may be dependent on external factors affecting its biological

activity or distribution of its polymorphs. (See IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68 (1997).)

Exposure to

respirable silica has also been associated with silicosis, scleroderma, and nephrotoxicity. (See Occupational Lung Disorders, Third Edition, Chapter 12 (1994) and American Journal of Respiratory and Critical Care Medicine, Volume 155, pp 761-765 (1997).)

Trace amounts of dioxin congeners, including TCDD have been detected in parts per trillion (ppt). These trace amounts are not believed to be a health risk, but Special Protections and Special Precautions (Section 8) are advised. Methods of transmission may include inhalation, ingestion, or dermal absorption. IARC Monograph Volume 69, 1977 concludes that 2,3,7,8-TCDD (a dioxin) is carcinogenic to humans.

Section 4 - First Aid Measures

Eye Contact:	Follow good industrial hygiene practices. In case of contact, immediately flush eyes with plenty of water. Seek medical aid if necessary.
Skin Contact:	Follow good industrial hygiene practices. Wash affected skin areas thoroughly with soap and water. Seek medical aid if necessary.
Inhalation:	Follow good industrial hygiene practices. If excessive exposure by inhalation is suspected, remove to fresh air. If necessary, a MSHA/NIOSH or OSHA/NIOSH approved respirator is recommended. Seek medical aid if necessary.
Ingestion:	Follow good industrial hygiene practices. If ingested, do not induce vomiting. If conscious, drink two glasses of water. Seek medical aid if necessary.

Section 5 - Fire Fighting Measures

Explosion Data: Not Explosive

LEL: Not Applicable

UEL: Not Applicable

Extinguishing Media: Product will not burn.

NFPA 704M Hazard Classification: Health: 1 Flammable: 0 Reactivity: 0

Flammability: Not Flammable or Combustible

Flash Point: Not Applicable

Auto-Ignition: Not Applicable

Use appropriate extinguishing media for packaging material if applicable.

Section 6 - Accidental Release Measures

Vacuum, pump or scoop spilled material into containers for reclaiming or disposal. Use proper respiratory and personal protective equipment. MSHA/NIOSH or OSHA/NIOSH approved respirator recommended. Spilled materials may cause slippery conditions when wet. Care should be exercised when walking on spills on floors or concrete pads. No neutralizing chemicals required. Material is inert and nonreactive. Ball Clay is not a CERCLA listed hazardous substance.

Section 7 - Handling and Storage

Storage in a cool, dry location is recommended.

Spilled materials may cause slippery conditions when wet. Care should be exercised when walking on spills on floors or concrete pads.

Minimize dust generation & accumulation.

If excessive dust is generated, provide adequate ventilation and use proper respiratory and personal protective equipment.

MSHA/NIOSH or OSHA/NIOSH approved respirator recommended.

Section 8 - Exposure Control/Personal Protection

<u>Hazardous Ingredient</u>	<u>Weight % (Approx.)</u>	<u>CAS No.</u>	<u>MSHA PEL</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
		1332-58-7	10 mg/m ³ Total	15 mg/m ³ Total 5 mg/m ³ Resp.	2 mg/m ³ Resp.
Crystalline Silica, Quartz	~10% - 30%	14808-60-7	0.1 mg/m ³ Resp.	0.1 mg/m ³ Resp.	0.025 mg/m ³ Resp.

Unless otherwise noted, all PEL and TLV values are reported as 8 hour time weighted averages (TWA).

Respiratory Protection:

If respirator is required, use of a MSHA/NIOSH or OSHA/NIOSH approved respirator is recommended.

Ventilation:

Use exhaust ventilation, if required, to maintain dust concentration below recommended exposure limits.

Protective Equipment:

Wear side shield safety glasses. Rubber gloves are recommended for prolonged exposure.

Section 9 - Physical and Chemical Properties

Physical State:	Solid	Boiling Point:	Not Applicable
Appearance & Odor:	Light gray to brown powder with earthy odor	Freezing Point:	Not Applicable
pH (Aqueous Suspension):	3.5 - 7.5	Vapor Pressure:	Not Applicable
Specific Gravity:	2.4 - 2.65	Vapor Density:	Not Applicable
% Solubility in Water:	Negligible	VOC:	None
Melting Point:	1569 °C - 1785 °C	Evaporation Rate:	Not Applicable

Section 10 - Stability and Reactivity

Chemically Stable? Yes No

Compatible with Other Substances? Yes No (See below)

Hazardous Decomposition/By-Products: Ball clay is stable under normal conditions. When exposed to high temperatures, free quartz can change crystal structure to form tridymite (above 870°C) or cristobalite (above 1470°C) which have higher health hazards than quartz. (Tridymite and cristobalite

(TWA-TLV) = 0.025 mg/m³.

Conditions Contributing to Hazardous Polymerization: None, inert and nonreactive.

Incompatibility (Materials to Avoid): None, inert and nonreactive.

Section 11 - Disposal Considerations

EPA Waste Number: Under RCRA (40 CFR 261) Ball Clay is a non-hazardous waste. Dispose of waste material in accordance with all local, state and federal requirements. (Recommendation: bury under 4 feet of top soil.)

Section 12 - Toxicological Information

Ball Clay - CAS No. 1332-58-7

Primary Route of Exposure: Skin; Eye Contact; Inhalation; Ingestion

Ball Clay - Acute Health Hazards:

Eye contact may cause mechanical irritation.

Skin contact may aggravate existing dermatitis. .

Inhalation from prolonged and continuous exposure to excessive quantities of dust may aggravate existing asthmatic or respiratory conditions. No adverse effect expected when ingested.

Ball Clay - Chronic Health Hazards*:

Carcinogenicity*: NTP? <u>No</u>	IARC*? <u>No</u>	OSHA*? <u>No</u>
Mutagenicity: None known	Teratogenicity: None known	Reproductive Effects: None known

• See Section 3 for discussion of crystalline silica.

Section 13 - Transport Information

EPA Waste Number: Not Regulated

DOT Classification: Not Regulated **DOT/IMO Classification:** Not Regulated

Internal UN: Not Regulated

Section 14 - Regulatory Information

FDA: Ball Clay is generally recognized as safe (GRAS) under the FDA in accordance with 21 CFR 186.1256. Additionally Ball Clay is established as a component of the uncoated or coated food contact surface of paper and paperboard in accordance with 21 CFR 176.170 (aqueous and fatty foods) and CFR 176.180 (dry foods).

SARA Title III Section 302 Extremely Hazardous Substances: This product does not contain extremely hazardous substances subject to the reporting requirements of Section 302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 355.

SARA Title III Section 311 and 312 Health and Physical Hazard Categories per 40 CFR 370.2:

Immediate	Delayed	Fire	Pressure	Reactivity
Yes	Yes	No	No	No

SARA Section 313 Notification: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

TSCA: Product is listed in Initial Inventory, Vol. 1, Appendix A, CAS No. 1332-58-7.

The International Agency for Research on Cancer has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)." It also noted that carcinogenicity was not detected in all industrial circumstance studies, and may be dependent on external factors affecting its biological activity or distribution of its polymorphs. (See IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68 (1997).) Exposure to respirable silica has also been associated with silicosis, scleroderma, and nephrotoxicity. (See Occupational Lung Disorders, Third Edition, Chapter 12 (1994) and American Journal of Respiratory and

Critical Care Medicine, Volume 155, pp 761-765 (1997).)

WARNING: This product may also contain extremely small amounts of one or more naturally-occurring materials known to the State of California to cause cancer, birth defects, or other reproductive harm.

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, IMERYS NORTH AMERICA CERAMICS MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

IMERYS is a business name that includes Imerys North America Ceramics of which Kentucky-Tennessee Clay Company is a member. Registered in the USA. Registered Office: 100 Mansell Court East, Suite 300, Roswell, GA 30076.

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