



100 Mansell Court East, Suite 300; Roswell, GA 30076  
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Customer Service: (800) 814-4538

## MATERIAL SAFETY DATA SHEET

### Section 1 - PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name(s):** Old Mine #4  
**Common Names(s):** Ball Clay, Kaolinitic Clay  
**Chemical Formula:**  $\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$   
**CAS Number:** 999999-99-4  
**Physical Form:** Light gray to brown powder

**Manufacturer's Name & Address:** Kentucky-Tennessee Clay Company, 100 Mansell Court East, Suite 300; Roswell, GA 30076

**Emergency Telephone:** For Chemical Emergency Spill, Leak, Fire, Exposure or Accident Call CHEMTREC Day or Night. DOMESTIC NORTH AMERICA (800) 424-9300 INTERNATIONAL, CALL (703) 527-3887 (collect calls accepted)

### Section 2 - COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Ingredient</u>          | <u>Wt. % (Approx.)</u> | <u>CAS No.</u> | <u>OSHA PEL*</u>  | <u>ACGIH TLV*</u>             |
|----------------------------|------------------------|----------------|---|-------------------------------|
| Kaolin                     | 68% - 88%              | 1332-58-7      | 5 mg/m <sup>3</sup> Resp.<br>15 mg/m <sup>3</sup> Total | 2 mg/m <sup>3</sup> Resp.     |
| Crystalline Silica, Quartz | 10% - 30%              | 14808-60-7     | 0.1 mg/m <sup>3</sup> Resp.                             | 0.025 mg/m <sup>3</sup> Resp. |
| Titanium Dioxide           | 1.4% - 2.3%            | 13463-67-7     | 15 mg/m <sup>3</sup>                                    | 10 mg/m <sup>3</sup>          |
| Water                      | < 2%                   |                |   |                               |

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

### Section 3 - HAZARDS IDENTIFICATION

**Appearance:** Light gray to brown powder

**Primary Routes of Entry:** Skin contact, eye contact, ingestion, inhalation

**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 for first aid measures.

**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 for first aid measures.

**Ingestion:** No adverse effect is expected. If ingested, seek medical advice. See also Section 4 below for first aid measures.

**Inhalation:** Inhalation of excessive quantities of Ball Clay dust may irritate the respiratory tract. See also Section 4 below for first aid measures. Prolonged exposure to respirable kaolin dust without the use of appropriate respiratory equipment could adversely affect respiratory function including fibrogenic response.

**Sub-chronic, Chronic:** No applicable information was found concerning any potential health effects resulting from sub chronic exposure to Ball Clay. The product contains crystalline silica and titanium dioxide as impurities. Chronic exposure by inhalation can cause silicosis and/or cancer.

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## Section 4 - FIRST AID MEASURES

**Eye Contact:** In case of contact, immediately flush eyes with plenty of water. Seek medical aid if necessary.

**Skin Contact:** Wash affected skin areas thoroughly with soap and water. Seek medical aid if necessary.

**Inhalation:** 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:** 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

**Flammability:** Not Flammable or Combustible

**Extinguishing Media:** Product will not burn.

Use appropriate extinguishing media for packaging material if applicable.

## Section 6 - ACCIDENTAL RELEASE MEASURES

Material is inert and nonreactive. Vacuum, pump or scoop spilled material into containers for reclaiming or disposal. If excessive dust is generated, provide adequate ventilation and 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.

## Section 7 - HANDLING AND STORAGE

Storage in a cool, dry location is recommended. Minimize dust generation & accumulation. Avoid confined spaces and areas with poor ventilation. Avoid eye and skin contact. Do not ingest this product. Avoid inhalation of product dusts. Wash thoroughly after handling.

## Section 8 - EXPOSURE CONTROLS/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>              |
|-----------------------------|---------------------------|----------------|-----------------------------|---|-------------------------------|
| Kaolin                      | 68% - 88%                 | 1332-58-7      | 10 mg/m <sup>3</sup> Total  | 15 mg/m <sup>3</sup> Total<br>5 mg/m <sup>3</sup> Resp. | 2 mg/m <sup>3</sup> Resp.     |
| Crystalline Silica, Quartz  | 10% - 30%                 | 14808-60-7     | 0.1 mg/m <sup>3</sup> Resp. | 0.1 mg/m <sup>3</sup> Resp.                             | 0.025 mg/m <sup>3</sup> Resp. |
| Titanium Dioxide            | 1.4% - 2.3%               | 13463-67-7     | 15 mg/m <sup>3</sup>        | 15 mg/m <sup>3</sup>                                    | 10 mg/m <sup>3</sup> Total    |

The following general hygiene considerations are recognized as common good industrial hygiene practices. Minimize contact or exposure to this product whenever possible. Avoid breathing dust. Avoid skin and eye contact. Wash thoroughly after handling and before eating or drinking.

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**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

|                                 |  |                               |                |
|---------------------------------|--|-------------------------------|----------------|
| <b>Physical State:</b>          | Solid  | <b>Boiling Point:</b>         | Not Applicable |
| <b>Appearance &amp; Odor:</b>   | Light gray to brown powder with earthy odor when wet | <b>Freezing Point:</b>        | Not Applicable |
| <b>Odor Threshold:</b>          | Unknown  | <b>Decomposition Point:</b>   | Not Applicable |
| <b>pH (Aqueous Suspension):</b> | 4.0 - 6.0  | <b>Vapor Pressure:</b>        | Not Applicable |
| <b>Specific Gravity:</b>        | ~2.6   | <b>Vapor Density:</b>         | Not Applicable |
| <b>% Solubility in Water:</b>   | Insoluble  | <b>Partition Coefficient:</b> | Not Applicable |
| <b>Melting Point:</b>           | 1569 °C - 1785 °C                                    | <b>Evaporation Rate:</b>      | Not Applicable |

LEL: Not Applicable  
UEL: Not Applicable  
Hazardous Combustion Products: None  
Explosion Data- Sensitivity to Static Discharge: Not Applicable

Flash Point: Not Applicable  
Auto-Ignition: Not Applicable  
Explosion Data- Sensitivity to Mechanical Impact: Not Applicable

## Section 10 - STABILITY AND REACTIVITY

**Chemically Stable?** Yes X No \_\_\_  
**Compatible with Other Substances?** Yes X No \_\_\_ (See below)  
**Conditions to Avoid:** None known  
**Incompatibility (Materials to Avoid):** None, inert and nonreactive  
**Possibility of Hazardous Reactions:** None known  
**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/m<sup>3</sup>).  
**Hazardous Polymerization:** Will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

**Kaolin** - CAS No. 1332-58-7

### Acute Health Hazards:

**Primary Routes of Entry:** Skin contact, eye contact, ingestion, inhalation

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.

Ingestion of large quantities may cause gastric distress.

**Kaolin - Chronic Health Hazards\*:** LD50 (oral and dermal): Not Available LC50 (inhalation): Not Available

**Carcinogenicity\*:** NTP? No

IARC\*? No

OSHA\*? No

**Mutagenicity:** None known

**Teratogenicity:** None known

**Reproductive Effects:** None known

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**Crystalline Silica, Quartz** CAS No. 14808-60-7

## Acute Health Hazards:

**Primary Routes of Entry:** Skin contact, eye contact, ingestion, inhalation

Eye contact may cause mechanical irritation.

Skin contact may aggravate existing dermatitis.

Inhalation from prolonged and continuous exposure to excessive quantities of dust may cause silicosis or cancer.

**Crystalline Silica, Quartz - Chronic Health Hazards\*:** LD50 (oral and dermal): Not Available LC50 (inhalation): Not Available

**Carcinogenicity\*:** NTP? Yes

IARC\*? Group 1

OSHA\*? No

**Mutagenicity:** Not Available

**Teratogenicity:** Not Available

**Reproductive Effects:** Not Available

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

**Titanium Dioxide** CAS No. 13643-67-7

## Acute Health Hazards:

**Primary Routes of Entry:** Skin contact, eye contact, ingestion, inhalation

Eye contact may cause mechanical irritation.

Skin contact may aggravate existing dermatitis.

Inhalation from prolonged and continuous exposure to excessive quantities of dust may cause cancer. May result in mild fibrosis (scarring of the lungs)

Not expected to be a hazard via ingestion.

**Titanium Dioxide - Chronic Health Hazards\*:** LD50 (oral and dermal): Not Available LC50 (inhalation): Not Available

**Carcinogenicity\*:** NTP? No

IARC\*? 2B

OSHA\*? No

**Mutagenicity:** Mammalian somatic cells.

**Teratogenicity:** Not Available

**Reproductive Effects:** Not Available

NIOSH has identified titanium dioxide as a potential occupational carcinogen.

The material may contain trace amounts (parts per trillion) of naturally occurring dioxin congeners (PCDD, PCDF) including TCDD. 2, 3, 7,8. TCDD has been classified as a known human carcinogen by the IARC in Monograph 69 (1997). These trace amounts are not believed to be a health risk, but Special Protections and Special Precautions (Section 8) are advised. If this material is used for food, feed, or cosmetic purposes, it is highly recommended to check whether it fulfills the requirements of relevant legislation, in particular with regard to dioxin content.

## Section 12 – ECOLOGICAL INFORMATION

**Ecotoxicity:** No data available. No adverse ecological effects are expected. May affect turbidity of water if discharged in large quantities to lakes or streams.

**Mobility:** This product is insoluble in water.

**Persistence and degradability:** This product is made from a naturally occurring, abundant, innocuous mineral.

**Bioaccumulative potential:** No data available. This product is not expected to accumulate in biota.

## Section 13 - DISPOSAL CONSIDERATIONS

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.)

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## Section 14 - TRANSPORT INFORMATION

**DOT Classification:** Not Regulated  
**IATA Classification:** Not Regulated  
**IMO Classification:** Not Regulated  
**Internal UN:** Not Regulated

## Section 15 - REGULATORY INFORMATION

**CERCLA:** Ball Clay is not a CERCLA listed hazardous substance.

**FDA:** Ball Clay is not listed in Code of Federal Regulations 21 CFR 186.1256 as GRAS (generally recognized as safe) for use in the manufacture of paper and paperboard that contact food.

**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:**

| <u>Immediate</u> | <u>Delayed</u> | <u>Fire</u> | <u>Pressure</u> | <u>Reactivity</u> |
|------------------|----------------|-------------|-----------------|-------------------|
| 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. 999999-99-4.

**California Proposition 65:** 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.

**NJ Special Health Hazardous Substances List [4]:** 2007 RTK Hazardous Substance List; Substance number 4016.

**PA Special Hazardous Substances List:** Regulated under PA Code Chapter 323

**Canadian DSL:** Listed, DSL (public); Part II, April 3, 1996

**RoHS:** Contains no substances in RoHS at or above reportable limits

**REACH Status:** Exempt. Product is a naturally occurring mineral

**SVHC:** Contains no substances on the current SVHC list

**EINECS (EU): EC#:** 310-127-6

**VOC Content:** Not applicable

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## NATIONAL INVENTORIES:

**DSL (Canada):** Listed  
**PICCS (Philippines):** Listed  
**KECL (Korea):** Listed  
**ENCS (METI) (Japan):** Listed  
**AICS (Australia):** Listed  
**IECSC (China):** Listed

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

## Section 16 - OTHER INFORMATION

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 American 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.

### HMIS Ratings

|                          |   |
|--------------------------|---|
| Health Hazard            | 2 |
| Flammability Hazard      | 0 |
| Reactivity Hazard        | 0 |
| Max. Personal Protection | E |

**NFPA 704M Hazard Classification:** Health: 2 Flammable: 0 Reactivity: 0

### References:

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.

IMA-Europe. Respirable Crystalline Silica (RCS) From a European Industry Perspective. Retrieved from <http://www.crystallinesilica.eu/classification-of-rc.html>.

Kaolin Clay - Tolerance Requirement Exemption 2/98, 63 Fed. Reg. 9427 (1998).

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Code of Federal Regulations 21 CFR 186.1256

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