

**MATERIAL SAFETY DATA SHEET**

To comply with OSHA's 29 CFR 1910.1200 and Bill No. 70 WHMIS Hazard Communication Standards.

**SECTION I. IDENTITY OF PRODUCT AND PRODUCER**

DATE PREPARED: May 10, 2000

DATE MAILED: 4-03-03

TRADE NAME: Sapphire

CHEMICAL NAME: KAOLIN, Hydrous Aluminum Silicate

CAS NUMBER 1332-58-7

**PRODUCER'S NAME AND ADDRESS (HQ):**Kentucky-Tennessee Clay Company  
5080 State Route 45 South  
Mayfield, KY 42066**TELEPHONE NUMBERS:**270-247-3061  
270-247-0293 FAX**EMERGENCY CONTACT:**

CHEMTREC: (800) 424-9300\*

\*To be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals.

**SECTION II. HAZARDOUS INGREDIENTS**

Free Silica (Quartz)*	Typically Less Than 1.0%	CAS NO. 14808-60-7
Titanium Dioxide	Typically Less Than 2.6%	CAS NO. 13463-67-7

\*Kaolins reported on this Company's Material Safety Data Sheet, Form 0005k, contain crystalline silica, as quartz less than 1% by dry weight depending on product type. Some of this silica is not fine enough to normally be considered respirable.

**SECTION III. PHYSICAL DATA**

FUSION RANGE:	1569 - 1785° C.	SPECIFIC GRAVITY:	2.4 - 2.7
SOLUBILITY IN WATER:	Negligible	PERCENT VOLATILE:	Below 100° C. None
VAPOR PRESSURE:	Not Applicable	pH:	3.5 - 7.5
ODOR AND APPEARANCE:	Earthy odor when wet, raw color light gray to white		

**SECTION IV. FIRE AND EXPLOSION DATA: Non-flammable****SECTION V. HEALTH HAZARD DATA** OSHA PEL: Respirable Crystalline Quartz (TWA-TLV) = 0.1 mg/m<sup>3</sup>; Kaolinite 5 mg/m<sup>3</sup>ACGIH TLV: Respirable Crystalline Quartz (TWA-TLV) = 0.1 mg/m<sup>3</sup>; Kaolinite 10 mg/m<sup>3</sup>  
Cristobalite & Tridymite (See **STABILITY**) (TWA-TLV) = 0.05 mg/m<sup>3</sup>NIOSH TWA: Respirable Crystalline Quartz = 0.05 mg/m<sup>3</sup>

ROUTE OF ENTRY: Inhalation

**HEALTH HAZARDS: WARNING:** This clay product contains crystalline silica which may cause delayed respiratory disease (silicosis) if inhaled over a prolonged period of time. Avoid breathing dust. Use NIOSH/MSHA approved respirator where TLV for crystalline silica may be exceeded.

IARC MONOGRAPH VOLUME 68, 1997 concludes that there is sufficient evidence that inhaled crystalline silica causes cancer in humans. IARC classification: Group I.

The NTP, in the Sixth Annual Report on Carcinogens, 1991, has added crystalline silica to its list of substances that are "reasonably anticipated to be carcinogens".

**WARNING:** This product contains Titanium Dioxide (TiO<sub>2</sub>). Inhalation may cause damage to respiratory system. Identified as a potential carcinogen by NIOSH. OSHA TWA for TiO<sub>2</sub> is 15 mg/m<sup>3</sup>.**FIRST AID: EYES:** Flush thoroughly with water for 10 to 15 minutes. Contact physician if irritation persists.**BREATHING:** If breathing difficulty develops, remove to fresh air. If breathing difficulty persists, contact physician.

## SECTION VI. REACTIVITY DATA

**STABILITY:** Kaolin is stable under ordinary 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 greater health hazards than quartz.

**INCOMPATIBILITY:** (Materials to avoid) - None

**HAZARDOUS POLYMERIZATION:** Will not occur

## SECTION VII. SPILL, LEAK, AND DISPOSAL INFORMATION

**ACTION TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:** Clean up and collect, minimizing dust. Do not exceed recommended PEL or TLV. Avoid Breathing Dust. Wear an approved respirator. **CAUTION:** When water is applied, product becomes slippery.

**WASTE DISPOSAL METHOD:** Follow federal, state and local regulations for solid waste disposal. Under RCRA (40 CFR Part 261) kaolin is not a hazardous waste.

**COMMUNITY RIGHT TO KNOW:** California's Proposition 65 lists crystalline silica as a carcinogen.

**OTHER PRECAUTIONS:** Product becomes slippery when wet. Use good personal hygiene. Wash hands prior to eating.

## SECTION VIII. SPECIAL PROTECTION INFORMATION

**VENTILATION:** Recommended method.

**RESPIRATORY PROTECTION:** If dust concentrations exceed recommended PEL or TLV for short time durations, use NIOSH/MSHA approved dust respirators. If spraying wet coatings, use NIOSH/MSHA dust/mist respirators.

**SKIN PROTECTION:** Wear gloves appropriately to the activity.

**EYE PROTECTION:** Wear tight fitting goggles if high dust concentrations exist. NIOSH recommends that contact lenses not be worn when working with crystalline silica.

- OTHER:**
1. Dust exposure levels in excess of appropriate PEL or TLV should be reduced by feasible engineering and/or administrative controls.
  2. It is recommended that the employer obtain a copy of the ASTM E 1132 information package, "Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust".
  3. Government regulations require that exposed personnel receive appropriate training in safe work habits when working with crystalline silica where the potential exists for exceeding the PEL or TLV.

## SECTION IX. SPECIAL PRECAUTIONS

Minimize dust generation and exposure. Do not breathe dust. TWA should not exceed TLV or PEL. ACGIH recommends periodic physical examinations for those employees who are exposed to respirable crystalline silica levels greater than 50% of the TLV or PEL.

Trace amounts of dioxin congeners 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 above are advised. Methods of transmission may include inhalation, ingestion, or dermal absorption.

Kaolin is not hazardous under DOT regulations. Manufacturers who crush and grind ceramic bodies fired to high temperatures should recognize possible presence of tridymite and/or cristobalite which have greater health hazards than quartz.

Data, information and recommendations recorded herein are believed to be accurate. Kentucky-Tennessee Clay Company makes no warranty, either expressed or implied, with respect thereto and disclaims all liability from reliance thereon. Standards may vary in different non-U.S. jurisdictions. Follow applicable guidelines.