MATERIAL SAFETY DATA SHEET

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name(s): **EPK Kaolin**
Common Names(s): Kaolin Clay, China Clay
Chemical Formula: $Al_2Si_2O_5(OH)_4$
CAS Number: 1332-58-7
Physical Form: Light gray to white powder

Distributed by:
Laguna Clay Company
14400 Lomitas Ave
City of Industry, CA 91746
1-800-4Laguna
info@lagunaclay.com
www.lagunaclay.com

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 - HAZARDS IDENTIFICATION

Ingredient	Wt. % (Approx.)	CAS No.	OSHA PEL*	ACGIH TLV*
Kaolin	~96%	1332-58-7	5 mg/m^3 Resp. 15 mg/m^3 Total	2 mg/m^3 Resp
Crystalline Silica, Quartz	~0.1-4%	14808-60-7	0.1 mg/m^3 Resp.	0.025 mg/m^3 Resp.
Titanium Dioxide	0.4%	13463-67-7	15 mg/m^3	10 mg/m^3
Water	<2%	7732-18-5		

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

Section 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Appearance: Light gray to white 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 kaolin 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. Kaolin 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 Kaolin 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.
Sub chronic, Chronic: No applicable information was found concerning any potential health effects resulting from sub chronic exposure to Kaolin. The product contains crystalline silica and titanium dioxide as impurities. Chronic exposure by inhalation and cause silicosis and/or cancer.

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Product Trade Name(s): **EPK Kaolin**
Common Names(s): Kaolin
Chemical Formula: $Al_2Si_2O_5(OH)_4$
CAS Number: 1332-58-7
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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

Hazardous Ingredient	Weight% (Approx.)	CAS No.	MSHA PEL	OSHA PEL	ACGIH TLV
Kaolin	~96%	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	~0.1-4%	14808-60-7	0.1 mg/m^3 Resp.	0.1 mg/m^3 Resp.	0.025 mg/m^3 Resp.
Titanium Dioxide	0.4%	13463-67-7	15 mg/m^3	15 mg/m^3	10 mg/m^3

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.

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.

MATERIAL SAFETY DATA SHEET

Product Trade Name(s): EPK Kaolin
Common Names(s): Kaolin
Chemical Formula: $Al_2Si_2O_5(OH)_4$
CAS Number: 1332-58-7
Physical Form: Light gray to white powder

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid	**Boiling Point:**	Not Applicable
Appearance & Odor:	Light gray to white powder with earthy odor when wet	**Freezing Point:**	Not Applicable
Odor Threshold:	Unknown	**Decomposition Point:**	Not Applicable
pH (Aqueous Suspension):	4.0 - 6.0	**Vapor Pressure:**	Not Applicable
Specific Gravity:	~2.6	**Vapor Density:**	Not Applicable
% Solubility in Water:	Insoluble	**Partition Coefficient:**	Not Applicable
Melting Point:	Not determined, > 1500°C	**Evaporation Rate:**	Not Applicable

LEL: Not Applicable
UEL: Not Applicable
Flash Point: Not Applicable
Auto-Ignition: Not Applicable
Hazardous Combustion Products: None
Explosion Data- Sensitivity to Mechanical Impact: Not Applicable
Explosion Data- Sensitivity to Static Discharge: Not Applicable

Section 10 - STABILITY AND REACTIVITY

Chemically Stable? Yes X No ___
Compatible with Other Substances? Yes X No ___
Conditions to Avoid: None known
Incompatibility (Materials to Avoid): None, inert and nonreactive
Possibility of Hazardous Reactions: None known
Hazardous Decomposition Products/By-Products: Kaolin 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^3.
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

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 1)." 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.

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) Kaolin 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 14 - TRANSPORT INFORMATION

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

Section 15 - REGULATORY INFORMATION

CERCLA: Kaolin is not a CERCLA listed hazardous substance.

MATERIAL SAFETY DATA SHEET

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Common Names(s): Kaolin
Chemical Formula: $Al_2Si_2O_5(OH)_4$
CAS Number: 1332-58-7
Physical Form: Light gray to white powder

FDA: (a) Clay (kaolin) $Al_2O_3 2SiO_2 nH_2O$, CAS Reg. No. 1332–58–7) consists of hydrated aluminum silicate. The commercial products of clay (kaolin) contain varying quantities of alkalis and alkaline earths. Clay (kaolin) is a white to yellowish or grayish fine powder. There are at least three different minerals, kaolinite, dickite, and nacrite, classified as kaolin. Kaolinite or china clay is whiter, less contaminated with extraneous minerals, and less plastic in water.

(b) In accordance with §186.1(b) (1), the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based upon the following current good manufacturing practice conditions of use:

(1) The ingredient is used in the manufacture of paper and paperboard that contact food.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this regulation do not exist or have been waived.

[47 FR 43367, Oct. 1, 1982]

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.

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

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# 310-194-1

VOC Content: Not applicable

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.

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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).

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

Code of Federal Regulations 21 CFR 186.1256