

## 1. Identification

<b>Product identifier</b>	<b>CLAYTONE® EM</b>
<b>Other means of identification</b>	
<b>Synonyms</b>	Organoclay
<b>Recommended use</b>	CLAYTONE® products are rheological additives used for gelling efficiency in oil based paints, stains, alkyd enamels and primers, epoxy systems and numerous other hydrophobic systems.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer</b>	
<b>Address</b>	BYK Additives Inc. 1212 Church Street, Gonzales TX 78629 USA
<b>Telephone number</b>	+1 (830) 672 2891
<b>Website</b>	www.byk.com
<b>e-mail address</b>	MSDSInfo.BYK.Additives@altana.com
<b>Emergency number</b>	CHEMTREC (International): +1 (703) 527 3887 CHEMTREC (US): (800) 424 - 9300

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Carcinogenicity	Category 1A
<b>Environmental hazards</b>	Not classified.	
<b>OSHA defined hazards</b>	Combustible dust	

### Label elements



**Signal word** Danger

### Hazard statement

H350 May form combustible dust concentrations in air.  
May cause cancer.

### Precautionary statement

#### Prevention

P201 Prevent dust accumulation to minimize explosion hazard.  
Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P264 Wash thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

#### Response

P308 + P313 If exposed or concerned: Get medical advice/attention.  
P362 Take off contaminated clothing and wash before reuse.  
P370 + P378 In case of fire: Use appropriate media to extinguish.

#### Storage

P405 Store locked up.

#### Disposal

P501 Dispose of contents/container (in accordance with related regulations).

### Hazard(s) not otherwise classified (HNOC)

WARNING! May form combustible dust concentrations in air (during processing) Material can be slippery when wet.

### Supplemental information

None.

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	%
Quaternary Ammonium Compd.,benzylbis(hydrogenated Tallow Alkyl)methyl, Salt With Bentonite	Organoclay	68153-30-0	97 - 100
Quartz		14808-60-7	< 3

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.
<b>Eye contact</b>	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth with water. Get medical attention if symptoms occur. If ingestion of a large amount does occur, seek medical attention.
<b>Most important symptoms/effects, acute and delayed</b>	None known. Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. No hazards which require special first aid measures.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ). Apply extinguishing media carefully to avoid creating airborne dust. Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed. Take precautionary measures against static discharge. Material can be slippery when wet.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. In case of fire and/or explosion do not breathe fumes.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	High concentration of airborne dust may form explosive mixture with air. This product is combustible at high temperatures. Material can be slippery when wet

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Use only non-sparking tools. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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**Methods and materials for containment and cleaning up**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner equipped with HEPA filter.

Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

Nonsparking tools should be used. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

No special environmental precautions required.

Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage**

**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Do not breathe dust from this material. Avoid contact with skin and eyes. Avoid prolonged exposure. Should be handled in closed systems, if possible. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Protect from moisture. Avoid dust formation. Store locked up. Keep away from heat, sparks and open flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Guard against dust accumulation of this material. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection**

**Occupational exposure limits**

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Quartz (14808-60-7)	TWA	0.1 mg/m3	Respirable.
		0.3 mg/m3	Total dust.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Additional components	Type	Value	Form
Nuisance dust. (CAS:N/A)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
	TWA	15 mppcf	Respirable fraction.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Quartz (14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

**US. ACGIH Threshold Limit Values**

Additional components	Type	Value	Form
Nuisance dust. (CAS:N/A)	TWA	10 mg/m3	Inhalable particles.
		3 mg/m3	Respirable particles.

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value	Form
Quartz (14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.
<b>Appropriate engineering controls</b>	<p>Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Use only appropriately classified electrical equipment and powered industrial trucks.</p> <p>Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).</p> <p>It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygendeficient environment.</p>
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	<p>Wear safety glasses with side shields.</p> <p>Use tight fitting goggles if dust is generated.</p>
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves. Use protective skin cream before handling the product. Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis.
<b>Other</b>	Wear suitable protective clothing. Normal work clothing (long sleeved shirts and long pants) is recommended.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
<b>Thermal hazards</b>	Not available.
<b>General hygiene considerations</b>	Do not breathe dust. When using, do not eat, drink or smoke. Avoid contact with eyes. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

<b>Appearance</b>	Powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Off-white.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not applicable
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not applicable
<b>Initial boiling point and boiling range</b>	Not applicable
<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	>= 0.1 g/l
<b>Flammability limit - upper (%)</b>	Not applicable
<b>Explosive limit - lower (%)</b>	Not applicable
<b>Explosive limit - upper (%)</b>	Not applicable
<b>Vapor pressure</b>	Not applicable
<b>Vapor density</b>	Not applicable
<b>Relative density</b>	Not available.

<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	partly soluble
<b>Auto-ignition temperature</b>	374 °F (190 °C) Thin Film Ignition
<b>Decomposition temperature</b>	Not applicable
<b>Viscosity</b>	Not applicable
<b>Other information</b>	
<b>Density</b>	1.40 - 1.80 g/cm3
<b>Percent volatile</b>	0 % estimated
<b>Specific gravity</b>	1.40 - 1.80

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Keep away from heat, sparks and open flame. Avoid dust close to ignition sources. Exposure to moisture. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Minimize dust generation and accumulation.
<b>Incompatible materials</b>	None known.
<b>Hazardous decomposition products</b>	No dangerous reaction known under conditions of normal use. No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Dust in the eyes will cause irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**      Dusts may irritate the respiratory tract, skin and eyes.

### Information on toxicological effects

#### Acute toxicity

Product	Species	Test Results
CLAYTONE® EM		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	2061.8557 mg/kg estimated
<i>Oral</i>		
LD50	Rat	5154.6392 mg/kg estimated

Components	Species	Test Results
Quaternary Ammonium Compd.,benzylbis(hydrogenated Tallow Alkyl)methyl, Salt With Bentonite (CAS 68153-30-0)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg for a similar substance.
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg for a similar substance.

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.
<b>Serious eye damage/eye irritation</b>	Dust in the eyes will cause irritation.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not available.

<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Quartz (CAS 14808-60-7) 1 Carcinogenic to humans.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Quartz (CAS 14808-60-7) Known To Be Human Carcinogen.

<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not available.
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Overexposure to dust may result in pneumoconiosis, a respiratory disease caused by inhalation of mineral dust, which can lead to fibrotic changes to the lung tissue, or silicosis, a respiratory disease caused by inhalation of silica dust, which can lead to inflammation and fibrosis of the lung tissue. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

**12. Ecological information**

<b>Ecotoxicity</b>	Not expected to be harmful to aquatic organisms. The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Components	Species	Test Results
Quaternary Ammonium Compd.,benzylbis(hydrogenated Tallow Alkyl)methyl, Salt With Bentonite (CAS 68153-30-0)		
<b>Aquatic</b>		
Algae	EC50	Selenastrum capricornutum (alga) > 100 mg/l, 72 hours for a similar substance.
		> 100 mg/l, 72 hours for a similar substance.
Crustacea	EC50	Daphnia > 100 mg/l, 48 hours for a similar substance.
	NOEC	Daphnia > 100 mg/l, 48 hours for a similar substance.
Fish	LC50	Zebra danio (Danio rerio) > 100 mg/l, 96 hours for a similar substance.
	NOEC	Zebra danio (Danio rerio) > 100 mg/l, 96 hours for a similar substance.

\* Estimates for product may be based on additional component data not shown.

<b>Persistence and degradability</b>	Not inherently biodegradable. No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available. Bentonite is almost insoluble and thus presents a low mobility in most soils
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Not expected to be harmful to aquatic organisms.

**13. Disposal considerations**

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

<b>Waste from residues / unused products</b>	Material should be recycled if possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Dispose of in accordance with local regulations. Can be landfilled, when in compliance with local regulations.
<b>Contaminated packaging</b>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### SARA 304 Emergency release notification

Not regulated.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - Yes  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**  
Not regulated.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

### US state regulations

#### US - Massachusetts RTK - Substance: Listed substance

Quartz (CAS 14808-60-7)

#### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

#### US. New Jersey Worker and Community Right-to-Know Act

Quartz (CAS 14808-60-7)

#### US. Pennsylvania Worker and Community Right-to-Know Law

Quartz (CAS 14808-60-7)

#### US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

#### US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Quartz (CAS 14808-60-7)

Listed: October 1, 1988

## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of New and Existing Chemicals (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

## 16. Other information, including date of preparation or last revision

**Issue date** Jan-09-2015

**Version #** 01

**Further information** In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.)

In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003)

According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

**Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available.

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