

SAFETY DATA SHEET

Prepared Clays, Pre-mixed, moist, clay formulas

1. Identification

Product Identifier

Product Name: Prepared Clays Product Class: Ceramic Clay Product Size: 25lb bag/50lb carton

Earthenwares: Low-Fire White
Low-Fire White Paper Clay

Specialty Clays: Coarse White
Raku

Recommended use of the chemical and restrictions on use

Application Hand Building, Wheel Throwing, Slab, Extruded or Sculptural use.

Details of the supplier of the Safety Data Sheet

Supplier Continental Clay Company
1101 Stinson Blvd NE
Minneapolis, MN 55413
USA
1 612 331 9332

Emergency Telephone Number

Emergency Telephone 1 800 432 2529

2. Hazard(s) Identification

Classification of the substance or mixture

Physical hazards: Not Hazardous

Health hazards: Carcinogen Category 1A
Specific target organ toxicity- repeated exposure Category 1

Environmental hazards: Not Classified

Label Elements

Hazard Statements:



WARNING

May cause cancer by inhalation

Causes damage to lungs through prolonged or repeated exposure by inhalation

Response: If exposed or concerned: Get medical advice

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

Do not eat, drink or smoke when using this product.

Wear protective gloves and safety glasses or goggles.

In case of inadequate ventilation wear respiratory protection.

Other Hazards

None present

3. *Composition/Information on Ingredients*

Component	CAS No.	Percent
Aluminum Oxide	1344-28-1	11-25%
Silicon Dioxide: Contains some Crystalline Silica (quartz)	14808-60-7	41-55%
Magnesium Oxide	1309-48-4	2-10%
Sodium Oxide	1313-59-3	.12-1.25%
Calcium Oxide	1305-78-8	.5-9%
Potassium Oxide	12136-45-7	<5%
Iron oxide	1332-37-2	<2%
Titanium Dioxide	13463-67-7	<2%

4. *First-aid Measures*

Inhalation Health Risk and Symptoms of Exposure: **No inhalation risk for wet clay.** First aid is not generally required. If irritation develops from breathing dust, move the person from the overexposure and seek medical attention if needed.

Skin/Eye Contact: **Skin-** Wash hands with soap and water after use
Eye- Rinse eyes with water for 5 minutes. Contact physician if irritation persists.

Ingestion Health Risks: No hazardous ingredients

Medical conditions generally aggravated by exposure: Unknown

5. *Fire-fighting Measures*

Flash Point: NA
Flammable Limits in Air: NA-Lower NA-Upper
Extinguishing Media: NA
Special Firefighting Procedures: No fire hazard
Unusual Fire and Explosion Hazard: No fire hazard associated with these clays

6. *Accidental Release Measures*

Personal precautions: For personal protection, see Section 8.
Environmental Precautions: Dispose in accordance to Local, State or Federal regulations.
Methods for cleaning up: Collect spillage for reclamation. Wipe surfaces with paper towel or sponge.

7. *Handling and Storage*

Precautions for safe handling

Usage Precautions: Wash hands and any other contaminated areas of the body with soap and water before leaving work site.

Storage Precautions: Always keep plastic bag tightly closed when not in use and for storage. Unclosed bags of clay will dry out.

8. Exposure Controls/personal protection

Ingredient comments:

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Crystalline Silica (quartz)	$\frac{10 \text{ mg}}{\text{m}^3}$ %SiO ₂ +2 TWA (respirable dust) $\frac{30 \text{ mg}}{\text{m}^3}$ %SiO ₂ + 2 TWA (total dust)	0.025 mg/m ³ TWA (respirable dust)	0.05 mg/m ³ TWA (respirable dust)
Iron Oxide	10 mg/m ³ TWA	5 mg/m ³ TWA (respirable fraction)	5 mg/m ³ TWA
Aluminum Oxide	15 mg/m ³ TWA	10 mg/m ³ TWA; Appendix A4 - Not Classifiable as a Human Carcinogen	No REL
Magnesium Oxide	15 mg/m ³ TWA	10 mg/m ³ TWA Not Classifiable as a Human Carcinogen	No Established REL
Manganese Dioxide	5 mg/m ³ Ceiling	0.2 mg/m ³ TWA (TLV listed as Manganese and inorganic compounds, as Mn)	1 mg/m ³ TWA; 3 mg/m ³ STEL
Calcium Oxide	5 mg/m ³ TWA	5 mg/m ³ Ceiling	5 mg/m ³ Ceiling
Potassium Oxide	No occupational exposure limits	No occupational exposure limits	No occupational exposure limits
Titanium Dioxide	15 mg/m ³ TWA	10 mg/m ³ TWA; Appendix A4 - Not Classifiable as a Human Carcinogen	No REL

If crystalline silica (quartz) is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica (quartz) is heated to more than 1470°C, quartz can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as tridymite or cristobalite is one half of the OSHA PEL for crystalline silica (quartz).

Exposure Controls

Appropriate engineering Controls: Use adequate general or local exhaust ventilation to maintain concentrations in the workplace below the applicable exposure limits listed above.

Eye/Face Protection: Safety glasses with side shields or goggles recommended if eye

contact is anticipated.

Hand Protection:

No specific hand protection required.

Hygiene Measures:

Using good personal hygiene practices is always appropriate. Keep a clean work space, cleaning up properly when done and not eating, drinking or smoking when using this product.

Respiratory Protection:

If it is not possible to reduce airborne exposure levels to below the OSHA PEL or other applicable limit with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators". The full document can be found at www.cdc.gov/niosh/npptl/topics/respirators; the user of this MSDS is directed to that site for information concerning respirator selection and use. The assigned protection factor (APF) is the maximum anticipated level of protection provided by each type of respirator worn in accordance with an adequate respiratory protection program. For example, an APF of 10 means that the respirator should reduce the airborne concentration of a particulate by a factor of 10, so that if the workplace concentration of a particulate was 150 ug/m³, then a respirator with an APF of 10 should reduce the concentration of particulate to 15 ug/m³. In using chemical cartridges, consideration must be given to selection of the correct cartridge for the chemical exposure and the maximum use concentration for the cartridge. In addition a cartridge change-out schedule must be developed based on the concentrations in the workplace.

Assigned protection factor ¹	Type of Respirator (Use only NIOSH-certified respirators)
10	Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter. ² Appropriate filtering facepiece respirator. ^{2,3} Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter. ² Any negative pressure (demand) supplied-air respirator equipped with a half-mask.
25	Any powered air-purifying respirator equipped with a hood or helmet and a high efficiency (HEPA) filter. Any continuous flow supplied-air respirator equipped with a hood or helmet
50	Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s). Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter. Any negative pressure (demand) supplied-air respirator equipped with a full facepiece. Any continuous flow supplied-air respirator equipped with a tight-fitting facepiece (half or full facepiece). Any negative pressure (demand) self-contained respirator equipped with a full facepiece.
1,000	pressure-demand supplied-air respirator equipped with a half-mask.

1. The protection offered by a given respirator is contingent upon (1) the respirator user adhering to complete program requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.
2. Appropriate means that the filter medium will provide protection against the particulate in question.
3. An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.

9. *Physical and Chemical Properties*

Information on basic physical and chemical properties

Appearance	Solid
Color	Various Colors
Odor	None
Odor Threshold	Not Determined
pH	6-8
Melting /Freezing Point	*****
Initial boiling point and range	Not Determined
Flash Point	Not Applicable
Evaporation Rate	No information available
Flammability	Not applicable
Upper/Lower explosive limits	Not applicable
Vapor Pressure	Not applicable
Relative Density	Variable, always greater than 1.0
Solubility	Insoluble in water*****
Partition coefficient	No information available
Auto-ignition temperature	Not applicable
Decomposition Temperature	Not determined
Viscosity	Not applicable

10. *Stability and Reactivity*

Reactivity	No known reactivity hazards associated with this product
Stability	No Stability Concerns
Possibility of hazardous Reactions:	Will not occur

11. *Toxicological Information*

Toxicological effects

Acute effects of exposure:

Inhalation: Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath.

Ingestion: Ingestion in an unlikely route of exposure. If dust is swallowed, it may irritate the mouth and throat.

Skin contact: No adverse effects are expected.

Eye contact: Particulates may cause abrasive injury.

Chronic effects: Prolonged inhalation of respirable crystalline silica may cause lung disease, silicosis, lung cancer and other effects as indicated below.

The method of exposure that can lead to the adverse health effects described below is inhalation.

A. SILICOSIS Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute:

Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years (10 to 20 or more) of prolonged repeated inhalation of relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Complicated silicosis or PMF symptoms, if present, are shortness of breath and cough. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).

Accelerated Silicosis can occur with prolonged repeated inhalation of high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur after the repeated inhalation of very high concentrations of respirable crystalline silica over a short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, weakness and weight loss. Acute silicosis is fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that "crystalline silica in the form of quartz or cristobalite dust is carcinogenic to humans (Group 1)". For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "A Review of Human Carcinogens: Arsenic, Metals, Fibres and Dusts " (2011).

NTP classifies "Silica, Crystalline (respirable size)" as Known to be a human carcinogen.

C. AUTOIMMUNE DISEASES

Several studies have reported excess cases of several autoimmune disorders -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers.

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to tuberculosis bacteria. Individuals with chronic silicosis have a three-fold higher risk of contracting tuberculosis than similar individuals without silicosis.

E. KIDNEY DISEASE

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silicaexposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", Nephron, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Sources of information:

The ***NIOSH Hazard Review - Occupational Effects of Occupational Exposure to Respirable Crystalline Silica*** published in April 2002 summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupational exposures to respirable crystalline silica. The NIOSH Hazard Review is available from NIOSH - Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or through the NIOSH web site, www.cdc.gov/niosh/topics/silica, then click on the link "NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica".

For a more recent review of the health effects of respirable crystalline silica, the reader may consult Fishman's Pulmonary Diseases and Disorders, Fourth Edition, Chapter 57. "Coal Workers' Lung Diseases and Silicosis".

Finally, the US Occupational Safety and Health Administration (OSHA) published a summary of respirable crystalline silica health effects in connection with OSHA's Proposed Rule regarding occupational exposure to respirable crystalline silica. The summary was published in the September 12, 2013 Federal Register, which can be found at www.federalregister.gov/articles/2013/09/12/2013-20997/occupational-exposure-to-respirablecrystalline-silica.

Numerical measures of toxicity:

Crystalline Silica (quartz): LD50 oral rat >22,500 mg/kg

12. Ecological Information

Ecotoxicity: Crystalline silica (quartz) is not known to be ecotoxic.

Persistence and Degradability: Silica is not degradable.

Bioaccumulative Potential : Silica is not bioaccumulative.

Mobility in Soil Semi Mobile

Other adverse effect None known

13. Disposal Considerations

Waste Treatment Methods

General Information

Dispose of any product or container in accordance with local and federal regulations. When handling waste, the safety precautions of handling the product should be considered.

14. Transport information

UN number: None
UN proper shipping name: Not regulated
Transport hazard classes(es): None
Packing group, if applicable: None
Environmental hazards: None
Special precautions: None known.

15. Regulatory Information

UNITED STATES (FEDERAL AND STATE)

TSCA Status: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: This product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq. CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302. Emergency Planning and Community Right to Know Act (SARA Title III): This product contains the following chemicals subject to SARA 302 or SARA 313 reporting: None above the de minimus concentrations. Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

16. Other Information

Date of preparation/revision: June 30, 2016

Hazardous Material Information System (HMIS):

Health *

Flammability 0

Physical Hazard 0

Protective Equipment E *

For further information on health effects, see Sections 2, 8 and 11 of this MSDS.

National Fire Protection Association (NFPA):

Health 0

Flammability 0

Instability 0

Web Sites with Information about Effects of Crystalline Silica Exposure:

The U.S. National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) maintain sites with information about crystalline silica and its potential health effects.

For NIOSH, <http://www.cdc.gov/niosh/topics/silica>;

for OSHA, <http://www.osha.gov/dsg/topics/silicacrystalline/index>.

The IARC Monograph that includes crystalline silica, Volume 100C, can be accessed in PDF form at the IARC web site, <http://monographs.iarc.fr/ENG/Monographs/PDFs/index.php>.

Continental Clay Company Disclaimer

The information and recommendations contained herein are based upon data believed to be up to date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by purchase, resale, use or exposure to our silica. Customers and users of silica must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.