

MAR 10 1998



AMERICAN COLLOID COMPANY

One North Arlington • 1500 West Shure Drive
 Arlington Heights, Illinois 60004-7803 • U.S.A.
 Tel. (847) 392-4600 • Telex: ITT 4330321
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MATERIAL SAFETY DATA SHEET - May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements. 301
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PRODUCT NAME: VOLCLAY FOUNDRY 13T

Section I MANUFACTURER'S INFORMATION

Manufacturer's Name & Address:

American Colloid Company
 1500 West Shure Drive
 One North Arlington
 Arlington Heights, Illinois 60004

Telephone Number for Information: 847-392-4600
 Date Prepared: January 23, 1998

Section II HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Crystalline Quartz CAS# 14808-60-7 (naturally occurring contaminant)	-	-	*	1-2%
Respirable Crystalline Quartz present (TWA) proposed (TWA)	0.1mg/m ³	0.1mg/m ³ TWA 50ug/m ³ TWA	NIOSH 50ug/m ³ TWA -	<1-2% -
Nuisance Dust				
Respirable	5mg/m ³	5mg/m ³	-	-
Total Dust	15mg/m ³	10mg/m ³	-	-

*** WARNING:**

This clay product contains a small amount of crystalline silica (quartz) which may cause delayed respiratory disease 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 Monographs on the evaluation of the Carcinogenic Risk of Chemicals to Humans (volume 68, 1997) concludes that crystalline silica (quartz) is carcinogenic to humans in the form of quartz. IARC classification 1.

The small quantities of crystalline silica (quartz) found in this product are, under normal conditions, naturally coated with an unremovable layer of amorphous silica and/or bentonite clay. IARC (vol. 68, 1997, pp 191-192) states that crystalline silica (quartz) can differ in toxicity depending on the minerals with which it is combined, citing studies in IARC (vol. 42, 1987, p 86) which states that the toxic effect of crystalline silica (quartz) is reduced by the "protective effect.....due mainly to clay minerals....".

National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter air (0.5 mg/m³) as determined by a full shift sample up to 10 hour working day, 40 hours per week. See: 1974 NIOSH criteria for a recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information.

PEL means OSHA Permissible Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

TWA means 8 hour time weighted average.

Note: The Permissible Exposure Limits (REL) reported above are the pre-1989 limits that were reinstated by OSHA June 30, 1993 following a decision by the United States Circuit Court of Appeals for the 11th Circuit. These PELs are now being enforced by Federal OSHA. More restrictive exposure limits may be enforced by some other jurisdictions.



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PRODUCT IDENTIFICATION

Chemical Name: Bentonite Clay (100%)
Chemical Family: Natural Mineral, Montmorillonite
CAS No.: 1302-78-9 Bentonite is on the TSCA inventory.
FORMULA: Naturally occurring hydrated aluminosilicate of sodium, calcium, magnesium, and iron
MFPA/HMIS: Health - 1, Fire - 0, Reactivity - 0, Specific Hazard - See Section VI
Dot Class: Not Regulated

Section III PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point	- Not Applicable	Specific Gravity (H₂O = 1)	- 2.5
Vapor Pressure (mm Hg.)	- Not Applicable	Melting Point	- Not Applicable
Vapor Density (AIR = 1)	- Not Applicable	Evaporation Rate (Butyl Acetate = 1)	- Not Applicable
Solubility in Water	- Negligible		
Appearance and Odor	- Pale grey to buff powder or granules, odorless.		

Section IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	- Not Applicable		
Flammable Limits	- Not Applicable *	LEL -	UEL -
Extinguishing Media	- Not Applicable		
Special Fire Fighting Procedures	- Inorganic Mineral/Non-Flammable		
Unusual Fire and Explosion Hazards	- Not Applicable		

Section V REACTIVITY DATA

Stability: Stable - X	Conditions to Avoid - None Known
Incompatibility (Materials to Avoid): - None Known	
Hazardous Decomposition or By-products: - None Known	
Hazardous Polymerization: Will Not Occur - X	Conditions to Avoid - None Known

Section VI HEALTH HAZARD DATA

This product is chemically inert, non-combustible mineral. A single exposure will not result in serious adverse effects. Excessive occupational, uncontrolled inhalation of dust may cause lung disease, silicosis, with symptoms of shortness of breath and reduced pulmonary function.

Route(s) of Entry: Inhalation? Yes Skin? No Ingestion? No
Health Hazards (Acute and Chronic) - May cause delayed respiratory disease if dust inhaled over a prolonged period of time.

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may cause irritation of the nose, throat and respiratory passages. Inhalation of dust may have the following serious chronic health effects:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.



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Cancer Status: The International Agency for Research on Cancer has determined that crystalline silica inhaled in the form quartz or crystobalite from occupational sources is carcinogenic to humans (Group 1-carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibers (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program classifies respirable crystalline silica as "reasonable anticipated to be a carcinogen". For further information See: "Adverse effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, page 761-765, 1997.

Other data with possible relevance to Human Health: The small quantities of crystalline (quartz) found in this product are, under normal naturally coated with an unremovable layer of amorphous silica and/or clay. IARC (Vol. 68, 1997, pp 191-192) states that crystalline silica (quartz) can differ in toxicity depending on the minerals with which it is combined, citing studies in IARC (vol 42, 1987, p 86) which states that the toxic effect of crystalline silica (quartz) is reduced by the "protective effect....due mainly to clay minerals....".

Skin Contact: No adverse effects expected.

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See "Inhalation" subsection above with respect to silicosis, cancer status and other data with possible relevance to human health.

Signs and Symptoms of Exposure - There are generally no signs or symptoms of exposure to crystalline silica (quartz). See "Inhalation" subsection above for symptoms of silicosis.

Medical Conditions Generally Aggravated by Exposure - Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation should not be exposure to crystalline silica (quartz) dust.

Emergency and First Aid Procedures

Eye Contact - Flush the eyes immediately with large amounts of water. lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Gross inhalation - Remove to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult, have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact No first aid should be needed since this product does not affect the skin. Wash exposed, skin with soap and water before breaks and at the end of the shift.

Ingestion If large amounts are swallowed, get immediate medical attention.

Section VII

PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled - Vacuum if possible to avoid generating airborne dust. Avoid breathing dust. Wear an approved respirator. Avoid adding water, the product will become slippery when wet.

Waste Disposal Method - Follow federal, state and local regulations for solid waste

Handling and Storing Precautions - Do not breath dust. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Use good housekeeping in storage and use areas to prevent accumulation of dust in work areas. Use adequate ventilation and dust collection. Maintain and use proper, clean respiratory equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Material Safety Data Sheet. Warn and Train employees in accordance with state and federal regulations.

Other Precautions - Slippery when wet.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS - USERS IN CASE OF RESALE) BY POSTING AND OTHER MEANS OF THE HAZARDS AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.



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Section VIII

CONTROL MEASURES

Respiratory Protection: Use appropriate respiratory protection for respirable particulate based on consideration of airborne workplace concentration and duration of exposure arising from intended end use. Refer to the most recent standards of ANSI (z88.2) OSHA (29 CFR 1910.134), MSHA (30 CFR Parts 56 and 57) and NIOSH Respirator Decision Logic.

Ventilation: Use local exhaust as required to maintain exposures below applicable occupational exposure limits (See Section II). See also ACGIH "Industrial Ventilation - A Manual for Recommend Practice", (current edition).

Protective Gloves - Recommended

Eye Protection - Safety glasses or goggles recommended.

Other Protective Clothing or Equipment - As appropriate for work environment. Dusty clothing should be laundered before reuse.

Transportation Data: U.S. DOT Hazard Classification

Proper Shipping Name:	Not regulated
Technical Name:	N/A
UN Number:	N/A
Hazard Class/Packing Group:	N/A
Labels Required:	None
DOT Packaging Requirements:	N/A
Exceptions:	N/A

Section IX

OTHER REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 reporting: Chronic Health

SARA 313: This product contains the following chemicals subject to annual reporting requirements under the SARA Section 313 (40 CFR 372): None

CERCLA Section 103 Reportable Quantity: None

California Proposition 65: THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE HARM: This product contains Crystalline Silica (Respirable); However, the user should note that the small quantities of crystalline silica (quartz) found in this product are, under normal conditions, naturally coated with an unremovable layer of amorphous silica and/or bentonite clay. IARC (vol. 68, 1997, pp 191-192) states that crystalline silica (quartz) can differ in toxicity depending on the minerals with which it is combined. Citing studies in IARC (vol. 42, 1987, p 86) which states that the toxic effect of crystalline silica (quartz) is reduced by the "protective effect....due mainly to clay minerals...".

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from notification requirements.

European Inventory of Commercial Chemical Substances: All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements. (The EINECS number for Quartz: 231-545-5).

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Japan MITI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

Canadian WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic Material causing other Toxic Effects).



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Section X

OTHER INFORMATION

European Community Labeling Classification:	Harmful (Xn)		
European Community Risk and Safety Phrases:	R40, R48, S22		
MPPA Hazard Rating:	Health: 1	Fire: 0	Reactivity: 0
HMIS Hazard Rating:	Health: *	Fire: 0	Reactivity: 0

*Warning - Chronic health effect possible - inhalation of silica dust may cause lung injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See Section II.

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, American Colloid Company cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.