SAFETY DATA SHEET

1. Identification

Product identifier VOLCLAY® FOUNDRY

Other means of identification

Synonyms Smectite * Bentonite * Bentonite, Sodian * Bentonite, Calcian * Sodium-activated Bentonite * Montmorillonite

Recommended use Not available.

Recommended restrictions None known. 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.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name American Colloid Company, an MTI Company

Address 2870 Forbs Avenue
Hoffman Estates, IL 60192
United States

Telephone General Information 800 426-5564

Website http://www.colloid.com/MCST/

E-mail safetydata@amcol.com

Emergency phone number .

Americas 1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962 Access Code 333562

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The substance does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Bentonite	Smectite Bentonite Bentonite, Sodian Bentonite, Calcian Sodium-activated Bentonite Montmorillonite	1302-78-9	100

Constituents

Chemical name	CAS number	%
CALCIUM CARBONATE	471-34-1	
SMECTITE GROUP MINERALS	1318-93-0	
QUARTZ	14808-60-7	<= 8
CRISTOBALITE	14464-46-1	<= 2

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. Bentonite is a UVCB substance sub-type 4. The purity of the product is 100 % w/w. Bentonite is composed mainly of smectite group minerals but the composition is varied, as expected for a UVCB substance, and other mineral constituents will be present in small and varying amounts. These minor constituents are not relevant for classification and labelling.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8. The purity of the product is 100% w/w. Impurities are not applicable for a UVCB substance.

4. First-aid measures

Inhalation If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist. No specific first aid measures noted.

Skin contact Get medical attention if irritation develops and persists. No specific first aid measures noted. Wash skin with soap and water.

Eye contact No specific first aid measures noted. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion No specific first aid measures noted. Rinse mouth thoroughly. Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and delayed Dust in the eyes will cause irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information No hazards which require special first aid measures. Provide general supportive measures and treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Use any media suitable for the surrounding fires.

Unsuitable extinguishing media Not applicable, non-combustible.

Specific hazards arising from the chemical None known. The product itself does not burn.

Special protective equipment and precautions for firefighters Material can be slippery when wet.

Fire fighting equipment/instructions In the event of fire, cool tanks with water spray. Material can be slippery when wet.

Specific methods Cool containers exposed to flames with water until well after the fire is out.

General fire hazards No unusual fire or explosion hazards noted. This material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Material can be slippery when wet. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Avoid inhalation of dust from the spilled material. For personal protection, see section 8 of the SDS. No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

Methods and materials for containment and cleaning up If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container.

Environmental precautions Prevent further leakage or spillage if safe to do so. No special environmental precautions required.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities

No special restrictions on storage with other products. Store in a dry area. Store in original tightly closed container. Keep the container dry. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Guard against dust accumulation of this material.

8. Exposure controls/personal protection

Occupational exposure limits

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

Constituents	Type	Value	Form
INERT OR NUISANCE DUSTS	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

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

Constituents	Type	Value	Form
INERT OR NUISANCE DUSTS	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

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 OEL, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use tight fitting goggles if dust is generated. Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection

Hand protection

No protection is ordinarily required under normal conditions of use.

Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Not applicable.

General hygiene considerations

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. Use good industrial hygiene practices in handling this material.

9. Physical and chemical properties

Appearance

Lump, granular or fine powder.

Physical state

Solid.

Form

Powder. Various.

Color

Various.

Odor

None.

Odor threshold

Not applicable.

pH

8.5 - 11

Melting point/freezing point

> 842 °F (> 450 °C) / Not applicable.

Initial boiling point and boiling range

Not applicable.

Flash point

Not applicable.

Evaporation rate

Not available.

Flammability (solid, gas)

This product is not flammable.

Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.6 g/cm³
Solubility(ies)	
Solubility (water)	< 0.9 mg/l
Partition coefficient (n-octanol/water)	Not applicable. Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	> 932 °F (> 500 °C)
Viscosity	Not applicable.
Viscosity temperature	Not applicable.
Other information	
Bulk density	0.9 - 1.4 g/cm³
Explosive limit	Not applicable.
Explosive properties	Not explosive
Explosivity	Not applicable.
Flame extension	Not applicable.
Flammability	Not applicable.
Flammability (flash back)	Not applicable.
Flammability (Heat of combustion)	Not applicable.
Flammability (Train fire)	Not applicable.
Flammability class	Not applicable.
Flash point class	Not flammable
Molecular formula	UVCB Substance
Molecular weight	Not applicable.
Oxidizing properties	None.
Percent volatile	0 %
pH in aqueous solution	8.5 - 11
Specific gravity	Not applicable.
VOC (Weight %)	CARB 0 %

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Moisture. Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	None known.
Hazardous decomposition products	None.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	Not classified.
Eye contact	Dust in the eyes will cause irritation.
Ingestion	Not classified.
Symptoms related to the physical, chemical and toxicological characteristics	None known.

Information on toxicological effects

Product	Species	Test Results
VOLCLAY® FOUNDRY (CAS 1302-78-9)		
Acute		
Inhalation		
Dust		
LC50	Rat	> 5.27 mg/l, 4 hr OECD 436
Oral		
Dust		
LD50	Rat	> 2000 mg/kg OECD 425

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

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Dust in the eyes will cause irritation. Mild irritant to eyes (according to the modified Kay & Calandra criteria)
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	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. No carcinogenicity data available for this product. Sepiolite was evaluated by IARC as class 3 ("Cannot be classified as to carcinogenicity to humans"). Based on read-across with sepiolite, bentonite was assessed as non-carcinogenic. Therefore classification of bentonite for carcinogenicity is not warranted.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity 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.

Product		Species	Test Results
Bentonite (CAS 1302-78-9)			
Aquatic			
Algae	EC50	Freshwater algae	> 100 mg/l, 72 hours
Crustacea	EC50	Coon stripe shrimp (Pandalus danae)	24.8 mg/l, 96 hours

Product		Species	Test Results
		Daphnia	> 100 mg/l, 48 hours
		Dungeness or edible crab (Cancer magister)	81.6 mg/l, 96 hours
Fish	LC50	Freshwater fish	16000 mg/l, 96 hours
		Marine water fish	2800 - 3200 mg/l, 24 hours

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

Persistence and degradability Not relevant for inorganic substances

Bioaccumulative potential Will not bio-accumulate.

Mobility in soil Bentonite is almost insoluble and thus presents a low mobility in most soils.

Mobility in general The product has poor water-solubility.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. 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).

Contaminated packaging 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. Store containers and offer for recycling of material when in accordance with the local regulations.

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

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

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.
Food and Drug Administration (FDA)	Total food additive Direct food additive GRAS food additive

US state regulations

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

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

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

Not regulated.

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

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

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 Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
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)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date	31-March-2014
Revision date	10-June-2015
Version #	07
Further information	This safety datasheet only contains information relating to safety and does not replace any product information or product specification.
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0

List of abbreviations

SWERF = Size-Weighted Relevant Fine Fraction methodology is a scientific method developed to quantify the content of respirable particles within a bulk product. All details about the SWERF method are available at www.crystallinesilica.eu.

UVCB = a substance of Unknown or Variable composition, Complex reaction products or Biological materials

References

For any information on literature references or toxicity/ecotoxicity studies, please contact the supplier.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

Revision Information

GHS: Classification