



MATERIAL SAFETY DATA SHEETS

SECTION I

PRODUCT AND COMPANY IDENTIFICATION

Product: Bentonite

This MSDS is valid for all grades and catalog #'s

Synonyms: Not available.

Formula: Not applicable.

Manufacturer: PHARMCO-AAPER
58 Vale Road
Brookfield, Connecticut 06804, USA
Phone (203) 740-3471
Fax (203) 740-3481

1101 Isaac Shelby Drive
Shelbyville, KY 40065
Phone (502) 633-0650
Fax (502) 633-0685

Emergency Contact:
CHEMTREC 1-800-424-9300

SECTION II

COMPOSITION / INFORMATION ON INGREDIENTS

% by weight	Material	CAS #	TLV/PEL	LC50/LD 50
>98 <2	Bentonite	1480-	TWA: 0.05	Not Available
	Quartz	60-7	(mg/m ³) from ACGIH (TLV) [United States] [1999]	
	(Crystalline silica)		Inhalation Respirable.	
			TWA: 0.1 (mg/m ³) from OSHA (PEL) [United States]	
			Inhalation Respirable.	
			TWA: 0.3 (mg/m ³) [United Kingdom (UK)]	
			Inhalation Respirable.	
			TWA: 0.2 (mg/m ³) [Australia]	
			Inhalation Respirable.	
			TWA: 0.1 (mg/m ³) [Canada]	
			Inhalation Respirable.	

SECTION III

HAZARDS IDENTIFICATION

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects: Hazardous in case of inhalation.

CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by NIOSH [Quartz]. Classified A2 (Suspected for human.) by ACGIH [Quartz].

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to lungs, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION IV

FIRST AID

Obtain medical attention for all cases of over-exposure.

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Hazardous Skin Contact: Not available.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Hazardous Inhalation: Not available.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Hazardous Ingestion: Not available.

SECTION V

FIRE FIGHTING MEASURES

Fire:

Flammability of the Product: Non-flammable.

Auto-Ignition temperature: Not applicable.

Flash point: Not applicable.

Flammable limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards: Not applicable.

Explosion Hazards: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Extinguishing Media: Not applicable.

Special Information: Heating a mixture of powdered magnesium and silica causes a violent explosion. (Quartz)

SECTION VI

SPILL/ACCIDENTAL RELEASE MEASURES

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill: Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

SECTION VII

HANDLING AND STORAGE

Precautions: Do not breathe dust. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Hygroscopic

SECTION VIII

EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: For Bentonite (as nuisance dust or particulates not otherwise specified containing less than 1% free crystalline silica): TWA: 10 (mg/m³) from ACGIH (TLV) [United States] Inhalation Total. TWA: 3 (mg/m³) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 15 (mg/m³) from OSHA (PEL) [United States] Inhalation Total. TWA: 5 (mg/m³) from OSHA (PEL) [United States] Inhalation Respirable. For Quartz (crystalline silica): TWA: 0.1 (mg/m³) from ACGIH (TLV) [United States] Inhalation Respirable. TWA: 0.1 (mg/m³) or 10/(%SiO₂ + 2)/mg/m³ from OSHA (PEL) [United States] Inhalation Respirable. TWA: 0.3 (mg/m³)

or 30/(%SiO₂ + 2)/mg/m³ from OSHA (PEL) [United States] Inhalation Total. TWA: 0.05 (mg/m³) from NIOSH [United States] Inhalation Respirable. TWA: 0.1 (mg/m³) [Canada] Inhalation Respirable. TWA: 0.3 [Canada] Inhalation Total. TWA: 0.3 [United Kingdom (UK)] Inhalation Total. Consult local authorities for acceptable exposure limits.

SECTION IX

PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance: Solid. (Powdered solid.)

Molecular Weight: Not applicable

Odor: Odorless.

Taste: Tasteless.

Color: Beige. Buff. Pale gray Tan.

pH (1% Solution in Water): Not applicable.

Boiling Point: Not available.

Melting Point: Not available.

Critical Temperature: Not available.

Specific Gravity: 2.5 - 2.6 (Water = 1)

Vapor Pressure (mm Hg): Not applicable

Vapor Density (Air=1): Not available.

Volatility: Not available.

Odor Threshold: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Water/Oil Dist. Coefficient: The product is insoluble in water and oil.

Ionicity (in water): Not available.

Dispersion Properties: Is not dispersed in cold water, hot water.

Solubility: Insoluble in cold water, hot water. Insoluble in common organic solvents, acids. In the presence of water, it forms a translucent and viscous suspension.

SECTION X

STABILITY/REACTIVITY INFORMATION

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Water/Moisture. Volume is significantly increased when water is added.

Incompatibilities: Not available.

Corrosivity: Not available.

Special Information: Absorbs moisture from the air. Hygroscopic; keep container tightly closed.

SECTION XI

TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: LD50: Not available. LC50: Not available.

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified 1 (Proven for human.) by IARC, 1 (Clear evidence.) by NTP, + (Proven.) by NIOSH [Quartz]. Classified A2 (Suspected for human.) by ACGIH [Quartz]. May cause damage to the following organs: lungs, upper respiratory tract.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Information on Toxicity to Animals: Lowest Published Lethal Dose/Conc: LCL [Human] - Route: Inhalation; Dose: 300 ug/m³/10Y intermittent (Quartz)

Special Information on Chronic Effects/Toxicity on Humans: Bentonite may cause cancer based on animal test data. It is considered an equivocal (questionable) tumorigenic agent; with reported continuous lowest toxic oral dose (TDLo) in mice of 12,000 g/kg/28 week causing liver tumors (RTECS, 2003). This product also contains a small amount of naturally occurring quartz (crystalline silica). Chronic inhalation of quartz (crystalline silica) can cause silicosis (a specific form of pneumoconiosis resulting from inhalation of crystalline silica), and may also affect blood, and the liver. Chronic inhalation of quartz (crystalline silica) may cause cancer. Risk of cancer depends upon duration and level of exposure. Acute Potential Health Effects:

on other Toxic Skin: It may cause minor skin irritation and drying Eyes: Can cause eye irritation by mechanical action. May cause conjunctivitis, eye injury. Inhalation: Can cause respiratory tract irritation with coughing, sneezing, shortness of breath, difficulty breathing. May produce delayed pulmonary edema. Ingestion: Expected to be a low hazard. Ingestion without concomitant ingestion of fluids may result in intestinal obstruction. Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may cause pneumoconiosis, bronchospasm, asthma. Symptoms may include coughing, wheezing, shortness of breath, difficulty breathing, reduced lung function, repeated non-specific chest illness. This product contains a small amount of naturally occurring quartz (crystalline silica). Chronic inhalation of quartz (crystalline silica) can cause silicosis (a specific form of pneumoconiosis resulting from inhalation of crystalline silica), and may also affect blood, and the liver. Chronic inhalation of quartz (crystalline silica) may cause cancer. Risk of cancer depends upon duration and level of exposure.

SECTION XII ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: Not available.

Special Information on Products of Biodegradation: Not available.

SECTION XIII DISPOSAL CONSIDERATIONS

Waste Disposal: Recycle, if possible. Consult your local or regional authorities.

SECTION XIV TRANSPORTATION INFORMATION

DOT Classification: DOT Not a DOT controlled material (United States).

UN: Not applicable.

Special Provisions for Transport: Not applicable.

SECTION XV REGULATORY INFORMATION

Federal and State Regulations: Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are: **NONE**

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are: **NONE**

Pennsylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: **NONE**

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are: **NONE**

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are: **NONE**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: **Quartz (crystalline silica)**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: **No products were found.**

Other Classifications:
WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC). untested mixture that may contain at least 0.1% of a carcinogen (crystalline silica). untested mixture that may contain at least 1.0% of a product causing chronic toxicity (crystalline silica). Class D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC): R36/37/38- Irritating to eyes, respiratory system and skin.

Protective Equipment: Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

References: Not available.

Other Special Considerations: Major Uses: Emulsifier for oils; as a base for plasters; pharmaceutical aid (suspending agent); liquid clarifier; reagglomerating agent for pelletizing iron ore; cracking catalyst for petroleum; sealing, thickening and suspending agent for drilling mud; component of foundry molding sands; lubricant for extrusion of animal feed; absorbent for purifying oils, fats, hydrocarbons and waxes; absorbent in pet litter; in sugar purification and in brewing and paper industries; clarifying agent for food.

The information contained herein is based on data considered to be accurate based on the material as packaged. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It is the user's obligation to determine the conditions of safe use of the product. While this MSDS is based on technical data judged to be reliable, PHARMCO-AAPER assumes not responsibility for the completeness or accuracy of the information contained herein.