

APPENDIX D

MATERIAL SAFETY DATA SHEET FOR BENTONITE

**WYO-BEN -- EXTRA HIGH YIELD BENTONITE
MATERIAL SAFETY DATA SHEET**

NSN: 681000N065826

Manufacturer's CAGE: 0JWA0

Part No. Indicator: A

Part Number/Trade Name: EXTRA HIGH YIELD BENTONITE

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General Information
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Company's Name: WYO-BEN INC

Company's P. O. Box: 1979

Company's City: BILLINGS

Company's State: MT

Company's Country: US

Company's Zip Code: 59103

Company's Emerg Ph #: 406-652-6351

Company's Info Ph #: 406-652-6351

Record No. For Safety Entry: 001

Tot Safety Entries This Stk#: 001

Status: SMJ

Date MSDS Prepared: 01MAY94

Safety Data Review Date: 01NOV95

MSDS Serial Number: BZRQC

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Ingredients/Identity Information
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Proprietary: NO

Ingredient: BENTONITE; (BENTONITE CLAY)

Ingredient Sequence Number: 01

NIOSH (RTECS) Number: CT9450000

CAS Number: 1302-78-9

OSHA PEL: 5 MG/M3 (DUST)

ACGIH TLV: 5 MG/M3 (DUST)

Proprietary: NO

Ingredient: ACTIVATED MONTMORILLONITE CLAY; (SODIUM MONTMORILLONITE)

Ingredient Sequence Number: 02

NIOSH (RTECS) Number: 1006223AM

CAS Number: 1318-93-0

OSHA PEL: N/K (FP N)

ACGIH TLV: N/K (FP N)

Proprietary: NO

Ingredient: SILICA, CRYSTALLINE - QUARTZ; (CRYSTALLINE SILICA (SIO*2) AS QUARTZ) %: THE CONCENTRATION LEVEL OF TOTAL FREE (ING 4)

Ingredient Sequence Number: 03

NIOSH (RTECS) Number: VV7330000

CAS Number: 14808-60-7

OSHA PEL: SEE TABLE Z-3

ACGIH TLV: 0.1 MG/M3 RDUST

Proprietary: NO

Ingredient: ING 3:SILICA IN AIRBORNE BENTONITE DUST IS VARIABLE DEPENDING UPON ORIGIN OF BENTONITE ORE, FINENESS OF PROD, (ING 5)

Ingredient Sequence Number: 04
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT APPLICABLE
ACGIH TLV: NOT APPLICABLE

Proprietary: NO

Ingredient: ING 4:LOCAL HUMIDITY AND WIND CONDITIONS AT POINT OF USE, ETC.
Ingredient Sequence Number: 05
NIOSH (RTECS) Number: 9999999ZZ
OSHA PEL: NOT APPLICABLE
ACGIH TLV: NOT APPLICABLE

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Physical/Chemical Characteristics

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Appearance and Odor: BLUEGRAY TO GREEN AS MOIST SOLID. LIGHT TAN TO GRAY AS DRY POWDER. NO ODOR.

Boiling Point: N/A
Melting Point: 2642F, 1450C
Vapor Pressure (MM Hg/70 F): N/A
Vapor Density (Air=1): N/A
Specific Gravity: SUPP DATA
Evaporation Rate and Ref: NOT APPLICABLE
Solubility in Water: SUPP DATA
pH: SUPDAT

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Fire and Explosion Hazard Data

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Flash Point: NOT APPLICABLE
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: NONE FOR PRODUCT. ANY MEDIA CAN BE USED FOR THE PACKAGING. PRODUCT BECOMES SLIPPERY WHEN WET.
Special Fire Fighting Proc: WEAR NIOSH/MSHA APPROVED SCBA & FULL PROTECTIVE EQUIPMENT (FP N).
Unusual Fire and Explosion Hazards: NONE. PRODUCT WILL NOT SUPPORT COMBUSTION.

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Reactivity Data

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Stability: YES
Condition to Avoid (Stability): NONE SPECIFIED BY MANUFACTURER.
Materials to Avoid: NONE.
Hazardous Decomp Products: NONE.
Hazardous Poly Occur: NO
Conditions to Avoid (Poly): NOT RELEVANT

Health Hazard Data

LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.

Route of Entry - Inhalation: YES

Route of Entry - Skin: YES

Route of Entry - Ingestion: YES

Health Haz Acute And Chronic: SKIN: POSS DRYING RSLTING IN DERM. EYES: MECH IRRIT. INHAL: EXPOS TO DUST LEVELS EXCEEDING PEL MAY CAUSE IRRIT OF RESP TRACT RSLTING IN DRY COUGH. INGEST: NO ADVERSE EFTS. CHRONIC: INHAL: LONG TERM EXPOS TO FREE SILICA CNTNING AIRBORNE BENTONITE DUST WHERE LEVELS ARE HIGHER THAN TLV'S MAY LEAD TO DEVELOPMENT(EFTS OF OVEREXP)

Carcinogenicity - NTP: YES

Carcinogenicity - IARC: YES

Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: SILICA, CRYSTALLINE-QUARTZ: IARC MONOGRAPHS, SUPP. VOL 7, PG 341, 1987:GROUP 2A. NTP 7TH ANNUAL RPT ON CARCINS. (SUP DAT)

Signs/Symptoms Of Overexp: HLTH HAZS: OF SILICOSIS/OTHER RESP PROBLEMS. PERSISTANT DRY COUGH & LABORED BRTHG UPON EXERTION ARE SYMPTOMATIC. LOW CONCS OF CRYSTALLINE SILICA (SIO*2) IN FORM OF QUARTZ MAY BE PRESENT IN AIRBORNE BENTONITE DUST.

Med Cond Aggravated by Exp: INHALATION MAY AGGRAVATE EXISTING RESPIRATORY ILLNESS.

Emergency/First Aid Proc: INGEST: CALL MD IMMEDIATELY (FP N). SKIN: WASH WITH SOAP AND WATER UNTIL CLEAN. EYES: FLUSH WITH WATER FOR AT LEAST 15 MINUTES UNTIL IRRITATION CEASES. INHALATION: MOVE TO AREA FREE FROM DUST. IF SYMPTOMS OF IRRITATION PERSIST CONTACT PHYSICIAN. INHALATION MAY AGGRAVATE EXISTING RESPIRATORY ILLNESS.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: AVOID BREATHING DUST; WEAR NIOSH/MSHA RESPIRATOR APPROVED FOR SILICA BEARING DUST. VACUUM UP TO AVOID GENERATING AIRBORNE DUST. AVOID USING WATER. PRODUCT SLIPPERY WHEN WETTED.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: PRODUCT SHOULD BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

Precautions-Handling/Storing: USE NIOSH/MSHA RESPIRATORS APPROVED FOR SILICA BEARING DUST WHEN FREE SILICA CONTAINING AIRBORNE BENTONITE DUST LEVELS EXCEED PEL/TLV'S.

Other Precautions: CLEAN UP SPILLS PROMPTLY TO AVOID MAKING DUST. STORAGE AREA FLOORS MAY BECOME SLIPPERY IF WETTED. AVOID PROLONGED INHALATION OF AIRBORNE DUST.

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Control Measures
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Respiratory Protection: USE RESPIRATORS APPROVED BY NIOSH/MSHA FOR SILICA BEARING DUST.
Ventilation: MECHANICAL, GENERAL ROOM VENTILATION. USE LOCAL VENTILATION TO MAINTAIN PEL'S/TLV'S.
Protective Gloves: IMPERVIOUS GLOVES (FP N).
Eye Protection: ANSI APPROVED CHEM WORKERS GOGGS (FP N).
Other Protective Equipment: NONE.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: SPEC GRAV: 2.45-2.55 (H*2O=1). PH: 8-10 (5% AQUEOUS SUSPENSION). SOL IN H*2O:INSOLUBLE, FORMS COLLOIDAL SUSPENSION.
EXPLAN OF CARCIN: 1994: ANTICIPATED TO BE CARCINOGEN. ANIMAL: LUNG.

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Transportation Data
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Disposal Data
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Label Data
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Label Required: YES
Technical Review Date: 01NOV95
Label Status: G
Common Name: EXTRA HIGH YIELD BENTONITE
Chronic Hazard: YES
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: ACUTE: SKIN: POSSIBLE DRYING RESULTING IN DERMATITIS. EYES: MECHANICAL IRRITANT. INHALATION: EXPOSURE TO DUST LEVELS EXCEEDING PEL MAY CAUSE IRRITATION OF RESPIRATORY TRACT RESULTING IN DRY COUGH. CHRONIC: CANCER HAZARD. CONTAINS SILICA, CRYSTALLINE-QUARTZ WHICH IS LISTED AS AN ANIMAL LUNG CARCINOGEN (FP N). INHALATION: LONG TERM EXPOS TO FREE SILICA CONTAINING AIRBORNE BENTONITE DUST WHERE LEVELS ARE HIGHER THAN TLV'S MAY LEAD TO DEVELOPMENT OF SILICOSIS OR OTHER RESPIRATORY PROBLEMS.
PERSISTENT DRY COUGH AND LABORED BREATHING UPON EXERTION ARE SYMPTOMATIC.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: WYO-BEN INC
Label P.O. Box: 1979
Label City: BILLINGS
Label State: MT
Label Zip Code: 59103
Label Country: US
Label Emergency Number: 406-652-6351