

Material Safety Data Sheet

This document has been prepared to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200.

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Boral
Material
Technologies



Classification: CCP

IDENTITY (As used on label and list)

Boral Valulite™

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I - Identity Information

| | |
|-----------------------------|---|
| Chemical Name Bottom Ash | Emergency Telephone Number 1 (800) 424-9300 (CHEMTREC) |
| Chemical Family Coal Ash | Telephone Number for Information (210) 349-4069 |
| Date Prepared 15-Feb-93 | Date Revised 07-Jul-00 |

Section II - Hazardous Ingredients

| Hazardous Component (Specific Chemical identity, Common Name(s)) | OSHA PEL | ACGIH TLV | Other Limits Recommended |
|--|--|------------------------------------|----------------------------|
| Silica, Amorphous (SiO ₂) CAS# 7631-86-9. | 80 mg/m ³ / %SiO ₂ (total dust) | 10 mg/m ³ (total dust) | NIOSH: 6 mg/m ³ |
| Silica, Crystalline (SiO ₂) CAS# 148-086-97. | 30 mg/m ³ / (%SiO ₂)+2(total dust) 10 mg/m ³ / (%SiO ₂)+2(resp. dust) | 0.1 mg/m ³ (resp. dust) | 0.05 mg/m ³ |
| Alumina, Respirable (Al ₂ O ₃) CAS#1344-28-1. | 15 mg/m ³ (total dust) | 10 mg/m ³ (total dust) | NA |
| Calcium Oxide (CaO) CAS# 1305-78-8. | 5 mg/m ³ | 2 mg/m ³ | NA |
| Titanium Dioxide, Respirable (TiO ₂) CAS# 13463-67-7. | 15 mg/m ³ (total dust) | 10 mg/m ³ (total dust) | NA |
| Ferric Oxide (Fe ₂ O ₃) CAS# 1309-37-1. | 10 mg/m ³ (total dust) | 5 mg/m ³ (total dust) | NA |
| Magnesium Oxide (MgO) CAS# 1309-48-4. | 15 mg/m ³ | 10 mg/m ³ | NA |

1. Composition is variable depending on coal source and power plant characteristics. 2. This product does not have a significant respirable particle size distribution. However, various material handling operations may produce dust with respirable particles. 3. Materials present at >0.5% and <12% and not listed in OSHA or ACGIH include Potassium Oxide and Carbon.

* Also subject to alternative TLV for respirable particulates not otherwise classified (NOC) = 3mg/m³.

Section III - Physical/Chemical Characteristics

| | | | |
|-------------------------------|---|----------|---|
| Boiling Point (°F) NA | Specific Gravity (H ₂ O=1) NA | NFPA | 0 = Minimum hazard 1 = Slight hazard 2 = Moderate hazard 3 = Serious hazard 4 = Severe hazard |
| Vapor Pressure (mm Hg.) NA | Percent Volatile by Mass (%) NA | | |
| Vapor Density (AIR=1) NA | Evaporation Rate (Butyl Acetate=1) NA | | |
| Solubility in Water NA | pH NA | | |

Appearance and Odor

Grayish white or black sand or aggregate material, odorless.

Section IV - Fire and Explosion Hazard Data

| | | |
|--|-----------------------------|-----------|
| Flash Point NA | Flammable Limits: LEL NA | UEL NA |
| Extinguishing Media NA | | |
| Special Fire Fighting Procedures NA | | |

Unusual Fire and Explosion Hazards

NA

Section V - Reactivity Data

| | | | |
|-----------|-----------------------------------|---------------------|----|
| Stability | Unstable <input type="checkbox"/> | Conditions to Avoid | NA |
|-----------|-----------------------------------|---------------------|----|

| | |
|--|--|
| Stable <input checked="" type="checkbox"/> | |
|--|--|

Incompatibility (Materials to Avoid) NA

Hazardous Decomposition or Byproducts NA

| | | | |
|--------------------------|------------------------------------|---------------------|----|
| Hazardous Polymerization | May Occur <input type="checkbox"/> | Conditions to Avoid | NA |
|--------------------------|------------------------------------|---------------------|----|

| |
|--|
| Will Not Occur <input checked="" type="checkbox"/> |
|--|

Section VI - Health Hazard Data

Route(s) of Exposure: Inhalation? Skin? Ingestion?

Health Hazards (Acute and Chronic)

ACUTE: Irritation of the eyes, skin and mucous membranes. Repeated overexposure to very high levels of respirable crystalline silica for periods as short as six months have caused acute silicosis.

CHRONIC: Fibrotic disease of the lungs (silicosis) and carcinogeneity.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure

SILICOSIS: Shortness of breath, cough, fever, weight loss and chest pain.

Medical Conditions Generally Aggravated by Exposure

Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications of allergies resulting in irritation to skin, eyes and respiratory passage may occur from excessive exposure to dusts.

Emergency and First Aid Procedures

SKIN: Wash with soap and water.

EYES: Rinse eyes with water for at least 15 minutes, lifting eye lid occasionally. See a Physician.

INGESTION: Do not induce vomiting. Dilute by drinking milk or water. Never give anything by mouth to unconscious person. Keep victim warm and at rest. See a Physician.

INHALATION: Remove from dusty area to fresh air.

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Clean up for use or disposal. Dampen with a water mist to control dust (airborne dust) before removal. Do not use compressed air. If loaded on trucks, wet down material to prevent dusting during transport.

Waste Disposal Method

Dispose of in a landfill or coal ash disposal pond. observe local, state and federal regulations. This material is not a RCRA hazardous waste.

Precautions to Be Taken in Handling and Storing

Avoid creating dust.

Labeling

WARNING: Normal safety precautions are advised when handling these materials. Dampen with a water mist to control airborne dust and use appropriate personal protective equipment to avoid inhalation and exposure to eyes, skin and mucous membranes. Excessive exposure to these materials may cause irritation of the eyes, skin and mucous membranes and chronic exposure could lead to fibrotic disease of the lungs. This product contains silica, which has been identified as a carcinogen. If contact is made, areas affected should be thoroughly flushed with water. Medical attention is advised in case of ingestion, inhalation or eye contact. A Material Safety Data Sheet is on file. Call 210-349-4069 and ask for the Safety Manager.

Section VIII - Control Measures

Respiratory Protection (Specify Type) None required under PEL. If PEL is exceeded, use MSHA/NIOSH TC-21C-XXX respirators.

| | | | |
|---------------------|---|----------------------------------|---|
| Type of Ventilation | Local Exhaust <input checked="" type="checkbox"/> | Special <input type="checkbox"/> | If Special or Other specify: Use local exhaust during transfer to stay below PEL. Use mechanical ventilation for indoor work places as needed. |
|---------------------|---|----------------------------------|---|

| | |
|--|--------------------------------|
| Mechanical (General) <input checked="" type="checkbox"/> | Other <input type="checkbox"/> |
|--|--------------------------------|

Protective Gloves
Work gloves as needed

Eye Protection
Recommend Safety goggles or safety glasses. Eye wash stations should be readily accessible.

Other Protective Clothing or Equipment
As needed.

Work/Hygienic Practices
Use good hygiene practices and observe above precautions.

The information and recommendations set forth herein are based on data we have in our possession and we have reason to believe is accurate. It is, however, the user's responsibility to determine the safety, toxicity, and suitability for his own use of the herein described product. Because the actual use by others is beyond our control, Boral Material Technologies Inc. makes no warranty expressed or implied regarding accuracy of the data or the results to be obtained from the use thereof.