

Material Safety Data Sheet

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

45 N.E. Loop 410, Suite 70
San Antonio, Texas 7821
Phone: (210) 349-406
FAX: (210) 349-851
E-mail: info@BORAL.coi

Boral
Material
Technologies



Classification: CCP

IDENTITY (As used on label and list)

Boral MACS-ASH®

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 Fly Ash (CAS# 68131-74-8)	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 powder, 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
 Stable Conditions to Avoid NA

Incompatibility (Materials to Avoid) NA

Hazardous Decomposition or Byproducts NA

Hazardous Polymerization May Occur
 Will Not Occur Conditions to Avoid NA

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 carcinogenicity.

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 allergens 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

Store in dry conditions. Minimize dust. 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 mucus membranes. Excessive exposure to these materials may cause irritation of the eyes, skin and mucus 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 Special If Special or Other specify:
 Mechanical (General) Other Use local exhaust during transfer to stay below PEL. Use mechanical ventilation for indoor work places as needed.

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.