

**MATERIAL SAFETY DATA SHEET**

IDENTITY (As Used on Label and List)  
 Bituminous Coal Fly and Bottom Ash

**SECTION I**

**NAME**

U.S. ASH COMPANY / A Division of Michigan Ash Sales Company  
 Address (Number, Street, City, State and ZIP Code) Telephone Number for Information  
 2555 North Woodcock Hwy. (517) 892-3521  
 Date Prepared  
 Essexville, MI 48732 Revised 1/1/89

**SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL mg/m <sup>3</sup>	ACGIH TLV mg/m <sup>3</sup>	% (optional)
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	NE	NE	21-31%
Calcium Oxide, CaO	5	2	0.7-3.0%
Carbon, C	NE	NE	1.0-13%
Iron Oxide, Fe <sub>2</sub> O <sub>3</sub>	10	5	4.5-18%
Lithium Oxide, Li <sub>2</sub> O	NE	NE	0.01-0.06%
Magnesium Oxide, MgO	15 (fume)	10 (fume)	0.5-1.5%
Phosphorus Pentoxide, P <sub>2</sub> O <sub>5</sub>	NE	NE	0.1-2.6%
Potassium Oxide, K <sub>2</sub> O	NE	NE	1.0-5.0%
Silica, SiO <sub>2</sub>	10mg/m <sup>3</sup> /%SiO <sub>2</sub> +2	0.1	39-62%
Sodium Oxide, Na <sub>2</sub> O	NE	NE	0.1-5.0%
Sulfite, SO <sub>3</sub>	NE	NE	0.2-1.5%
Titanium Oxide, TiO <sub>2</sub>	15	10 (<1% quartz)	0.5-2.5%

Note: Concentrations are approximate and may vary with coal source and boiler operating conditions (NE means not established). The International Agency for Research on Cancer (IARC) has classified crystalline silica as a probable human carcinogen.

**SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS**

Boiling Point NA	Specific Gravity (water = 1) NA
Vapor Pressure (mm Hg) NA	Melting Point NA
Vapor Density (air = 1) NA	Evaporation Rate (Butyl Acetate = 1) NA
Solubility in Water Minimal	
Appearance and Odor Hygroscopic powder, light to medium gray	

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Flammable Limits	LEL	UEL
NA	NA		
Extinguishing Media			
NA			
Special Fire Fighting Procedures			
NA			
Unusual Fire and Explosion Hazards			
NA			

## SECTION V - REACTIVITY DATA

Stability	Unstable	Conditions to Avoid
	Stable	
		X
Incompatibility (Materials To Avoid)		
NA		
Hazardous Decomposition or Byproducts		
NA		
Hazardous Polymerization	May Occur	Conditions To Avoid
	Will Not Occur	
		X

## SECTION VI - HEALTH HAZARD DATA

Route(s) of Entry:	Inhalation?	Skin?	Ingestion?
	Yes	Yes	No
Health Hazards (Acute and Chronic)			
Dust particles may irritate eyes, skin and mucous membranes of the respiratory tract.			
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	No	Yes-Silica	No
Signs and Symptoms of Exposure			
Eye, skin irritation. Difficulty in breathing, pneumoconiosis with excessive chronic exposure.			
Medical Conditions Generally Aggravated by Exposure			
Existing respiratory illnesses or skin disorders			

## Emergency and First-Aid Procedures

Thoroughly flush eyes for at least 15 minutes. Wash skin with soap and water. Remove to fresh air.

## SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps To Be Taken in Case Material is Released or Spilled  
Scoop or shove into container or vacuum. Handle wet when possible.

## Waste Disposal Method

Approved landfills following applicable federal, state and local regulations.

## Precautions To Be Taken in Handling and Storing

Follow good housekeeping procedure.

## Other Precautions

Minimize inhalation and direct skin contact. Dust respirator should be used in conditions involving high ash exposure.

## SECTION VIII - CONTROL MEASURES

Respiratory Protection (Specify Type)	Ventilation	Protective Gloves	Other Protective Clothing or Equipment	Work/Hygienic Practices
Wear NIOSH approved dust respirator.	Local Exhaust NA Mechanical (General) Yes	Cloth, plastic or rubber	Paper or cloth coveralls under heavy dust conditions	Avoid generating excessive dust when handling.
			Eye Protection Goggles in dusty conditions	
			Special NA Other NA	