Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB. No. 1218-0072

IDENTITY *(As Used on Label and List)*
FC01 White A & B Flash Powder ("B")

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

Section I

Manufacturer's Name **Theatre Effects**	Emergency Telephone Number **301-491-1387**
Address *(Number, Street, City, State, and ZIP Code)* **642 Frederick Street**	Telephone Number for Information **301-791-7646**
Hagerstown, Maryland 21740-6815	Date Prepared **9/15/99**
	Signature of Preparer *(optional)*

Section II --- Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity: Common name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*
Aluminum Metal/Powder (Aluminum Metallic Powder • Pyro Powder)	**None**	**8-hr TWA* 10 mg/m^3**		**>98**

***Current ACGIH (1983) TLV; STEL is 20 mg/m^3. Aluminum pyro powder has an 8-hr TWA of 5 mg/m^3. No specific OSHA PEL; "nuisance dust" may be applicable.**

NOTE: Processing and finishing of aluminum metal can generate respirable particulate, i.e., grinding, buffing. (See also NFPA, No. 65)

Section III --- Physical/Chemical Characteristics

Boiling Point **2467°C**		Specific Gravity (H_2O = 1) **2.7**	
Vapor Pressure (mm Hg.) **2080°C, mm Hg --- 100 1284°C, mm Hg --- 1**		Melting Point **660°C**	
Vapor Density (AIR = 1) **4.8**		Evaporation Rate (Butyl Acetate = 1) **N/A**	

Solubility in Water **Negligible (less than 0.1%)**

Appearance and Odor **Silvery-white odorless metallic powder**

Section IV --- Fire and Explosion Hazard Data

Flash point (Method used) **N/A**	Flammable Limits	**Dust cloud explosion***	LEL	**>0.04 oz/ft^3**	UEL **N/A**

Extinguishing Media **Special mixtures of dry chemical; clean, dry sand; mat. Do not use water, CCl_4 or helon!**

Special Fire Fighting Procedures **Firefighters should wear self contained breathing apparatus and protective clothing. Move exposed containers from fire area if it can be done without risk. Keep exposed containers cool.**

Unusual Fire and Explosion Hazards **When exposed to heat or ignition sources, powdered AL can be a severe fire and explosion hazard. Particle size, coating and dispersion in air determine reactivity. Ring small fires with dry extinguishing material using nonsparking shovels. Do not create dust clouds. Eliminate drafts. Self-extinguishment can result as a hard crust of oxide is formed. At high temperatures molten aluminum can be ignited and burn.**

(Reproduce locally) ***100% of dust goes through a 44 mm sieve; this dust cloud ignited by a 0.05 J spark.** OSHA 174, Sept. 1985

Section V --- REACTIVITY DATA

Stability	Unstable		Conditions to Avoid **Moisture, friction, sources of ignition**
	Stable **X**		

Incompatability *(Materials to Avoid)* **Strong acids, caustics, strong oxidizing agents, strong bases, combustible materials, water**

Hazardous Decomposition or Byproducts **Aluminum oxide and nitride form on high temperature reaction with air.**

Hazardous Polymerization	May Occur		Conditions to Avoid **N/A**
	Will Not Occur **X**		

Section VI --- Health Hazard Data

Route(s) of Entry: Inhalation? **None indicated** Skin? **None indicated** Ingestion? **None indicated**

Health Hazards *(Acute and Chronic)* **Aluminum powder can be irritating in the eyes and respiratory system. Chronic inhalation of massive levels of fine powder reported to cause pulmonary fibrosis and emphysema. It has been proposed that stamped foil powder is fibrogenic while granular powder is not.**

Carcinogenicity: NTP? **No** ARC Monographs? **No** OSHA Regulated? **No**

Signs and Symptoms of Exposure **Dust may irritate nose and throat**

Medical Conditions Generally Aggravated by Exposure **None identified**

Emergency and First Aid Procedures **Eyes: Flush well with water to remove particulate. Obtain medical attention if irritation persists. Skin: For cuts, abrasive irritation or thermal burns, obtain medical attention. Inhalation: Remove to fresh air. Obtain medical attention for coughing and breathing difficulty. Ingestion: Obtain medical attention.**

Section VII --- Precautions for Safe Handling and Use

Steps to Be taken in Case Material is Released or Spilled **Shut off ignition sources; no flares, smoking, or flames in area. Do not touch spilled material. Do not put any water on leak or spills. Use clean shovel or conductive, nonsparking scoops and clean soft natural bristle brushes, and place in closed, pressure-vented, dry metal containers. Do not get water into container. Mix dry sand with scrap. Tightly seal.**

Waste Disposal Method **Dispose in accordance with all applicable federal, state and local environmental regulations.**

Precautions to be Taken in Handling and Storing **Store in sealed containers in a dry, low risk area away from sources of heat or ignition, oxidizing agents, combustibles, acids, alkalis, halogens, carbon disulfide and halogenated hydrocarbons. Protect containers from physical damage; exclude moisture and humid air. Use nonsparking tools and equipment. Meet electrical code requirements.**

Other Precautions **No smoking**

Section VIII --- Control Measures

Respiratory Protection *(Specify Type)* **None required w/adequate ventilation. If airborne concentration is high, dust/mist respirator recommended. If respirator capacity is exceeded, a self-contained breathing apparatus.**		Special **None**
Ventilation	Local Exhaust **X (and general exhaust) to meet TLV requirements**	Other **None**
	Mechanical *(General)* **X**	

Protective Gloves **Proper gloves recommended**	Eye Protection **Safety glasses with sideshields recommended**

Other Protective Clothing or Equipment **Use tight-weave, non-static generating, protective clothing (no metallic fasteners, cuffs or pockets) and nonsparking safety shoes when working with this powder.**

Work/Hygienic Practices **Good housekeeping needed to prevent fine or thin machining residues or dust accumulation. Avoid generation of airborne dust.**

* U.S.G.O.: 1986-491-529/45775