SAFETY DATA SHEET

1. Identification

Product identifier **ATOMIZED ALUMINUM POWDER**

Other means of identification

SDS number 123

Version # 08

Revision date January 7, 2015.

Synonym(s) All non-alloyed, non-coated nodular aluminum powder containing < 1% trace elements * 101, 104, 101T, 120, 121, 123, 1124, 1202, 1233, 1235, 1401/S2(1406), 1403, 1404, 1407, 1401/S9(1409), 1125, * 4402, 6401, 7123, 7124, 7125, 7401

Recommended use Various metallurgical/chemical/structural/coating applications

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

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Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); ALCOA: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

Website For a current Safety Data Sheet, refer to Alcoa websites: www.alcoa.com or internally at my.alcoa.com EHS Community

2. Hazard(s) identification

Classification

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Combustible dust

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement The mixture does not meet the criteria for classification. May form combustible dust concentrations in air.

Precautionary statement

Prevention Alcoa aluminum powders were tested by the United States Department of Interior Bureau of Mines in 1991, under UN criteria and found not to meet the definition of a hazard class 4. Care should be taken, however, during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Use only non-sparking tools and natural bristle brushes. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Prevent dust accumulation to minimize explosion hazard. Take precautionary measures against static discharge.

Response In case of fire: Use appropriate media for extinction.

Storage Store in a dry place and/or in closed container. Keep away from heat, sparks and open flame - No smoking. Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Disposal Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

Specific hazards Powder may ignite readily.
Dust or fines dispersed in the air can be explosive.
Explosion/fire hazards may be present when:
• Dust or fines are dispersed in air.
• Powder or dusts in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces.
• Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).

3. Composition/information on ingredients

Composition comments Complete composition is provided below and may include some components classified as non-hazardous.

Substances

Components	CAS #	Percent
Aluminum	7429-90-5	≥99.7

4. First-aid measures

Eye contact Dust from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

Skin contact Dust from processing: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Inhalation Dust from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.

Ingestion If swallowed, dilute by drinking water. Recommend quantities up to 30 mL (~1 oz.) in children and 250 mL (~9 oz.) in adults. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting. Consult a physician.

Most important symptoms/effects, acute and delayed Dust from processing: Can cause irritation of the upper respiratory tract. See Section 11 of the SDS for additional information on health hazards.

Medical conditions aggravated by exposure Asthma, chronic lung disease, and skin rashes.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen.

General information If exposed or concerned: Get medical advice/attention. In case of shortness of breath, give oxygen.

5. Fire-fighting measures

Suitable extinguishing media Use Class D extinguishing agents on fines, dust or molten metal.

Unsuitable extinguishing media DO NOT USE water, halogenated agents, or ABC dry chemical agents. These fire extinguishing agents will react with the burning material.

Specific hazards arising from the chemical	Alcoa aluminum powders were tested by the United States Department of Interior Bureau of Mines in 1991, under UN criteria and found not to meet the definition of a hazard class 4. Care should be taken, however, during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. May be a potential hazard under the following conditions: • Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. • Powder or dusts in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces. • Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).
Special protective equipment and precautions for firefighters	Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
Fire-fighting equipment/instructions	Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. Avoid mixing of the extinguishing agent with the burning material. Apply extinguishing media carefully to avoid creating airborne dust. Do not disturb the material until completely cool. If possible, isolate the burning material to prevent fire spread, and allow the material to burn itself out. Move undamaged containers away from heat or flame, if possible.
General fire hazards	Dust and fines from processing may ignite readily. Dust or fines dispersed in the air can be explosive.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes. Use personal protection recommended in Section 8 of the SDS.
Evacuation procedures	Keep people away from and upwind of spill/leak. Keep unnecessary personnel away.
Methods and materials for containment and cleaning up	Isolate area. Avoid the generation of dusts during clean-up. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools and natural bristle brushes. Use dry cleanup procedures. Keep material dry. Place carefully in dry, water-tight containers. Seal containers. After complete clean-up by sweeping, area may be washed with large amounts of water if necessary. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal. For waste disposal, see section 13 of the SDS.
Environmental precautions	No specific precautions.

7. Handling and storage

Handling	Keep away from sources of ignition - No smoking. Avoid contact with skin and eyes. Care should be taken during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Keep material dry.
Storage	Keep dry. Storage rooms must be of fire-resistant construction. Do not store powder in same room as other combustible materials.
Requirements for Processes Which Generate Dusts or Fines	Obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin TR-2 and National Fire Protection Association (NFPA) codes and standards listed in Section 16. Use non-sparking handling equipment, tools and natural bristle brush. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15). Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides. Process equipment, storage containers, vessels and buildings should be equipped with explosion/pressure relief valves, panels and windows. Precautions must also be taken to prevent water leakage or seepage which could contact the powder. Refer to NFPA 484. Avoid all ignition sources. Good housekeeping practices must be maintained. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. Do not use compressed air to remove settled material from floors, beams or equipment . Do not allow fines or dust to contact water, particularly in enclosed areas.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	15 mg/m3	(total dust)

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	PEL	5 mg/m3	Respirable dust.
		15 mg/m3	Total dust.

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m3	Respirable dust.

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	TWA	1 mg/m3	Respirable fraction.

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.

Alcoa

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

General Use personal protective equipment as required.

Appropriate engineering controls Dust from processing: Use with adequate explosion-proof ventilation designed to handle particulates to meet the limits listed in Section 8, Exposure Guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields.

Skin protection

Hand protection Wear impervious gloves to avoid direct skin contact.

Other Recommend fire resistant cotton or equivalent full-length fire resistant pants and jackets along with electrically conductive safety shoes or grounding straps. Great caution is required to avoid contact with unprotected electrical devices when wearing conductive safety shoes or grounding straps.

Respiratory protection Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: N95.

Thermal hazards Not applicable.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Form Solid, powder.

Color Silvery to gray.

Odor Odorless

Odor threshold Not applicable

pH Not applicable

Melting point/freezing point 1194.8 - 1214.6 °F (646 - 657 °C)

Initial boiling point and boiling range Not determined

Flash point Not applicable

Evaporation rate Not applicable

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - upper (%)	Not determined
Flammability limit - lower (%)	40 mg/l
Explosive properties	Dust can form an explosive mixture in air. Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.
Dust explosion properties	
St class	Very strong explosion.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not determined
Solubility(ies)	Insoluble Insoluble
Partition coefficient (n-octanol/water)	Not applicable. Not applicable
Auto-ignition temperature	1202 °F (650 °C) layered
Decomposition temperature	Not applicable
Viscosity	Not applicable

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions of use, storage, and transportation as shipped.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	• Water: Slowly generates flammable and explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Water/aluminum mixtures may be hazardous when confined. • Heat: Oxidizes at a rate dependent upon temperature and particle size.
Incompatible materials	• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). • Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten. • Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum. • Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation. • Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Health effects associated with ingredients

Aluminum dust/fines and fumes: Low health risk by inhalation. Generally considered to be biologically inert.

Health effects associated with compounds formed during processing

No new/additional compounds are expected to be formed during processing.

Information on likely routes of exposure

Eye contact	Can cause mechanical irritation.
Inhalation	Dust from processing: Can cause irritation of the upper respiratory tract.
Ingestion	Can cause irritation of the gastrointestinal tract.
Skin contact	Dust from processing: Can cause mechanical irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dust from processing: Can cause mechanical irritation. Dust: Can cause irritation of the upper respiratory tract.

Information on toxicological effects

Acute toxicity	Not classified. Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Non-corrosive.
Serious eye damage/eye irritation	Can cause mechanical irritation.
Respiratory or skin sensitization	Not a skin sensitizer.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Mild skin irritation.
Germ cell mutagenicity	Not available.
Neurological effects	Not classified. Based on available data, the classification criteria are not met.
Pre-existing conditions aggravated by exposure	Asthma, chronic lung disease, and skin rashes.
Carcinogenicity	Does not present any cancer hazards.
ACGIH Carcinogens	
Aluminum (CAS 7429-90-5)	A4 Not classifiable as a human carcinogen.
Reproductive toxicity	Does not present any reproductive hazards.
Routes of exposure	Inhalation. Skin contact. Eye contact.
Teratogenicity	Dust from processing: Not classified. Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Not classified. Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Not classified. Based on available data, the classification criteria are not met.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Not classified.
Further information	None known.

12. Ecological information

Ecotoxicity Not expected to be harmful to aquatic organisms.

Product		Species	Test Results
ATOMIZED ALUMINUM POWDER			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.16 mg/l, 96 hours

Persistence and degradability	The product is not biodegradable.
Bioaccumulative potential	The product does not contain any substances expected to be bioaccumulating.
Mobility in soil	Not considered mobile.
Mobility in general	Not considered mobile.
Other adverse effects	Not available.

13. Disposal considerations

Disposal instructions	Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Waste codes	RCRA Status: Not federally regulated in the U.S. if disposed of "as is." RCRA waste codes other than described here may apply depending on use of the product. Status must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S.
Waste from residues / unused products	If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. Transport information

General Shipping Information

Basic Shipping Information

ID number	-
Proper shipping name	Not regulated
Hazard class	-
Packing group	-

General Shipping Notes

• This material has been tested under UN criteria and found not to meet the definition of a hazard class 4 and does not meet the definition of any other hazard class.
• Standard Transportation Commodity Code: 33-991-19.
• HTS (Harmonized Tariff Schedule) code: 7603.10.0000.
• The import/export HTS (Harmonized Tariff Schedule) code given above is the United States HTS code provided by Alcoa's Customs Compliance Office in Knoxville, TN. Other country specific HTS codes may apply. If available, more information on the HTS codes will be provided on country specific Material Safety Data Sheets.
• When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. Regulatory information

US federal regulations

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.
All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation which will meet this requirement.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories	Immediate Hazard - No	
	Delayed Hazard - No	
	Fire Hazard - No	
	Pressure Hazard - Yes	If dust clouds are generated
	Reactivity Hazard - No	
SARA 302 Extremely hazardous substance	Yes	
SARA 311/312 Hazardous chemical	No	

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum	7429-90-5	≥99.7

US state regulations

US. Massachusetts RTK - Substance List

Aluminum (CAS 7429-90-5)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum (CAS 7429-90-5) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

Aluminum (CAS 7429-90-5)

US. Rhode Island RTK

Aluminum (CAS 7429-90-5)

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

SDS Status
January 7, 2015: Change(s) in Section: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.
Hazardous Materials Control Committee
Preparer: Jim Perriello, +1-865-977-2051. Origination date: September 17, 1980

SDS System Number: 145308

Revision date
January 7, 2015.

Version #
08

Revision Information
Product and Company Identification: Synonyms
Hazard(s) identification: <INDENT>Prevention
Composition / Information on Ingredients: Disclosure Overrides
Physical & Chemical Properties: Multiple Properties
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection
Regulatory Information: United States
HazReg Data: North America
GHS: Classification

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available.

Other information

• Guide to Occupational Exposure Values 2014, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
• NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, September 2005.
• expub, Expert Publishing, LLC., www.expub.com
• Aluminum Association Bulletin TR-2, "Recommendations for Storage and Handling of Aluminum Pigments and Powders." The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• NFPA 484, Standard for Combustible Metals (NFPA phone: 800-344-3555)
• NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
• NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
• NFPA 77, Standard for Static Electricity
• NFPA 68, Standard on Explosion Protection by Deflagration Venting • NFPA 69, Standard on Explosion Prevention Systems

Key/Legend:
ACGIH American Conference of Governmental Industrial Hygienists
AICS Australian Inventory of Chemical Substances
CAS Chemical Abstract Services
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR Code of Federal Regulations
CPR Cardio-pulmonary Resuscitation
DOT Department of Transportation
DSL Domestic Substances List (Canada)
EC Effective Concentration
ED Effective Dose
EINECS European Inventory of Existing Commercial Chemical Substances
ENCS Japan - Existing and New Chemical Substances
EWC European Waste Catalogue
EPA Environmental Protective Agency
IARC International Agency for Research on Cancer
LC Lethal Concentration
LD Lethal Dose
MAK Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL Non-Domestic Substances List (Canada)
NIOSH National Institute for Occupational Safety and Health
NTP National Toxicology Program
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration
PIN Product Identification Number
PMCC Pensky Marten Closed Cup
RCRA Resource Conservation and Recovery Act
SARA Superfund Amendments and Reauthorization Act
SIMDUT Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL Short Term Exposure Limit
TCLP Toxic Chemicals Leachate Program
TDG Transportation of Dangerous Goods
TLV Threshold Limit Value
TSCA Toxic Substances Control Act
TWA Time Weighted Average
WHMIS Workplace Hazardous Materials Information System
m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** End of SDS ***

ATOMIZED ALUMINUM POWDER

Hazard statement

Warning

May form combustible dust concentrations in air.

Precautionary statement

Prevention

Care should be taken during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Use only non-sparking tools and natural bristle brushes. Keep away from heat/sparks/open flames/hot surfaces - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Prevent dust accumulation to minimize explosion hazard. Take precautionary measures against static discharge.

Response

In case of fire: Use appropriate media for extinction.

Storage

Store in a dry place and/or in closed container. Keep away from heat, sparks and open flame - No smoking. Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Disposal

Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.

Supplemental information

Powder may ignite readily. Powder or dusts dispersed in the air can be explosive.

Explosion/fire hazards may be present when:

- Powder or dust are dispersed in air.
- Powder or dusts are in contact with water.
- Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).

FIRE FIGHTING MEASURES: Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. Avoid mixing of the extinguishing agent with the burning material. If possible, isolate the burning material to prevent fire spread, and allow the material to burn itself out. Do not disturb the material until completely cool. Move undamaged containers away from heat or flame, if possible.

DO NOT USE water, halogenated agents, or ABC dry chemical agents. These fire extinguishing agents will react with the burning material.

IN CASE OF SPILL: Avoid dusting of powder to the greatest extent possible. Use only non-sparking tools and natural bristle brushes. Eliminate ignition sources including sources of electrical, static or frictional sparks. Prohibit smoking.

Use dry cleanup procedures. Place carefully in dry, water-tight containers. Seal containers. After complete clean-up by sweeping, area may be washed with large amounts of water if necessary.

See Alcoa SDS Number 0123.

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ALCOA