



2225 W. Chandler Blvd. / Chandler, AZ 85224-6155 / 480-917-6000

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: Metal Matrix Composites – Aluminum Graphite

CHEMICAL FAMILY: Metallic Alloy

HMIS RATING: H 1 F 0 R 0

DATE PREPARED: 10/15/2007

EMERGENCY PHONE: 860-774-9605

CHEMTREC: 800-424-9300 (U.S. & Canada)
703-527-3887 (International – Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	OSHA PEL	ACGIH TLV
Aluminum	7429-90-5	≤67	15 mg/ m ³ (Total) 5 mg/m ³ (Resp.)	10 mg/m ³
Graphite	7782-42-5	≥27	15 mg/ m ³ (Total) 5 mg/m ³ (Resp.)	2 mg/m ³ * (Resp.)
Silicon	7440-21-3	≤6	15 mg/ m ³ (Total) 5 mg/m ³ (Resp.)	10 mg/m ³

* - All forms except graphite fibers.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product does not release hazardous materials in normal use. However, aluminum graphite may generate methane gas over a period of months when exposed to moisture in a sealed container. As with any machining of aluminum and/or graphite parts that create significant dust, a flammable or explosive mixture with air may form and cause the following health effects:

ACUTE: EYE: Dust that may cause mechanical injury.

SKIN: May cause minor irritation.

INHALATION: High dust concentrations may cause coughing and mild, transitory respiratory irritation.

INGESTION: Relatively non-toxic.

CHRONIC: Long-term inhalation overexposure to aluminum dust can cause pulmonary fibrosis, numbness in fingers and possible brain effects.

4. FIRST-AID MEASURES for dust

INHALATION: If symptoms appear, remove to fresh air and seek medical attention.

EYE CONTACT: Flush eyes and eyelids thoroughly with water; seek medical attention if irritation persists.

SKIN CONTACT: Wash with soap and water; seek medical attention if symptoms persist.

INGESTION: Give several glasses of water to drink to dilute. If large amounts were swallowed, seek medical attention.

5. FIRE-FIGHTING MEASURES for dust

FLASH POINT: NA Flammable Limits: LEL NE UEL NE

AUTOIGNITION TEMPERATURE: 1400F (760C)

EXTINGUISHING MEDIA: _____ Water Spray _____ Foam _____ CO₂
_____ Dry Chemical X Other – Class D Dry Powder

UNUSUAL FIRE AND EXPLOSION HAZARDS: Aluminum dust is flammable and can burn violently in the presence of oxidizing substances and certain metal oxides. Bulk dust, when moistened with water, spontaneously heats. Reactions with strong acids and alkalis release flammable hydrogen gas.

Fine aluminum dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential explosion hazard. Minimum explosive concentration: 0.04 oz/ft³.

Aluminum graphite when not aluminum encapsulated decomposes/degrades very slowly over a period of months to produce methane gas when exposed to a humid environment especially when the environment is acidic. Avoid long term storage of exposed aluminum graphite in a sealed container. Degradation is also associated with visible flaky/powdery surface layer formation on the material.

SPECIAL FIRE FIGHTING PROCEDURES: Do not use water or halogenated extinguishing media. Pressure from the extinguishing media may cause severe dusting.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing dust.

ENVIRONMENTAL PRECAUTIONS: NA

CLEANING METHODS: Avoid dispersing dust into the air. Use non-sparking tools.

7. HANDLING AND STORAGE

HANDLING: Wear suitable protective equipment. Refer to Section 8.
STORAGE: Store at room temperature. Do not freeze.

8. ENGINEERING CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: None anticipated. If dust exposures exceed limits cited in Section 2, use a NIOSH-approved N95 or N100 respirator.

VENTILATION

LOCAL: Recommended for operations involving machining of material.
GENERAL: Recommended as with all industrial operations.

PERSONAL PROTECTION

HAND: As needed for processing.
EYE: As needed for processing.
SKIN: As needed for processing

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Grey or black
ODOR: None
PHYSICAL STATE: Solid
MELTING POINT: NE
WATER SOLUBILITY: Insoluble
VAPOR PRESSURE: NA
SPECIFIC GRAVITY: ≤ 2.53 g/cc

10. STABILITY AND REACTIVITY

STABLE UNSTABLE

CONDITIONS TO AVOID: None
MATERIALS TO AVOID: Strong acid and bases.
HAZARDOUS POLYMERIZATION: May Occur Does Not Occur
HAZARDOUS DECOMPOSITION PRODUCTS:

Aluminum reacts with some acids and caustic solutions to produce hydrogen. Toxic metal fumes may form when heated to melting.

Exposed aluminum graphite reacts with water to produce methane. This reaction increases in the presence of acid.

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: NC
REPRODUCTIVE HAZARD: NC

12. ECOLOGICAL INFORMATION

NE

13. DISPOSAL CONSIDERATION

ENVIRONMENTAL TOXICITY DATA: NE
WASTE DISPOSAL METHOD: Dispose of in accordance with applicable federal, state, provincial and local laws and regulations.
CONTAINER DISPOSAL: Dispose of in accordance with applicable federal, state, provincial and local laws and regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION: Not Regulated
IMDG CLASSIFICATION: Not Regulated
ICAO/IATA CLASSIFICATION: Not Regulated

15. REGULATORY INFORMATION

TSCA All ingredients listed on TSCA or exempt
(*Toxic Substances Control Act*):

311/312 HAZARD CATEGORIES: None

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372:

<u>CAS #</u>	<u>CHEMICAL NAME</u>	<u>PERCENT BY WEIGHT</u>
NA	NA	

16. OTHER INFORMATION

NA = Not Applicable
NE = Not Established
NC = Not Classified

FILE: MMCAIGr.doc
99207

DATE PREPARED: 9/4/2007
DATE REVISED: 10/10/2007

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