MITSUBISHI CHEMICAL COMPOSITES AMERICA, INC.

Issue Date: 10/25/06
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Revision #: 10
SDS #: LL09-0001

SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200

SECTION 1: IDENTIFICATION

(a) Product Identifier: **MAFTEC BLANKET, BULK**

(b) Other means of Identification: None

(c) Recommended Use: Insulation

(d) Manufacturer/Importer/Distributor:

Manufacturer:
Mitsubishi Chemical Corporation
1-1-1 Marunouchi, Chiyoda-ku,
Tokyo 100-8251, Japan

Distributor:
Mitsubishi Chemical Composites America, Inc.
401 Volvo Parkway
Chesapeake, VA 23320
757-548-7826

(e) Emergency Phone Number: Chemtrec 1-800-424-9300

SECTION 2: HAZARD(S) IDENTIFICATION

(a) Chemical Classification: Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

(b) Signal Word: Not applicable

Hazard Statement(s): Not applicable

Symbol(s): Not applicable

Precautionary Statement(s): Not applicable

Prevention: When handling use good housekeeping and industrial hygiene procedures to minimize airborne dust. Avoid breathing dust: an approved dust mask or a respirator recommended where dust generation is possible. Avoid contact with skin and eyes: wear suitable loose fitting clothing, gloves, and eye protection. Do not eat, drink, or smoke when using this product.

Response: Rinse exposed skin areas with water. Wash work clothes separately.

Storage: Store under normal warehouse conditions.

Disposal: Dispose in accordance with local/state/federal regulations.

Hazards Not Otherwise Classified: None Known

(c) Supplemental Information: Mechanical irritation of skin, eyes, and upper respiratory system may occur during processing of material. These effects are normally temporary.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Percent
Polycrystalline Fiber	675106-31-7	100%

(a) Additional Information

MAFTEC is a polycrystalline Alumina short fiber for various uses such as refractory, automotive, and other industries. Polycrystalline fiber is a reaction product of basic aluminum chloride and silica (MLS and MLS-2 are chemically equivalent to Mullite – CAS # 1302-93-8 and ALS is chemically mixture of Mullite and Alumina – CAS # 1344-28-1).
Mean fiber diameter: 5-7µm: EU standard diameter measuring method (ECB/TM/1 (00) rev 2: Length weighted geometric mean diameter of fibers). 4.5-6.5 µm: Mitsubishi internal optical microscope method. Based on sample analysis of Fraunhofer Institute fur Toxicology and Experimentelle Medizin, Hannover (Certificate dated October 30, 2007) the material does not contain WHO fibers (length >5µm, diameter ≤3µm, relation length/diameter >3/1).
The Seventh Annual Report on Carcinogens (1994), prepared by NTP, classified respirable RCF (another aluminosilicate, but vitreous, fiber product) and glass wool as substances reasonably anticipated carcinogens. IARC has classified refractory ceramic fiber as a possible human carcinogen (Group 2B) based on sufficient evidence of carcinogenicity in animals, but insufficient data in humans. Polycrystalline aluminosilicate fibers have not been specifically classified.

SECTION 4: FIRST-AID MEASURES

(a) General Information

Remove any clothing soiled by the product. Contaminated clothing should be laundered before reuse.

(b) Eye contact

Do not rub eyes. Rinse eyes with water or saline for at least 15 minutes. Consult a physician if symptoms persist.

Skin Contact

Do not rub or scratch exposed skin. Wash with soap and water for at least 15 minutes and rinse thoroughly. Get medical attention if irritation develops or persists.

Inhalation

Move to fresh air. Consult a physician if symptoms persist.

Ingestion

Rinse out mouth and drink plenty of water. If swallowed, do not induce vomiting. Get medical attention.

(c) Most important Symptoms/Effects

No data available.

(d) Indication if immediate medical attention and special treatment	No data available.

SECTION 5: FIRE-FIGHTING MEASURES

(a) Suitable extinguishing media	Water, Dry powder, or foam extinguishing media.
(b) Unsuitable extinguishing media	No data available.
(c) Specific hazards	No data available.
(d) Special PPE and precautions for fire fighters	Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

SECTION 6: ACCIDENTAL RELEASE MEASURES

(a) Personal precautions, PPE, and emergency procedures	Avoid causing dust. Use PPE recommended in Section 8. Damp down dust with water spray.
(b) Methods and materials for containment and cleaning up	Dispose of contaminated material as waste according to Section 13. Ensure adequate ventilation. Contain the source of the spill or leak if it is safe to do so. Spills should be handled by vacuuming or wet mopping. Avoid brush sweeping and generation of airborne dust. Dispose of in suitable containers.

SECTION 7: HANDLING AND STORAGE

(a) Precautions for safe handling	Prevent formation of dust. Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water. Use appropriate industrial vacuums for dust removal. Any deposit of dust which cannot be avoided must be removed regularly.
(b) Conditions for safe storage	Store under normal warehouse conditions. Store away from food.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

(a) Occupational Exposure Limits

Component	OSHA Permissible Exposure Limits (PEL) - PNOR		ACGIH (TLV) - PNOC	
	Total	Respirable	Inhalable	Respirable
Polycrystalline Fiber	15 mg/m3*	5 mg/m3*	10 mg/m3**	3 mg/m3**

NE: None Established

*There is no specific regulatory standard for polycrystalline fiber in the United States. OSHA's Particulate Not Otherwise Regulated (PNOR) standard (29 CFR 1910.1000, Subpart Z, Air Contaminates) applies generally.

**ACGIH's TLV for Particulates Not Otherwise Classified (PNOC).

Other manufacturers report a recommended exposure limit of 0.5 f/cc, as an 8 hour TWA.

The evaluation of occupational exposure limits and determining their relative applicability to the workplace is best performed, on a case-by-case, by a qualified Industrial Hygienist.

(b) Appropriate Engineering Controls	Engineering controls should be used as primary means to control exposures. If dust is generated through processing, use with adequate ventilation designed to handle particulates to meet the occupational exposure limits listed in Section 8(a).
(c) Individual protective measures, PPE	
Eye/Face Protection	Safety glasses with side shields or goggles recommended.
Skin Protection	Select and use gloves in accordance with local standards to prevent skin contact based on the results of an exposure assessment. Consult with your glove manufacturer for selection of appropriate compatible gloves.
Respiratory Protection	Use NIOSH approved respiratory protection if concentrations exceed the occupational exposure limits listed in Section 8(a).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

(a) Appearance	Solid mat, rope, block, bulk - white color
(b) Odor	Odorless
(c) Odor Threshold	Not applicable
(d) pH	Not applicable
(e) Melting Point/Freezing Point	1823 °C
(f) Initial Boiling Point and Boiling Range	Not determined
(g) Flash Point	Not applicable
(h) Evaporation Rate	Not applicable
(i) Flammability (solid, gas)	Not classified
(j) Upper/Lower Flammability	Not applicable
Explosive Limits	Product is not explosive
(k) Vapor Pressure	Not applicable
(l) Vapor Density	Not applicable
(m) True Density	3.3 g/cc
(n) Solubility	Not miscible or difficult to mix
(o) Partition Coefficient	No data available
(p) Auto Ignition Temperature	Not determined
(q) Decomposition Temperature	Not determined
(r) Viscosity	Not applicable

SECTION 10: STABILITY AND REACTIVITY

(a) Reactivity	The product is stable and non-reactive under normal conditions of use, storage, and transport.
(b) Chemical Stability	Stable under normal conditions of use, storage, and transport.
(c) Possibility of hazardous reactions	Hazardous polymerization will not occur.
(d) Conditions to avoid	None known.

(e) Incompatible materials — None known.

(f) Hazardous decomposition products — Possible in traces: carbon monoxide, hydrogen cyanide (prussic acid), ethylene, and butylacrylate monomer

SECTION 11: TOXICOLOGICAL INFORMATION

(a) Inhalation — Respiratory tract irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

(b) Skin contact — Mechanical skin irritation. Signs/symptoms may include abrasion, redness, pain, and itching.

(c) Eye contact — Mechanical eye irritation. Signs/symptoms may include pain, redness, tearing, and corneal abrasion.

(d) Ingestion — Physical blockage. Signs/symptoms may include cramping, abdominal pain, and constipation.

(e) Toxilogical data:

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
Mullite Fiber	Dermal		LD50 Not available
Mullite Fiber	Ingestion	Rat	LD50 > 4,000 mg/kg

ATE = acute toxicity estimate

(f) Skin corrosion/irritation — Data not available.

(g) Serious eye damage/irritation — Data not available

(h) Respiratory or skin sensitization — Data not available

(i) Germ cell mutagenicity — Not classified

(j) Carcinogenicity — The Seventh Annual Report on Carcinogens (1994), prepared by NTP, classified respirable RCF (another aluminosilicate, but vitreous, fiber product) and glass wool as substances reasonably anticipated carcinogens. IARC has classified refractory ceramic fiber as a possible human carcinogen (Group 2B) based on sufficient evidence of carcinogenicity in animals, but insufficient data in humans. Polycrystalline aluminosilicate fibers have not been specifically classified.

(k) Reproductive toxicity — Not classified

(l) STOT-single exposure — Not classified

(m) STOT-repeated exposure — Not classified

(n) Aspiration hazard — No data available

(o) Additional information — Mean fiber diameter: 5-7µm: EU standard diameter measuring method (ECB/TM/1 (00) rev 2: Length weighted geometric mean diameter of fibers). 4.5-6.5 µm: Mitsubishi internal optical microscope method. Based on sample analysis of

Fraunhofer Institute fur Toxicology and Experimentelle Medizin, Hannover (Certificate dated October 30, 2007) the material does not contain WHO fibers (length >5µm, diameter ≤3µm, relation length/diameter >3/1).

SECTION 12: ECOLOGICAL INFORMATION

(a) Ecotoxicity	Unlikely to be hazardous to aquatic life.
(b) Persistence and degradability	No information available.
(c) Bioaccumulative potential	No information available.
(d) Mobility in soil	No information available.
(e) Other adverse effects	None known

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Instructions	Dispose of contents in accordance with local/regional/national/international regulations. Prior to disposal, consult applicable authorities and regulations to ensure proper classification. Dispose of waste products in a permitted industrial waste facility. If no other disposal options are available, waster product may be placed in a landfill if properly designed for industrial waste.

SECTION 14: TRANSPORT INFORMATION

(a) UN Number	Not applicable
(b) UN proper shipping name	Not Regulated
(c) Transport Hazard Class(es)	Not Applicable
(d) Packing Group	Not Applicable
(e) Environmental Hazards	Not Applicable
(f) Transport in Bulk	Not Applicable
(g) Special Precautions	Not Applicable

SECTION 15: REGULATORY INFORMATION

EPA Regulations: Superfund Amendments and Reauthorization Act (SARA) Title III: This product does not contain any substances reportable under Sections 302,304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).

Toxic Substances Control Act (TSCA): PCF has been assigned a CAS number, however it is an article under TSCA and therefore exempt from listing on the TSCA.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Clean Air Act (CAA): This product contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

OSHA Regulations: Comply with all applicable OSHA Standards.

California: "Ceramic fibers (airborne particles of respirable size)" is listed in Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986 as a chemical known to the state of California to cause cancer.

Canada: Canadian Workplace Hazardous Materials Information System: (WHIMS) Classified as Class D2A – Materials Causing Other Toxic Effects.

Canadian Environmental Protection Act (CEPA): All substances in this product as listed, as required, on the Domestic Substance List (DSL).

SECTION 16: OTHER INFORMATION

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Disclaimer: The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. The information above is provided on the condition that parties receiving the product make their own determination as to the suitability of the product for their particular purpose and assume the risk of use of the product. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.
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