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SECTION I - MATERIAL IDENTIFICATION

Trade Name and Synonyms: **Pligun Al-Tuff 3100 Special** Product Number: 16517
 Al_2O_3 - 57.3 % SiO_2 - 36.0 %
 Chemical Name and Synonyms: High Temperature Cements
 Chemical/Mineral Family: Alumino Silicate Manufactureres Code I.D. : L - 2410

SECTION II- HAZARDOUS INGREDIENTS

| Ingredients (checked) | General Chemical Formula | Percent By Weight | TLV (ACGIH) | C.A.S. No. |
|---------------------------------------------------------|--------------------------|-------------------|--------------------------------------------------------------------------------------|-------------|
| <input checked="" type="checkbox"/> Quartz*** | SiO_2 | 0.05 | 0.025 mg/m ³ (respirable dust) | 14808-60-7 |
| <input checked="" type="checkbox"/> Cristobalite*** | SiO_2 | 0.25 | 0.025 mg/m ³ (respirable dust) | 1446446-1 |
| <input checked="" type="checkbox"/> Amorphous Silica*** | SiO_2 | 3.2 | 2 mg/m ³ (respirable dust) | 69012-64-2 |
| <input type="checkbox"/> Fused Silica*** | SiO_2 | | 0.1 mg/m ³ (respirable dust) | 60676-86-0 |
| <input type="checkbox"/> Zirconium Silicate*** | $ZrSiO_4$ | | 5 mg/m ³ | 14940-68-2 |
| <input type="checkbox"/> Graphite | C | | 2.5 mg/m ³ | 7782-42-5 |
| <input type="checkbox"/> Aluminum Phosphate | AlH_3PO_4 | - | 2 mg/m ³ | 7784-30-7 |
| <input type="checkbox"/> Silicon Carbide | SiC | | 10 mg/m ³ (respirable dust) | 409-21-2 |
| <input type="checkbox"/> Ceramic Fiber | N/A | | 5 mg/m ³ (respirable dust), 15mg/m ³ (total), 0.5 fiber/ cc | 142844-00-6 |

Special Notes: *** Greater amounts of Quartz and Cristobalite may be formed after firing.
 Major portion of the crystalline silica present in the product as manufactured is not fine enough to normally be considered respirable.

SECTION III- PHYSICAL DATA

Boiling Point (): N/A Specific Gravity: 2.9 pH: Alkaline
 Solubility in Water: Negligible Percent Volatile by Volume (%): N/A
 Appearance and Odor: Grey powder

SECTION IV- FIRE AND EXPLOSION HAZARD DATA

Unusual Fire and Explosive Hazards: Improper mixing and bake-out of materials may result in steam spalling during initial heating. Refer to mixing instructions and bake-out schedules for proper procedures.

SECTION V- REACTIVITY DATA

Stability: Stable Hazardous Polymerization: May not occur
 Incompatibility: Materials to avoid: N/A Hazardous Decomposition: N/A

SECTION VI- HEALTH HAZARD DATA

Primary Route of Entry: Inhalation, Ingestion, Skin Contact

Effects of overexposure:

- 1. Acute: Exposure to nuisance dust may cause temporary irritation or discomfort to skin, eyes, nose, throat or lungs and may aggravate bronchial disorders.
- 2. Chronic: Long term inhalation of respirable quartz, cristobalite, fused silica and/or amorphous silica may cause silicosis (delayed lung injury) and other respiratory disorders.
- 3. Prolonged contact with skin may cause irritation.
- 4. IARC: sufficient evidence for the carcinogenicity of crystalline silica to humans. (Group 1)
- 5. Canadian WHMIS : D2A

NFPA Rating scale 0-4**HMIS Rating**

| | | |
|---------------------|---|---|
| Health | * | 1 |
| Flammability | | 0 |
| Physical Hazard | | 0 |
| Personal Protection | | E |

Emergency and first aid procedures:

For eye contact, flush with water and get medical attention
 For skin contact - wash with soap and water.
 For excessive inhalation - remove to fresh air.
 If irritation persists, call a physician.

SECTION VII- SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled:

Use routine housekeeping procedures, avoid dusting, collect material in closed containers or bags.

Waste Disposal Method:

According to the EPA (40CFR 261.3) wastes are not hazardous wastes. Wastes may be disposed of in a landfill, however, in accordance with federal, state, and local regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory Protection:

Good ventilation should be provided if dust is created when working with materials. Used material, which is being removed, should be dampened to reduce dust. In addition, when dust is present, workers should employ respirator protection. Recommended: NIOSH approved respirator for dusts and mists, including silica, in compliance with OSHA STD 29.CFR1910.134.

Ventilation:

Local and Mechanical: follow OSHA STD 29 CFR 1910.94.

Protection Gloves: Protective gloves recommended.

Eye Protection: Safety glasses/goggles.

Other Protective Equipment: As required to meet applicable OSHA standards.

SECTION IX - TRANSPORT INFORMATION

DOT Proper Shipping Name (29 CFR 172.101): Not Regulated

DOT Hazard Class (29 CFR 172.101): Not Regulated

UN/NA Code (49 CFR 172.101): Not applicable

DOT Labels Required (49 CFR 172.101): Not applicable

DOT Placards Required (49 CFR 172.504): Not applicable

Land Transport ADR/RID (cross-border): Not regulated

Maritime Transport IMDG: Not regulated

Air Transport ICAO-TI and IATA-DGR: Not regulated

SECTION X - SPECIAL PRECAUTIONS

Precautions to be taken in handling and storage: To ensure product quality, store in a dry place.

Additional Notes: The data provided herein is believed to be correct and is obtained from sources believed to be reliable. Plibrico Company shall not be liable for injury arising by either misuse of materials, or failure to follow safety procedures as outlined in the material safety data sheet.