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SECTION I – PRODUCT IDENTIFICATION

Product Name: Firebrick/Ladle brick/Low duty refractory

Chemical Family: Predominately Aluminum Silicates
Formula: Mixture

SECTION II – HAZARDOUS INGREDIENTS

| <u>Ingredients</u> | <u>CAS #</u> | <u>% Weight</u> | <u>Exposure Limits</u> | |
|---|--------------|-----------------|--|--------------------------------|
| | | | OSHA PEL mg/m ³ | ACGIH TLV mg/m ³ |
| Alumina (Al ₂ O ₃) | 1344-28-1 | 30 | 15 | 10 |
| Quartz (SiO ₂) | 14808-60-7 | Varies | 10 / (%SiO ₂ + 2) (respirable) | 0.025 (respirable) |

The above chemistries are provided for industrial hygiene and environmental purposes and are not intended to represent product specifications. This information has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, chromium, cobalt, copper, lead, molybdenum, nickel, tin, titanium, vanadium, and zirconium may be present in trace amounts. Clay and Shale products as shipped do not present an exposure hazard.

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: NA
Vapor Pressure: NA

Melting Point: 1500 C
Vapor Density: NA

Specific Gravity: 2.7
Solubility in Water: Negligible

Appearance and Odor: Granular solid, essentially odorless. Buff or red colored

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Bricks as shipped do not pose a fire or explosion hazard.

SECTION V – REACTIVITY

Bricks as shipped are not reactive

SECTION VI – HEALTH HAZARD DATA

Bricks as shipped do not present an inhalation, ingestion or contact hazard. However, operations such as sawing and grinding may result in the following effects.

ACUTE EFFECTS OF OVEREXPOSURE:

Eye: May cause irritation by abrasion with dust or chips.

Skin: Brick dust or chips may cause allergic reactions in hypersensitive individuals; May cause cuts and skin abrasions.

Inhalation: Brick dust or chips may cause congestion and irritation in nasal and respiratory passages.

Ingestion: No known acute effects.

CHRONIC EFFECTS OF OVEREXPOSURE:

Excessive exposures to respirable particulates (dust) over an extended period of time may result in the development of pulmonary diseases such as silicosis.

SECTION VI – HEALTH HAZARD DATA (continued)

CARCINOGENICITY:

The following carcinogenicity classifications for crystalline silica have been established by the following agencies:

OSHA: Not regulated as a carcinogen

IARC: Group 1 carcinogenic in humans

NIOSH: Carcinogen, with no further categorization

NTP: Known carcinogen

WARNING: Brick dust may contain crystalline silica and other chemicals known to the state of California to cause cancer, birth defects, and other reproductive harm. Inhalation of brick dust above established or recommended exposure levels should be avoided by use of wet sawing or shaping and/or use of a NIOSH and/or MSHA approved respirator. Always stack and store bricks in a stable manner to avoid falling hazards.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

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| Ventilation: | Provide adequate ventilation to maintain exposures below the OSHA PEL and ACGIH TLV for quartz and other substances. |
| Respiratory Protection: | For airborne concentration exceeding the OSHA PEL or ACGIH TLV use a NIOSH and/or MSHA approved respirator. |
| Other Protective Equipment: | Eye and Face: Face shields should be used when sawing firebrick. Skin: Use gloves and or protective clothing if abrasions or allergic reactions are experienced. Other: Use of steel toe shoes is recommended when handling firebrick. |
| Other controls: | Use of wet sawing methods is recommended anytime that firebrick must be cut. |

SECTION VIII – FIRST AID AND MEDICAL

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| Inhalation: | Remove from exposure to airborne particulates. Consult a physician if breathing does not return to normal. |
| Skin: | Wash with soap and water. If an allergic reaction causes a rash that does not heal with in a few days consult a physician. Treat abrasions as any other scrape or cut with disinfectants and bandages. |
| Eye: | Flush with running water. Obtain medical assistance if irritation continues. |
| Medical Conditions Aggravated by Exposure: | Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications or allergies resulting in irritation to skin, eyes, and respiratory tract may occur from excessive exposure to dusts. |

SECTION IX – OTHER REGULATIONS

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| RCRA: | Brick in its solid form is typically considered a non-hazardous waste for disposal, but local regulation may vary, therefore all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations. Water containing brick solids, such as from wet sawing operations, should also be disposed of in accordance with federal, state and local environmental regulation. Brick waste should not be used as a blasting agent. |
| EPCRA Section 311/312: | Bricks as shipped are not a Section 311/312 reportable product. |
| EPCRA Section 313: | Bricks as shipped are not subject to the Section 313, Toxic Chemical Release Inventory reporting requirements. |
| DOT: | Bricks as shipped are not hazardous materials per DOT regulations. |

SECTION X – OTHER INFORMATION

Whitacre Greer considers our product an "article" as defined in 29 CFR 1910.1200(b)(6)(v) and 40 CFR 372.38. As an article, an MSDS is not required and the product is exempt from all other requirements of the hazard communication standard. OSHA requires an MSDS for brick because it is occasionally dry sawed. We recommend only wet sawing of brick.

Brick work must be completely dry before introduction of molten metal to avoid explosion from steel.

This MSDS was prepared with information believed accurate at the time of preparation and was prepared and provided in good faith. However, Whitacre Greer assumes no responsibility as to the accuracy or suitability of such information and no warranty expressed or implied is made.