MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**CERAM™ 45 PLASTIC**
Australian Codes and Classifications:	Dangerous Good Class: None allocated Hazchem Code: None allocated Not classified as hazardous according to criteria of Worksafe Australia
UN Number	No UN Number Allocated
Product Type:	Monolithic Refractory (Plastics)
TS Number:	LEV10098

Company Name And Address:	Vesuvius America: 495 Emma Street Bettsville, OH 44815 U.S. Europe: 2 Midland Way, Barlborough Links, Derbyshire S43 4XA U.K. Australia: Lot 2 Sturdee Av. Bulli NSW 2516 Australia
Technical Contact:	American Phone #: 1-419-986-5126 European Phone #: 44 (0) 1246 571880 Australian Phone #: 02 42681188
Emergency Contact:	24hr. Emergency Assistance (CHEMTREC) 1-800-424-9300 Outside the Continental U.S. See Section 15 or Call Chemtrec Collect: 703-527-3887

2. COMPOSITION / INFORMATION ON INGREDIENTS

R/S Phrases in Section 15

Substance	% Range	Identification No.	Exposure Limits U.S.A	European	Australian
Aluminosilicate	50-80	CAS 1302-93-8	**Nuisance Particulate** ACGIH TLV:TWA (resp.) 5mg/m^3 OSHA PEL:TWA (resp.) 5mg/m^3	OES OEL:TWA (resp.) 4mg/m^3; Total Dust 10mg.m^3	TWA 10mg/m^e
Silica, Amorphous	1-10	CAS 69012-64-2	ACGIH TLV:TWA 2mg/m^3	See Exposure Limits for U.S.A.	See Exposure Limits for U.S.A.
Crystalline Silica, Cristobalite	1-5	CAS 14464-46-1	ACGIH TLV:TWA (resp.) 0.05mg/m^3 OSHA PEL:TWA (resp.) 10mg/m^3÷ 2(%SiO_2+2)	MEL OEL: TWA (resp.) 0.30mg/m^3	TWA 0.20mg.m^3
Crystalline Silica, Quartz	1-10	CAS 14808-60-7	ACGIH TLV:TWA (resp.) 0.05mg/m^3 OSHA PEL:TWA (resp.) 10mg/m^3÷ (%SiO_2+2)	MEL OEL: TWA (resp.) 0.30mg/m^3	TWA 0.20mg.m^3

3. HAZARD IDENTIFICATION

Emergency Overview:	Product is gray-brown, damp, moldable and dust free. Not a fire or spill hazard. Prolonged skin contact may produce irritation/inflammation.
Precautions:	Pre-existing lung conditions such as, but not limited to bronchitis, emphysema and asthma.
Chronic Health Effects:	Prolonged inhalation of dried product (after service tear-out) may lead to the development of a disabling pulmonary fibrosis known as silicosis, which may lead to cancer.
Acute Health Effects:	Eyes: Physical eye irritant Skin: Slight skin irritation Inhalation: irritation of upper respiratory system Ingestion: May cause gastrointestinal disturbances

4. FIRST AID MEASURES

Inhalation:	Remove victim to fresh air. If not breathing, give artificial respiration and seek medical attention.
Eye contact:	Flush eyes with large amounts of water. Seek medical attention if irritation persists.
Skin contact:	Wash affected area with mild soap and water.
Ingestion:	Seek medical attention if symptoms persist.

5. FIRE FIGHTING MEASURES

Extinguisher Type:	No special instructions or conditions.
Special Procedures:	No special instructions other than use of approved respirators. Product is not a combustible.

6. ACCIDENTAL RELEASE

Spillage:	No special requirements. Use safety glasses, gloves, skin protection, and (if dry) respiratory protection.

7. HANDLING AND STORAGE

Handling	No special requirements. Use safety gloves and glasses.
Storage	No special requirements

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation:	Provide sufficient ventilation, in both volume and air flow patterns, to control any mist/particulate emissions below allowable limits. See Exposure Limits in Section 2.
Respiratory:	Provide workers with legally approved respirators for level of exposure incurred.
Eye:	The use of proper eye protection is recommended (ex. safety glasses).
Hand:	The use of proper hand protection is recommended (ex. barrier cream with anti-slip gloves).
Other:	Safety shoes and long sleeve shirts is recommended for foot and skin protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: A gray-brown, damp, moldable mixture of fine materials; odorless.

Boiling Point:	Not Applicable
Melting Point:	>2000°F (1100°C)
Bulk Density:	See specific Product Data Sheet
% Volatile by Volume:	0
Evaporation Rate:	Not applicable
Water Solubility:	1%
pH (10% aqueous slurry):	6-7
Specific Gravity (g/cc):	Mixture

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Incompatibility	None
Hazardous Decomposition	None

11. TOXICOLOGICAL INFORMATION

Substance & CAS Number	Carcinogenic Data	Summary of Hazards
Aluminosilicate (CAS 1302-76-7)	No Data Found	Respiratory: Nuisance Particulate
Silica, Amorphous (CAS 69012-64-2)	IARC Group 3	Respiratory: Inhalation Hazard
Cristobalite (CAS 14464-46-1)	IARC Group 1	Respiratory: May Develop Silicosis
Quartz (CAS 14808-60-7)	IARC Group 1	Respiratory: May Develop Silicosis

12. ECOLOGICAL INFORMATION

No Data Available

13. DISPOSAL INFORMATION

This product, as manufactured, does not exhibit any characteristics of a hazardous waste. It is suitable for landfill disposal. However, debris generated during installation, maintenance or tear-out procedures may be contaminated with other hazardous materials. Therefore, appropriate waste analysis may be necessary to determine proper disposal. Waste characterisation and disposal/treatment methods should be determined by a qualified environmental professional in accordance with applicable federal (country specific), state, and local regulations (laws).

14. TRANSPORTATION INFORMATION

This product is not classified as a hazardous material for transportation. No hazard class, no label or placard required, no UN or NA number assigned. Shipment outside the U.S. should be reviewed by a environmental professional for country specific regulatory requirements.

15. REGULATORY INFORMATION

Products or components of mixture regulated under the following
U.S.A Regulations:
Sara Title III: (302/304) No; (311/312) Yes; (313) No
CERCLA (RQ): No
TSCA: Yes (All Substances listed in ingredients)
California Proposition 65: Yes (Silica)
HMIS Codes: Health: 1 Fire: 0 Reactivity: 0 Protection: B
Canadian Regulations:
Domestic Substance List (DSL): Yes (All Substances Listed)
WHMIS Class: D2A
Contact Phone # 905-732-4441
Australian and European Regulations:
(Australian) Risk and Safety Phrases: None Established
(U.K.) Risk and Safety Phrases: None Established
Poison Information Center Contact:
(Australia) 24hr. 13 11 26 (Police 000)
(New Zealand) 03 479 1200-normal Hrs.
03 474 0999-emergency
(UK) Product Line Fax 44 (0) 1246 571700

16. OTHER INFORMATION

Removal After Service/Tear-Out Precautions:
Because of the possible presence of crystalline silica in used refractory debris, particular care should be exercised during tear-out to minimise the generation of dust. Adherence to proper methods of dust suppression and control is imperative. The following precautions should be taken during tear-out.
1.) Employees should be apprised of the hazards and proper conditions and precautions for safe use or exposure.
2.) Approved respirators, in accordance with requirements of federal regulations, should be used for dust levels above established exposure limits for respirable crystalline silica.
3.)Dust generation should be minimised by the use of dust control equipment or water spray.
4.)Wear protective clothing and vacuum clean prior to removing clothing.
5.)Where there is a possibility of exposure to dust containing respirable crystalline silica, the following warning should be posted.

FREE SILICA WORK AREA	AVOID BREATHING DUST
DUST MAY CAUSE DELAYED LUNG INJURY	
(SILICOSIS)	

ACRONYMS AND REFERENCES USED IN PREPARATION OF MSDS':

ACGIH: American Conference of Governmental Industrial Hygienists
CAS#: Stands forChemicalAbstractsService
CERCLA: Comprehensive Environmental Response, Compensation & Liability Act
IARC: International Agency for Research on Cancer
Group 1: Carcinogenic to Humans. (IARC)
Group 2A: Probably Carcinogenic to Humans. (IARC)
Group 2B: Possibly Carcinogenic to Humans. (IARC)
Group 3: Unclassifiable as to Carcinogenicity in Humans. (IARC)
Group 4: Probably not Carcinogenic to Humans. (IARC)
HMIS: Hazardous Materials Identification (National Paint and Coatings Association)
mg/m^3: Milligrams per cubic meter
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit (OSHA)
SARA: Superfund Amendments and Reauthorization Act
TITLE III: Emergency Planning and Community Right To Know Act
Section 302: Extremely Hazardous Substances
Section 304: Emergency Release
Section 311: *Community Right-to-Know*, MSDS or List of Chemicals
Section 312: *Community Right-to-Know*, Inventories & Locations, (Tier I/Tier II)
Section 313: Toxic Chemicals, Toxic Chemical Release Reporting, Form R
TLV: Threshold Limit Values (ACGIH)
TWA: Time Weighted Average

REFERENCES:

Sax, N. Irving: Dangerous Properties of Industrial Materials, Ninth Edition, Van Nostrand Reinhold Co., Inc., 1996.
Kirk, R. and Othmer, D., Encyclopedia of Chemical Technology, Third Edition, Wiley-Interscience, New York, NY 1982.
Clansky, K.B., Suspect Chemicals Sourcebook, 1992-2 Edition, Roytech Publications, Bethesda, Maryland.
Sax, N.Irving and Lewis,R.J. Hawley's Condensed Chemical Dictionary, Eleventh Ed., Van Nostrand Reinhold Co.,Inc., NY
Manufacturers/Suppliers, Material Safety Data Sheets on Raw Materials Used
American National Standard for Hazardous Industrial Chemicals - Material Safety DataSheets - Preparation, American National Standards Institute, Inc.11 West 42nd St, New York, NY 10036.