

MISSOURI REFRACTORIES CO., INC.

SAFETY DATA SHEET (SDS)

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1) Identification

- a) Product identifier used on the label;
 - i) ALIGRAPH 2
- b) Other means of identification;
 - i) Alumino-Silicate Refractory
- c) Recommended use of the chemical and restrictions on use;
 - i) Refractory
- d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party;
 - i) Missouri Refractories Company Incorporated
 - ii) 1198 Mason Circle Drive North
 - iii) Pevely, Missouri 63070, United States of America
 - iv) +1-636-479-7770
- e) Emergency phone number.
 - i) +1-636-479-7770 07:00-16:00 UTC -6:00
 - ii) +1-573-368-7628 Emergency only at other hours

2) Hazard(s) identification

- a) Classification of the chemical in accordance with paragraph (d) of §1910.1200;
 - i) Carcinogenicity 1A; H350 May cause cancer (inhalation)
 - ii) Specific target organ toxicity-repeated exposure 1; H372 Causes damage to organs through prolonged or repeated exposure (inhalation).
 - iii) Skin Irritation 2; H315 Causes skin irritation.
 - iv) Eye Irritation 2B; H320 Causes eye irritation.
- b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones);
 - i) Signal word
 - (1) Danger
 - ii) Hazard statement(s)
 - (1) H315 Causes skin irritation.
 - (2) H320 Causes eye irritation.
 - (3) H350 May Cause Cancer (inhalation).
 - (4) H372 Causes damage to organs through prolonged or repeated exposure (inhalation).
 - iii) Hazard symbol(s)



- (1) GHS 08 Harmful to health
- iv) Precautionary statement(s)
 - (1) P201 Obtain special instructions before use.
 - (2) P202 Do not handle until all safety precautions have been read and understood.
 - (3) P260 Do not breathe dust.
 - (4) P264 Wash hands, forearms and other exposed areas thoroughly after handling.
 - (5) P270 Do not eat, drink or smoke when using this product.
 - (6) P280 Wear protective gloves, protective clothing, eye protection, respiratory protection.
 - (7) P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if



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- present and easy to do. Continue rinsing.
 - (8) P308+P313 If exposed or concerned: Get medical advice/attention.
 - (9) P314 Get medical advice and attention if you feel unwell.
 - (10) P332+P313 If skin irritation occurs: Get medical advice/attention.
 - (11) P337+P313 If skin irritation persists: Get medical advice/attention.
 - (12) P501 Dispose of contents/container according to local, regional, national, territorial, provincial, and international regulations.
- c) Describe any hazards not otherwise classified that have been identified during the classification process;
- i) No additional information available
- d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration $\geq 1\%$ and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.
- i) Not applicable

3) Composition/ information on ingredients

- a) For Substances
- i) Chemical name;
 - (1) Not applicable
 - ii) Common name and synonyms;
 - (1) Not applicable
 - iii) CAS number and other unique identifiers;
 - (1) Not applicable
 - iv) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.
 - (1) Not applicable
- b) For Mixtures
- i) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of § 1910.1200 and are present above their cut-off/concentration limits; or present a health risk below the cut-off/concentration limits.
 - (1) Not applicable
 - ii) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of § 1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures (*See* A.0.5.1.2) with similar chemical composition. In these cases, concentration ranges may be used
 - (1)

CHEMICAL NAME	CAS#	%	GHS-US Classification
Aluminum Oxide	1344-28-1	75	Not Classified
Aluminum Silicate	66402-68-4	1	Not Classified
Aluminum Sulfate	16828-12-9	3	Skin Irrit. 2, H315 Eye Irrit. 2B, H320
Graphite	7782-42-5	7	Eye Corr. 2A Skin Sens. 3
Phosphoric Acid	7664-38-2	5	Not Classified
Silica, Cristobalite	14464-46-1	0-1	Carc. 1A, H350 STOT RE 1, H372
Silica, Quartz	14808-60-70	0-1	Carc. 1A, H350 STOT RE 1, H372

4) First-aid measures



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- a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion;
 - i) **INHALATION:** If exposed to excessive levels of dusts or vapors, remove victim to fresh air. Seek medical attention if coughing or other symptoms persist.
 - ii) **SKIN:** Wash product from skin using soap and water. If irritation continues, seek medical attention.
 - iii) **EYES:** Flush product from eyes using large amounts of water. If irritation continues, seek medical attention.
 - iv) **INGESTION:** Do not induce vomiting. If irritation continues, seek medical attention.
 - b) Most important symptoms/effects, acute and delayed.
 - i) **GENERAL:** Causes damage to organs through prolonged or repeated exposure by inhalation.
 - ii) **INHALATION:** Evidence exists that this causes cancer by inhalation. Dust from this product will cause irritation to the respiratory tract. Repeated or prolonged exposure to respirable silica dust will cause lung damage in the form of silicosis. Symptoms include progressively more difficulty breathing, cough and fever. Acute silicosis can be fatal.
 - iii) **SKIN:** Prolonged contact will cause irritation.
 - iv) **EYES:** Prolonged contact will cause irritation.
 - v) **INGESTION:** Large quantities will cause intestinal irritation and blockage.
 - c) Indication of immediate medical attention and special treatment needed, if necessary.
 - i) If exposed or concerned, get medical advice and attention.
- 5) Fire-fighting measures**
- a) Suitable (and unsuitable) extinguishing media.
 - i) As appropriate for surrounding fire.
 - b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).
 - i) This product is not combustible or explosive.
 - c) Special protective equipment and precautions for fire-fighters.
 - i) As appropriate for surrounding fire.
- 6) Accidental release measures**
- a) Personal precautions, protective equipment, and emergency procedures.
 - i) Do not breath dust. Avoid generating dust.
 - ii) All personnel engaged in cleanup operations should adhere to the instructions outlined in Section 8 for personal protection.
 - iii) Evacuate unnecessary personnel.
 - b) Methods and materials for containment and cleaning up.
 - i) Ventilate area.
 - ii) Sweep or shovel into appropriate waste containers.
 - iii) If dusts are generated during the spill, these should be collected by gently sweeping the material into a dust pan or collecting with a vacuum device. Dampen prior to sweeping to minimize dust production. Do not empty material into drains, sewers or water courses as fines harden in contact with water. Disposal of wastes from cleanup operations should be carried out in accordance to the guidelines outlined in Section 13.
- 7) Handling and storage**
- a) Precautions for safe handling.
 - i) Avoid direct contact with product or dust from product by wearing protective clothing, using approved respiratory protection, and wearing gloves of the impermeable type as outlined in Section 8.
 - ii) Maintain good personal hygiene. Wash hands thoroughly before eating or drinking. Do not eat, drink or smoke when using.
 - b) Conditions for safe storage, including any incompatibilities.
 - i) The product should be stored in a dry location. Pallet protection such as shrink-wrap or stretch-wrap should be kept in place until the product is required for installation. Store in manufacturers sealed container. Avoid heat sources and direct sunlight.

8) Exposure controls/personal protection

- a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.
- i) ALIGRAPH 2
 - (1) ACGIH: Not applicable
 - (2) OSHA: Not applicable
 - ii) Aluminum oxide, non-fibrous, CAS 1344-28-1
 - (1) ACGIH TWA 1 mg/m³ respirable dust
 - (2) OSHA PEL TWA 15 mg/m³ 5 mg/m³ respirable fraction
 - (3) France VME 10 mg/m³
 - (4) Spain VLA-ED 10 mg/m³
 - (5) Germany OEL TWA 10 mg/m³
 - (6) Portugal TWA 10 mg/m³
 - (7) Denmark TWA 10 mg/m³
 - iii) Barium Sulfate, CAS 7727-43-7
 - (1) NIOSH REL TWA 5 mg/m³
 - (2) ACGIH TWA 10 mg/m³
 - (3) OSHA PEL TWA 0.5 mg/m³
 - (4) Mexico CPT 0.5 mg/m³
 - iv) Calcined Bauxite, CAS 1318-16-7
 - (1) ACGIH TWA 10 mg/m³
 - (2) OSHA PEL TWA 5 mg/m³
 - v) Calcium aluminate cement, CAS 65997-16-2
 - (1) ACGIH: Not applicable
 - (2) OSHA: Not applicable
 - vi) Calcium Fluoride, CAS 7789-75-5
 - (1) USA ACGIH TWA 2.5 mg/m³
 - (2) USA OSHA PEL TWA 2.5 mg/m³
 - (3) United Kingdom OEL-TWA 2.5 mg/m³
 - (4) Bulgaria ACGIH TLV-TWA 2.5 mg/m³
 - (5) Hungary OEL 2.5 mg/m³
 - (6) Austria OEL 2.5 mg/m³
 - (7) Estonia, Netherlands, Sweden OEL 2.5 mg/m³
 - (8) Germany OEL 1 mg/m³
 - (9) Poland MAC 1 mg/m³
 - (10) Switzerland OEL 1 mg/m³
 - (11) Iceland OEL 0.6 mg/m³
 - (12) Belgium, Denmark, Finland, Greece, Ireland, Italy, Luxembourg, Mexico, Portugal, South Africa OEL 2.5 mg/m³
 - vii) Graphite, CAS 7782-42-5
 - (1) ACGIH TWA 2 mg/m³ respirable dust
 - viii) Magnesium Oxide
 - (1) Mexico OEL TWA 10 mg/m³
 - (2) USA ACGIH TWA 10 mg/m³
 - (3) USA OSHA PEL TWA 15 mg/m³
 - (4) USA IDLH 750 mg/m³
 - (5) Alberta OEL TWA 10 mg/m³

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- (6) British Columbia OEL STEL 10 mg/m³
- (7) British Columbia OEL TWA 3 mg/m³
- (8) Manitoba OEL TWA 10 mg/m³
- (9) New Brunswick OEL TWA 10 mg/m³
- (10) Newfoundland & Labrador OEL TWA 10 mg/m³
- (11) Nova Scotia OEL TWA 10 mg/m³
- (12) Nunavut OEL STEL 20 mg/m³
- (13) Nunavut OEL TWA 10 mg/m³
- (14) Northwest Territories OEL STEL 20 mg/m³
- (15) Northwest Territories OEL TWA 10 mg/m³
- (16) Ontario OEL TWA 10 mg/m³
- (17) Prince Edward Island OEL TWA 10 mg/m³
- (18) Québec VEMP (mg/m³) 10 mg/m³
- (19) Saskatchewan OEL STEL 20 mg/m³
- (20) Saskatchewan OEL TWA 10 mg/m³
- (21) Yukon OEL STEL 10 mg/m³
- (22) Yukon OEL TWA 10 mg/m³
- ix) Magnesium phosphate, monobasic, CAS 13092-66-5
 - (1) USA ACGIH TWA 10 mg/m³
 - (2) USA OSHA PEL TWA 15 mg/m³
- x) Phosphoric acid, CAS 7664-38-2
 - (1) USA ACGIH TWA 1 mg/m³
 - (2) USA OSHA PEL TWA 1 mg/m³
 - (3) NIOSH REL TWA 1 mg/m³
- xi) Silica, amorphous, CAS 7631-86-9
 - (1) NIOSH REL TWA 6 mg/m³
 - (2) IDLH 3000 mg/m³
 - (3) Nunavut OEL TWA 0.15 mg/m³ total mass, regulated under Silica flour
 - (4) Northwest Territories OEL TWA 0.15 mg/m³ total mass regulated under Silica flour
 - (5) Yukon OEL TWA 2 mg/m³
- xii) Silica, cristobalite, CAS 14464-46-1
 - (1) ACGIH TWA 0.025 mg/m³
 - (2) OSHA PEL TWA 0.05 mg/m³
 - (3) NIOSH REL TWA 0.05 mg/m³
 - (4) IDLH 25 mg/m³
 - (5) Mexico OEL TWA 0.05 mg/m³
 - (6) Alberta OEL TWA 0.025 mg/m³
 - (7) British Columbia OEL TWA 0.025 mg/m³
 - (8) Manitoba OEL TWA 0.025 mg/m³
 - (9) New Brunswick OEL TWA 0.05 mg/m³
 - (10) Newfoundland & Labrador OEL TWA 0.025 mg/m³
 - (11) Nova Scotia OEL TWA 0.025 mg/m³
 - (12) Nunavut OEL TWA 0.15 mg/m³ total mass
 - (13) Northwest Territories OEL TWA 0.15 mg/m³ total mass
 - (14) Ontario OEL TWA 0.025 mg/m³ designated substance regulation
 - (15) Quebec VEMP 0.05 mg/m³
 - (16) Saskatchewan OEL TWA 0.05 mg/m³

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- (17) Yukon OEL TWA 150 particle/mL
- xiii) Silica, quartz, CAS 14808-60-1
 - (1) ACGIH TWA 0.025 mg/m³
 - (2) NIOSH REL TWA 0.05 mg/m³
 - (3) IDLH 50 mg/m³
 - (4) Mexico OEL TWA 0.1 mg/m³
 - (5) Alberta OEL TWA 0.025 mg/m³
 - (6) British Columbia OEL TWA 0.025 mg/m³
 - (7) Manitoba OEL TWA 0.025 mg/m³
 - (8) New Brunswick OEL TWA 0.1 mg/m³
 - (9) Newfoundland & Labrador OEL TWA 0.025 mg/m³
 - (10) Nova Scotia OEL TWA 0.025 mg/m³
 - (11) Nunavut OEL TWA 0.3 mg/m³ total mass
 - (12) Northwest Territories OEL TWA 0.3 mg/m³ total mass
 - (13) Ontario OEL TWA 0.1 mg/m³ designated substance regulation
 - (14) Quebec VEMP 0.1 mg/m³
 - (15) Saskatchewan OEL TWA 0.05 mg/m³
 - (16) Yukon OEL TWA 300 particle/mL
- xiv) Silicon Carbide, CAS 409-21-2
 - (1) ACGIH TWA 10 mg/m³
 - (2) OSHA PEL TWA 10 mg/m³ 3 mg/m³ respirable
 - (3) Canada EL 10 mg/m³ 3 mg/m³ respirable
 - (4) Canada EV 10 mg/m³ 3 mg/m³ respirable
- xv) Spinel, CAS 1302-67-6, No apparent information found
- xvi) Titanium dioxide, CAS 13463-67-7
 - (1) ACGIH TWA 10 mg/m³
 - (2) OSHA PEL TWA 15 mg/m³
 - (3) IDLH 5000 mg/m³
 - (4) Mexico OEL STEL 20 mg/m³
 - (5) Mexico OEL TWA 10 mg/m³
 - (6) Alberta OEL TWA 10 mg/m³
 - (7) British Columbia OEL TWA 3 mg/m³
 - (8) Manitoba OEL TWA 10 mg/m³
 - (9) New Brunswick OEL TWA 10 mg/m³
 - (10) Newfoundland & Labrador OEL TWA 10 mg/m³
 - (11) Nova Scotia OEL TWA 10 mg/m³
 - (12) Nunavut OEL TWA 10 mg/m³ total mass
 - (13) Northwest Territories OEL TWA 10 mg/m³ total mass
 - (14) Ontario OEL TWA 10 mg/m³ designated substance regulation
 - (15) Prince Edward Island OEL TWA 10 mg/m³
 - (16) Quebec VEMP 10 mg/m³
 - (17) Saskatchewan OEL STEL 20 mg/m³
 - (18) Saskatchewan OEL TWA 10 mg/m³
 - (19) Yukon OEL STEL 20 mg/m³
 - (20) Yukon OEL TWA 10 mg/m³
- xvii) Zirconium Dioxide
 - (1) OSHA PEL TWA 15 mg/m³ 5 mg/m³ respirable

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- (2) NIOSH REL TWA 10 mg/m³
- (3) Canada EL 10 mg/m³

- b) Appropriate engineering controls.
 - i) Process enclosures, local exhaust ventilation, or other engineering process controls may be necessary to keep any air contaminants associated with this product within their TLV's. This is particularly true if the user operation generates dust, vapors, or mist. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure
 - ii) Where there is the potential exposure to free silica (cristobalite), the following warnings should be readily visible and posted near entrances to work areas: **WARNING! FREE SILICA WORK AREA.** Unauthorized persons keep out. The following should be posted within the work area where potential exposure may occur: **WARNING! FREE SILICA WORK AREA.** Avoid Breathing Dust. May Cause Delayed Lung Injury (silicosis). (NIOSH Criteria Document, Occupational Exposure to Crystalline Silica).
- c) Individual protection measures, such as personal protective equipment.
 - i) Respiratory protection, NIOSH approved air-purifying or supplied air respirator where airborne concentrations of dust are expected to exceed exposure limits.
 - ii) Protective clothing, chemical resistant materials and fabrics. If clothing becomes contaminated, it should be laundered before wearing again. Do not take contaminated clothing home.
 - iii) Protective goggles or safety glasses
 - iv) Impervious gloves
 - v) Maintain good personal hygiene. Wash hands thoroughly before eating or drinking. Do not eat, drink or smoke when using.

9) Physical and chemical properties

- a) Appearance (physical state, color, etc.);
 - i) Physical State, Wet granular powder
 - ii) Color, white, grey or dark grey aggregate and powder in suspension
- b) Odor; Oderless
- c) Odor threshold; Not available
- d) pH; Not applicable
- e) Melting point/freezing point; >1700°C
- f) Initial boiling point and boiling range; Not applicable
- g) Flash point; Not applicable
- h) Evaporation rate; Not applicable
- i) Flammability (solid, gas); Not applicable
- j) Upper/lower flammability or explosive limits; Not applicable
- k) Vapor pressure; Not applicable
- l) Vapor density; Not applicable
- m) Relative density; 2-4
- n) Solubility(ies); Slightly soluble in water
- o) Partition coefficient: n-octanol/water; Not applicable
- p) Auto-ignition temperature; Not applicable
- q) Decomposition temperature; Not applicable
- r) Viscosity. Not applicable

10) Stability and reactivity

- a) Reactivity; Hydraulic setting
- b) Chemical stability; Stable
- c) Possibility of hazardous reactions; Not established
- d) Conditions to avoid (e.g., static discharge, shock, or vibration); Avoid dust formation

- e) Incompatible materials; Strong acids, strong bases and strong oxidizers
- f) Hazardous decomposition products. Not established

11) Toxicological information

- a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);
 - i) Carcinogenicity 1A; H350 May cause cancer (inhalation)
 - ii) Specific target organ toxicity-repeated exposure 1; H372 Causes damage to organs through prolonged or repeated exposure (inhalation).
 - iii) Skin Irritation 2; H315 Causes skin irritation.
 - iv) Eye Irritation 2B; H320 Causes eye irritation.
 - v) Ingestion
- b) Symptoms related to the physical, chemical and toxicological characteristics;
 - (1) H315 Causes skin irritation. Prolonged contact with large amounts of dust causes mechanical irritation.
 - (2) H320 Causes eye irritation. Prolonged contact with large amounts of dust causes mechanical irritation.
 - (3) H350 May Cause Cancer (inhalation).
 - (4) Intestinal blockage and gastrointestinal irritation.
- c) Delayed and immediate effects and also chronic effects from short- and long-term exposure;
 - (1) H350 May Cause Cancer (inhalation). Repeated or prolonged exposure to respirable silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever and weight loss. Acute silicosis can be fatal.
 - (2) H372 Causes damage to organs through prolonged or repeated exposure (inhalation).
- d) Numerical measures of toxicity (such as acute toxicity estimates).
 - i) Quartz (14808-60-7): LD50 Oral Rat > 5000 mg/kg
 - ii) Titanium dioxide (13463-67-7): LD50 Oral Rat > 10000 mg/kg
 - iii) Silica, amorphous (7631-86-9): LD50 Oral Rat > 5000 mg/kg; LD50 Dermal Rabbit > 2000 mg/kg; LC50 Inhalation Rat (mg/l) > 2.2 mg/l (Exposure time: 1h)
- e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
 - i) Quartz (14808-60-7): IARC Group I 1; National Toxicity Program (NTP) Status 2
 - ii) Silica, amorphous (7631-86-9): IARC Group 3
 - iii) Silica, cristobalite (14464-46-1): IARC Group 1
 - iv) Titanium dioxide (13463-67-7): IARC Group 2B; National Toxicity Program (NTP) Status 1

12) Ecological information (Non-mandatory)

- a) Ecotoxicity (aquatic and terrestrial, where available);
 - i) Silica, amorphous (7631-86-9)
 - (1) LC50 Fish 1; 5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
 - (2) EC50 Daphnia 1; 7600 mg/l (Exposure time : 48 h - Species: Ceriodaphnia dubia)
 - (3) EC50 Other Aquatic Organisms 1; 440 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
- b) Persistence and degradability; Not established
- c) Bioaccumulative potential; Not established
- d) Mobility in soil; Not established
- e) Other adverse effects (such as hazardous to the ozone layer): Non established, avoid release into the environment.

13) Disposal considerations (Non-mandatory)

- a) Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.
 - i) Avoid release into environment.



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- ii) Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.
- iii) No sewage disposal. The as manufactured material, or dust from this material, is not considered a hazardous waste as defined by 40 CFR 261. However, used product (and dust generated during maintenance and tear-out operations) may be contaminated with other hazardous substances from the particular application (for example, metals). Therefore, appropriate waste analysis may be necessary to determine proper disposal. Waste characterization and disposal/treatment methods should be determined by a qualified environmental professional in accordance with applicable federal, state, and local regulations.

14) Transport information (Non-mandatory)

- a) UN number: Not regulated for transport.
- b) UN proper shipping name: Not regulated for transport.
- c) Transport hazard class(es): Not regulated for transport.
- d) Packing group, if applicable: Not regulated for transport.
- e) Environmental hazards (e.g., Marine pollutant (Yes/No)): No apparent information available.
- f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable
- g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises: No apparent information available.

15) Regulatory information (Non-mandatory)

- a) Safety, health and environmental regulations specific for the product in question.
- b) US Federal Regulations
 - i) SARA Section 311/312 Hazard Classes
 - (1) Immediate (acute) health hazard
 - (2) Delayed (chronic) health hazard
 - ii) Listed on the United States TSCA (Toxic Substances Control Act) inventory
 - (1) Aluminum Oxide (1344-28-1)
 - (2) Aluminum Silicate (66402-68-4)
 - (3) Calcined Chinese Bauxite (1318-16-7)
 - (4) Calcium Aluminate Cement (65997-16-2)
 - (5) Graphite, CAS 7782-42-5
 - (6) Silicon Carbide, CAS 409-21-2
 - (7) Magnesium Oxide, CAS 1309-48-4
 - (8) Magnesium phosphate, monobasic, CAS 13092-66-5
 - (9) Mullite (1302-93-8)
 - (10) Phosphoric Acid, CAS 7664-38-2
 - (11) Quartz (14808-60-7)
 - (12) Silica, amorphous (7631-86-9)
 - (13) Silica, cristobalite (14464-46-1)
 - (14) Spinel, CAS 1302-67-6
 - (15) Titanium dioxide (13463-67-7)
 - (16) Zirconium Dioxide (1314-23-4)
- c) US State Regulations
 - i) U.S. California - Proposition 65 - Carcinogens List: Warning: This product contains chemicals known to the state of California to cause cancer.
 - (1) Quartz (14808-60-7)
 - (2) Titanium dioxide (13463-67-7)
 - ii) U.S. Massachusetts – Right to Know List
 - (1) Barium Sulfate, CAS 7727-43-7
 - (2) Phosphoric Acid, CAS 7664-38-2
 - (3) Quartz (14808-60-7)

- (4) Silica, amorphous (7631-86-9)
- (5) Silica, cristobalite (14464-46-1)
- (6) Titanium dioxide (13463-67-7)
- (7) Magnesium Oxide, CAS 1309-48-4
- iii) U.S. New Jersey – Right to Know Hazardous Substance List
 - (1) Barium Sulfate, CAS 7727-43-7
 - (2) Magnesium Oxide, CAS 1309-48-4
 - (3) Phosphoric Acid, CAS 7664-38-2
 - (4) Quartz (14808-60-7)
 - (5) Silica, amorphous (7631-86-9)
 - (6) Silica, cristobalite (14464-46-1)
 - (7) Titanium dioxide (13463-67-7)
- iv) U.S. Pennsylvania – RTK (Right to Know) List
 - (1) Barium Sulfate, CAS 7727-43-7
 - (2) Magnesium Oxide, CAS 1309-48-4
 - (3) Phosphoric Acid, CAS 7664-38-2
 - (4) Quartz (14808-60-7)
 - (5) Silica, amorphous (7631-86-9)
 - (6) Silica, cristobalite (14464-46-1)
 - (7) Titanium dioxide (13463-67-7)
- v) U.S. Rhode Island – RTK (Right to Know) List
 - (1) Phosphoric Acid, CAS 7664-38-2
- d) Canadian Regulations
 - i) WHMIS Classification
 - (1) Class D Division 2 Subdivision A – Very toxic material causing other toxic effects
 - (2) Class D Division 2 Subdivision B – Toxic material causing other toxic effects
 - (3) Magnesium Oxide, CAS 1309-48-4: Uncontrolled product
 - (4) Phosphoric Acid (7664-38-2): Class E – Corrosive
 - (5) Quartz (14808-60-7): Class D Division 2 Subdivision A – Very toxic material causing other toxic effects
 - (6) Silica, amorphous (7631-86-9): Uncontrolled product
 - (7) Silica, cristobalite (14464-46-1): Class D Division 2 Subdivision A – Very toxic material causing other toxic effects
 - (8) Titanium dioxide (13463-67-7): Class D Division 2 Subdivision A – Very toxic material causing other toxic effects
 - ii) Listed on the Canadian DSL (Domestic Substances List) inventory
 - (1) Graphite, CAS 7782-42-5
 - (2) Magnesium Oxide, CAS 1309-48-4
 - (3) Magnesium phosphate, monobasic, CAS 13092-66-5
 - (4) Mullite (1302-93-8)
 - (5) Phosphoric Acid (7664-38-2)
 - (6) Quartz (14808-60-7)
 - (7) Silica, amorphous (7631-86-9)
 - (8) Silica, cristobalite (14464-46-1)
 - (9) Silicon Carbide, CAS 409-21-2
 - (10) Titanium dioxide (13463-67-7)
 - (11) Zirconium Dioxide (1314-23-4)
 - iii) Listed on the Canadian Ingredient Disclosure List
 - (1) Magnesium Oxide, CAS 1309-48-4
 - (2) Mullite (1302-93-8)
 - (3) Phosphoric Acid (7664-38-2)



MISSOURI REFRACTORIES CO., INC.

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- (4) Quartz (14808-60-7)
- (5) Silica, amorphous (7631-86-9)
- (6) Silica, cristobalite (14464-46-1)
- (7) Titanium dioxide (13463-67-7)

16) Other information, including date of preparation or last revision

- a) This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200. According to the Federal Register, Volume 77, Number 58, Monday, March 26 2012, Rules and Regulations. With additional information added for future compliance with Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Fifth revised edition, ST/SG/AC.10/30/Rev.5, United Nations, New York and Geneva, 2013.
- b) This information is supplied to be informative and to alert the user of the material. The ultimate compliance with federal, state, and/or local regulations concerning the use of this material, or compliance with respects to products liability, rest solely upon the purchaser thereof.
- c) **DISCLAIMER:** Reasonable care has been taken in the preparation of the information provided, and believed to be correct as of the issue date. However, Missouri Refractories Company Inc. makes no representation or warranties, and assumes no responsibility as to the completeness and accuracy thereof. Users must make their own determination as to the suitability of the product for their purpose prior to use. Missouri Refractories Company Inc. will not be responsible for any damages of any nature directly or indirectly whatsoever resulting from the use of, reliance upon, or the misuse of the information contained herein.
- d) This information is offered solely for the use in the evaluation of this product in respect, to safety, health, and compliance with international, federal, state and/or local regulations.
- e) The date of preparation of the SDS or the last change to it.
 - i) Issue Date: 6/1/2015
 - ii) Revision Date: 7/1/2015
 - iii) Revision Number: 1