SAFETY DATA SHEET (SDS)
CONCRETE MASONRY PRODUCTS

SECTION 1 – IDENTIFICATION
Concrete Masonry Products (Block, Architectural Block, Pavers, Segmental Retaining Wall units, Concrete Brick)

Tupelo Concrete Products, Inc
120 Industrial Road North
Tupelo, Mississippi 38801
Emergency phone: (662) 842-7811
Information phone: (662) 842-7811

Date prepared: September, 2017
Product use: Concrete products are used in a wide variety of applications in buildings and civil engineering projects.

SECTION 2 – HAZARD IDENTIFICATION

Emergency Overview:
Concrete products vary in size, shape and color, depending on final use. They are not combustible or explosive. Concrete products in their intact state will not release airborne dust, but dust can be produced during dry cutting, dry drilling, dry grinding, dry chasing and other dry machining of the product. A single, short-term exposure to concrete dust presents little or no hazard. Any precautionary statements relating to potential negative health effects is solely in reference to instances where concrete masonry products are being modified by cutting, drilling, grinding in a dry dusty situation. Modification with a water wash is considered safe. Pictograms reference only dry processes to the concrete.

Potential Health Effects:

Eye Contact:
Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of concrete dust can cause moderate eye irritation and abrasion. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Skin Contact:
Concrete dust may cause dry skin, discomfort, irritation and dermatitis.

Dermatitis:
Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of concrete dust such as abrasion.

Inhalation (acute):
Breathing dust may cause nose, throat or lung irritation, including choking, depending on the degree of exposure.

Inhalation (chronic):
Risk of injury depends on duration and level of exposure.

Silicosis:
This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease. See Note to Physicians in Section 4 for further information.

Carcinogenicity:
Concrete is not listed as a carcinogen by IARC or NTP; however, concrete contains trace amounts of crystalline silica which is classified by IARC and NTP as known human carcinogens.

Autoimmune Disease:
Some studies show that exposure to respirable crystalline silica (w/o silicosis) that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

Tuberculosis:
Silicosis increases the risk of tuberculosis.

Renal Disease:
Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

Ingestion:
Do not ingest concrete. Although ingestion of small quantities of concrete is not known to be
harmful, large quantities can cause distress to the digestive tract.

Medical Conditions

Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

SECTION 3 – CHEMICAL COMPOSITION

Hazardous Components: Finished Concrete Masonry Products typically contain the following components that meet the hazard definitions and reporting requirements in 29CFR 1910.1200, the OSHA Hazard Communication standard:

- Sand, Aggregates and Flyash [containing Crystalline Silica – Quartz and Cristobalite]
- Limestone Cement

Finished concrete masonry products are made with ingredients that are primarily nuisance dusts although some ingredients may contain crystalline silica. Some finished concrete masonry products may contain traces of residual materials from material enhancement additives such as plasticizers, accelerators, pigments or water repellants. The concentrations of trace materials are expected to be below reporting thresholds for the OSHA Hazard Communication standard.


Flyash (Coal Ash by-product CAS 68131-74-8)

Common Names: Sand also known as Silica, Flint, Sand, Crystalline Free Silica, Quartz, Ground Silica, Silica Flour Limestone also known as marble, marble chips, granite, and calcium carbonate Cement also known as Portland cement, cement kiln dust, kiln precipitator catch, waste kiln dust, and Ground Granulated Blast Furnace Slag cement Flyash also known as boiler ash, coal ash byproduct, coal dust, coal flyash and pulverized flyash

Exposure Standards

<table>
<thead>
<tr>
<th>Substance</th>
<th>OSHA PEL-TWA</th>
<th>2006 version of ACGIH TLV-TWA</th>
<th>NIOSH REL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand, Aggregates and Containing crystalline Silica (Quartz)</td>
<td>See PEL formula below for Respirable silica-quartz</td>
<td>0.025 mg/cm respirable dust</td>
<td>0.05 mg/cm respirable dust</td>
</tr>
<tr>
<td>Limestone, Cement (as Portland Cement), Aluminum oxide</td>
<td>15 mg/cm respirable dust</td>
<td>10 mg/cm inhalable dust</td>
<td>10 mg/cm total dust</td>
</tr>
<tr>
<td>Calcium Oxide</td>
<td>5 mg/cm total dust</td>
<td>12 mg/cm inhalable Dust</td>
<td>2 mg/cm total dust</td>
</tr>
</tbody>
</table>

**OSHA PEL:** The Occupational Safety and Health Administration established Permissible Exposure Limits for the substances potentially present as components of concrete masonry dusts for 8-hour time-weighted average exposures. The OSHA PELs are legal control limits found in 29 CFR 1910.1000, Air Contaminants, Table Z-1, Table Z-2 and Table Z-3.

Exposure to respirable airborne crystalline silica shall not exceed an 8-hour time-weighted average limit as calculated using the formula below from 1910.1000, Table Z-3, Mineral Dusts:

Silica, Crystalline Quartz (Respirable Dust)

For Cristobalite, use \( \frac{1}{2} \) the value calculated from the formula for Quartz.

Respirable dusts are particles collected after passing through an appropriate size-selective sampling device meeting the aerodynamic diameter criterion listed in 1910.1000, Table Z-3.

**ACGIH TLV:** The American Conference of Governmental Industrial Hygienists established Threshold Limit Values for the substances potentially present as components of concrete masonry dust for 8-hour time-weighted average exposures. The ACGIH TLVs are exposure standards recommended as a matter of good safety and health practice.

**NIOSH REL:** The National Institute for Occupational Safety and Health (NIOSH). Recommended Exposure Limits established standard maximum permissible concentrations as determined by a full-shift sample up to a 10-hour work day, 40-hour work week.
Note: The addition of Flyash and Ground Granulated Blast Furnace Slag cement may introduce trace metal contaminants. Exclusive use of Ground Granulated Blast Furnace Slag Cements in a typical concrete or masonry product mixture may add metallic oxides of Aluminum and Calcium in excess of the 1% hazard ingredient reporting threshold by OSHA.

It should be noted that some states have State operated OSHA programs with exposure standards that may be more stringent than the Federal OSHA PELs reported. You should consult the individual OSHA PELs for your state to determine if there are different exposure levels enforced for the substances present in finished concrete masonry products.

SECTION 4 – FIRST AID MEASURES

**Eye Contact:** Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions and burns.

**Skin Contact:** Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, irritation, dermatitis.

**Inhalation:** Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

**Ingestion:** Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

**Note to Physician:**

The three types of silicosis include:

- Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD).

- Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years). Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis.

- Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels.

Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

SECTION 5 – FIRE FIGHTING MEASURES

**Flash Point (Method Used):** N/A  **Extinguishing Media:** Concrete products do not pose a fire-related hazard.

**Flammable Limits:** N/A  **Special Fire Fighting Procedures:** None

**LEL:** N/A  **UEL:** N/A

SECTION 6 – ACCIDENTAL RELEASE MEASURES

**General:** Place spilled material into a container. Avoid actions that cause the concrete dust to become airborne. Avoid inhalation of concrete dust. Wear appropriate protective equipment as described in Section 8.

**Waste Disposal Method:** Dispose of concrete products according to Federal, State, Provincial and Local regulations.

SECTION 7 – HANDLING AND STORAGE

**Steps to be taken in Case Material is Released or Spilled:** Utilize wet methods to minimize airborne dust concentrations whenever feasible.
When dry sawing or grinding, use dustless systems for handling, storage, and cleaning so that airborne dust does not exceed the PEL. Use adequate ventilation and dust control/suppression equipment. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing which has become dusty. See also control measures in Section VIII.

**Waste Disposal Method:** Normal breakage may be picked up and discarded as common waste. Residue from dry sawing and grinding operations should be disposed of in accordance with Federal, State, and Local regulations.

**Precautions to be Taken in Handling and Storing:** None.

**Other Precautions:** See OSHA Hazard Communication Rule 29 CFR Sections 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, and 1928.21, and state and local worker or community “right to know” laws and regulations. We recommend that smoking be prohibited in all areas where respirators must be used. WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS – USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARD AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT THE OSHA PRECAUTIONS. See also American Society for Testing and Materials (ASTM) Standard Practice E1132-86, “Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust.”

### SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Respiratory Protection**

Utilize suitable NIOSH approved respiratory protection devices whenever finished concrete or masonry products are used in a manner that produces dusts in excess of applicable exposure standards. Respirators should be selected based upon the exposure level encountered using industrial hygiene data and accepted respiratory protection practices. Since it is the respirable fraction of primary medical concern for dusts containing crystalline silica, it is advisable to utilize respiratory protection devices with High Efficiency Particulate Arresting capabilities (HEPA filtered). Consult a trained safety and health professional for assistance with proper selection of respiratory protection devices based upon your exposure situation.

All use of respiratory protection devices should be done consistent with requirements in the OSHA Respiratory Protection standard, 1910.134.

The NIOSH Respirator Topics page [www.cdc.gov/niosh/npptl/topics/respirators/](http://www.cdc.gov/niosh/npptl/topics/respirators/) should be consulted for additional information on respiratory protection.

**Ventilation:**

**Local Exhaust:** When finishing tasks produce concrete dusts in excess of applicable exposure standards, use sufficient local exhaust to reduce the level of respirable dust below the applicable exposure standard. See ACGIH “Industrial Ventilation, A Manual of Recommended Practice,” latest edition.

**Mechanical:** Use wet methods whenever feasible to prevent generation of airborne dusts when finishing concrete or masonry products.

**Special:** See “Other Precautions” under Section VII.

**Other:** See “Other Precautions” under Section VII.

**Protective Gloves:** Wear suitable protective gloves to prevent mechanical abrasion of the skin when handling finished concrete masonry products.

**Eye Protection:** When sawing or grinding concrete masonry products, wear protective shield or tight fitting goggles (safety glasses).

**Other Protective Clothing or Equipment:** Optional

**Work/Hygienic Practices:** Utilize wet methods for cutting, sanding or cleaning tasks that produce airborne dust whenever feasible. Avoid creating and breathing dust. Minimize skin contact using food hygiene and protective equipment practices. See “Other Precautions” under Section VII.

### SECTION 9– PHYSICAL AND CHEMICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>N/A</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Not Soluble</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Oderless Solid</td>
</tr>
<tr>
<td>Specific Gravity (H20=1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(Butyl Acetate = 1) N/A
SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable.
Incompatibility: None known.
Hazardous Polymerization: None.
Hazardous Decomposition: None.

SECTION 11 and 12: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of waste and containers in compliance with applicable Federal, State, Provincial and Local regulations.

SECTION 14: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

SECTION 15: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication: This product is considered by OSHA/MSHA to be a hazardous chemical and should be included in the employer's hazard communication program.

CERCLA/SUPERFUND: This product is not listed as a CERCLA hazardous substance.

EPCRA SARA Title III: This product has been reviewed according to the EPA HazardCategories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered a hazardous chemical and a delayed health hazard.


RCRA: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA: Concrete and crystalline silica are exempt from reporting under the inventory update rule.

California Proposition 65: Crystalline silica (airborne particulates of respirable size) is a substance known by the State of California to cause cancer.

WHMIS/DSL: Products containing crystalline silica is classified as D2A, E and is subject to WHMIS requirements.

SECTION 16: OTHER INFORMATION

Abbreviations:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;</td>
<td>Greater than</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>CAS No</td>
<td>Chemical Abstract Service number</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation and Liability Act</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>CFR</td>
<td>Code for Federal Regulations</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>CL</td>
<td>Ceiling Limit</td>
</tr>
<tr>
<td>pH</td>
<td>Negative log of hydrogen ion</td>
</tr>
<tr>
<td>DOT</td>
<td>U.S. Department of Transportation</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>EST</td>
<td>Eastern Standard Time</td>
</tr>
<tr>
<td>R</td>
<td>Respirable Particulate</td>
</tr>
<tr>
<td>HEPA</td>
<td>High-Efficiency Particulate Air</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Materials Identification System</td>
</tr>
<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>T</td>
<td>Total Particulate</td>
</tr>
<tr>
<td>TDG</td>
<td>Transportation of Dangerous Goods</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose</td>
</tr>
<tr>
<td>TWA</td>
<td>Time Weighted Average (8 hour)</td>
</tr>
<tr>
<td>mg/m³</td>
<td>Milligrams per cubic meter</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>MSHA</td>
<td>Mine Safety and Health Administration</td>
</tr>
</tbody>
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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful health effects, which may be caused by exposure to airborne dust particles created by dry sawing or grinding of our products. Customers/users of concrete masonry products must comply with all applicable health and safety laws, regulations, and orders.