HAZARD RATING
4=EXTREME
3=HIGH
2=Moderate
1=SLIGHT
0=INSIGNIFICANT

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>2</th>
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<tr>
<td>FLAMMABILITY</td>
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</tr>
<tr>
<td>REACTIVITY</td>
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</table>

SECTION I - GENERAL INFORMATION

PRODUCT IDENTIFICATION:
CERTI-VEX GROUT 1100

VOC CONTENT: 0GR/LITER OR 0#/GAL
CATEGORY: NON REGULATED
COMMON NAME: CEMENTITIOUS GRouting MATERIAL
MANUFACTURER: VEXCON CHEMICALS, INC
ADDRESS: 7240 STATE RD, PHILADELPHIA, PA 19135
EMERGENCY NO: 800.858.2528 (PolySat Inc)
TELEPHONE NO: 215.332.7709 (Vexcon)
CHEMTREC NO: 800.424.9300 (CCN# 23822)
PREPARED: SEPTEMBER 2011
UPDATED: SEPTEMBER 2014
PREPARED BY: DARRY F. MANUEL, PRESIDENT

SECTION II – HAZARD IDENTIFICATION

HEALTH AND SAFETY: THIS PRODUCT IS A GRAY POWDERED SOLID. CONTINUED INHALATION OF DUST OVER A PERIOD OF YEARS WITHOUT PROPER RESPIRATOR AND VENTILATION CONTROLS WILL CAUSE SILICOSIS AND LUNG CANCER. USE WITH SAFETY GOGGLES, NEOPRENE GLOVES, AND PROTECTIVE CLOTHING RECOMMENDED.

SECTION III HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>MATERIAL OR COMPONENTS</th>
<th>CAS NO.</th>
<th>%</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
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<tbody>
<tr>
<td>PORTLAND CEMENT</td>
<td>65997-15-1</td>
<td>40-60%</td>
<td>15 mg/m3 total 5 mg/m3 respir.</td>
<td>10 mg/m3</td>
</tr>
<tr>
<td>SILICA SAND*</td>
<td>14808-60-7</td>
<td>40-60%</td>
<td>Total dust: 30mg/m3/(%SiO2 + 2) Respirable: 10 mg/m3/(%SiO2 + 2)</td>
<td>0.05 mg/m3 resp.</td>
</tr>
</tbody>
</table>

*CONTINUED INHALATION OF SILICA DUST OVER A PERIOD OF YEARS WITHOUT PROPER RESPIRATOR AND VENTILATION CONTROLS WILL CAUSE SILICOSIS AND LUNG CANCER. CURRENT OSHA STANDARDS FOR CRYSTALLINE SILICA SiO2 ARE: (RESPIRABLE DUST) 10mg SILICA PER CUBIC METER OF AIR DIVIDED BY THE PERCENT SiO2 AVERAGED OVER AN EIGHT HOUR WORK SHIFT (TOTAL DUST) 30mg/m3 DIVIDED BY THE PERCENT SiO2 AVERAGED OVER AN EIGHT HOUR WORK SHIFT.

SECTION IV FIRST AID MEASURES

HEALTH HAZARD DATA HAZARD CLASSIFICATION
BASIS FOR CLASSIFICATION SOURCE

ROUTES OF EXPOSURE:

INHALATION: DUST CAN CAUSE INFLAMMATION OF NOSE TISSUE LINING AND CORNEA. HYPERSENSITIVITY MAY CAUSE ALLERGIC DERMATITIS. CONTINUED INHALATION OF DUST OVER A PERIOD OF YEARS WITHOUT PROPER RESPIRATOR AND VENTILATION CONTROLS WILL CAUSE SILICOSIS AND LUNG CANCER.

SKIN CONTACT: THIS PRODUCT IS ALKALINE AND CAN IRRITATE THE SKIN.

SKIN ABSORPTION: THIS PRODUCT MAY CAUSE SKIN IRRITATION UPON PROLONGED OR REPEATED CONTACT. PRODUCT IS ALKALINE AND CAN IRRITATE THE SKIN.

EYE CONTACT: THIS PRODUCT MAY BE AN EYE IRRITANT.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. SEEK IMMEDIATE MEDICAL ATTENTION.

SKIN: WASH WITH SOAP AND LARGE QUANTITIES OF WATER. SEEK MEDICAL ATTENTION IF SKIN IRRITATION DEVELOPS AND PERSISTS.

INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF BREATHING STOPS, BEGIN ARTIFICIAL RESPIRATION AND SEEK IMMEDIATE MEDICAL ATTENTION.

INGESTION: IMMEDIATELY SEEK MEDICAL ADVICE. GIVE MILK OR EGG WHITE BEATEN WITH WATER UNTIL VOMIT FLUID IS CLEAR. IF VOMITING DOES NOT OCCUR, INDUCE VOMITING BY GAGGING THE VICTIM. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

SECTION V FIREFIGHTING MEASURES

EXTINGUISHING MEDIA: EXCLUDE AIR. FIRES INVOLVING THIS PRODUCT MAY BE CONTROLLED BY REGULAR FOAM, CARBON DIOXIDE, DRY CHEMICALS OR WATER SPRAY. WATER MAY BE USED TO REDUCE THE RATE OF BURNING AND FOR COOLING PURPOSES.

UNUSUAL FIRE AND EXPLOSION HAZARD: NONE. NON-COMBUSTIBLE, NON-EXPLOSIVE
SECTION VI ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: DUSTLESS VACUUM OR SWEEP UP -- AVOID CREATING EXCESSIVE DUST. WEAR APPROVED MSHA/NIOSH RESPIRATORS. DO NOT WASH DOWN DRAINS.

SECTION VII HANDLING AND STORAGE

PRECAUTIONARY STATEMENTS: PERSONNEL SHOULD AVOID INHALATION OF VAPORS/DUST. PERSONAL CONTACT WITH THE PRODUCT SHOULD BE AVOIDED. SHOULD CONTACT BE MADE, REMOVE SATURATED APPAREL AND FLUSH AFFECTED BODY AREAS WITH WATER. CLOTHING MUST BE WASHED AND DRIED BEFORE REUSE. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED SINCE EMPTY CONTAINERS RETAIN PRODUCT RESIDUE (VAPOR, LIQUID AND/OR SOLID). ALL HAZARD PRECAUTIONS GIVEN IN THIS DATA SHEET MUST BE OBSERVED.

FIRE FIGHTING: WATER MAY BE UNSUITABLE AS AN EXTINGUISHING MEDIUM BUT HELPFUL IN KEEPING ADJACENT CONTAINERS COOL. AVOID SPREADING BURNING LIQUID WITH WATER USED FOR COOLING PURPOSES. PERSONNEL SHOULD AVOID INHALATION OF VAPORS.

OTHER HANDLING AND STORAGE REQUIREMENTS: STORE IN AIR TIGHT CONTAINERS OR POLY LINED BAGS IN A COOL DRY AREA. USE IN WELL VENTILATED AREA, EQUIVALENT TO FRESH AIR. KEEP CONTAINER TIGHTLY CLOSED. DO NOT STORE WITH INCOMPATIBLE MATERIALS. STORE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. DO NOT STORE OR CONSUME FOOD, DRINK, OR TOBACCO IN AREAS WHERE THEY MAY BECOME CONTAMINATED WITH THIS MATERIAL.

SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENTS: CRYSTALLINE SILICA MUST BE WITHIN CURRENT OSHA STANDARDS (RESPIRABLE DUST): 10mg SILICA PER CUBIC METER OF AIR DIVIDED BY THE PERCENT SiO2 AVERAGED OVER AN EIGHT HOUR WORK SHIFT (TOTAL DUST) 30 mg/m3 DIVIDED BY THE PERCENT SiO2 AVERAGED OVER AN EIGHT HOUR WORK SHIFT.

RESPIRATORY (SPECIFY IN DETAIL): MSHA/NIOSH APPROVED RESPIRATOR SUCH AS 3M™ 9900 Series Respirators OR EQUIVALENT.

EYES: CHEMICAL GOGGLES AND/OR FACE SHIELD ARE RECOMMENDED TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY.

GLOVES: THE USE OF IMPERMEABLE GLOVES IS ADVISED TO PREVENT SKIN IRRITATION IN SENSITIVE INDIVIDUALS. IMPERVIOUS GLOVES (CHEMICAL RESISTANT) SUCH AS NEOPRENE, LATEX OR PVA.

OTHER CLOTHING AND EQUIPMENT: TO PREVENT BODY CONTACT, IMPERVIOUS CLOTHING AND BOOTS ARE RECOMMENDED. THE AVAILABILITY OF EYE WASHES AND SAFETY SHOWERS IN WORK AREAS IS RECOMMENDED.

SECTION IX PHYSICAL / CHEMICAL CHARACTERISTICS

BOILING POINT: (760mmHg) NOT APPLICABLE

MELTING/FREEZING POINT: NOT APPLICABLE

VAPOR PRESSURE: NOT APPLICABLE

VAPOR DENSITY (AIR=1): NOT APPLICABLE

SOLUBILITY IN H2O % BY WT: % VOLATILES BY VOL: NOT APPLICABLE

SLIGHTLY SOLUBLE 0.1 TO 1% NOT APPLICABLE

EVAPORATION RATE (BuAc=1): SPECIFIC GRAVITY (H2O=1) 2.65

NOT APPLICABLE

pH (AS IS): 12

pH WHEN MIXED: TYPICAL

APPEARANCE AND ODOR: POWDERED GRAY SOLID WITH NO DISTINCT ODOR

FLASH POINT: (TEST METHOD) NONE (NON-COMBUSTIBLE)

AUTOIGNITION TEMPERATURE: NONE (NON-COMBUSTIBLE)

FLAMMABLE LIMITS IN AIR, % BY VOL: NONE (NON-COMBUSTIBLE)

SECTION X STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY:

WATER

CONDITIONS CONTRIBUTING TO UNSTABILITY:

WET CEMENTITIOUS MATERIAL IS ALKALINE. THIS PRODUCT IS INCOMPATIBLE WITH ACIDS, AMMONIUM SALTS, AND ALUMINUM METAL

Hazardous Decomposition Products:

WILL NOT SPONTANEOUSLY OCCUR. ADDING WATER RESULTS IN HYDRATION AND PRODUCES CALCIUM HYDROXIDE, WHICH IS ALKALINE. THERMAL DECOMPOSITION IN THE PRESENCE OF AIR MAY YIELD CARBON MONOXIDE AND/OR CARBON DIOXIDE, AND UNIDENTIFIED ORGANICS.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

N/A WILL NOT OCCUR

SECTION XI TOXICOLOGICAL INFORMATION

EYES: IRITATING TO EYES. MAY CAUSE BURNS IN THE PRESENCE OF MOISTURE. SKIN CONTACT DURING HYDRATING MAY SLOWLY DEVELOP SUFFICIENT HEAT THAT MAY CAUSE SEVERE BURNS POSSIBLY RESULTING IN PERMANENT INJURY. DO NOT ALLOW PRODUCT TO HARDEN AROUND ANY BODY PART OR ALLOWS CONTINUOUS, PROLONGED CONTACT WITH SKIN. HANDLING CAN CAUSE DRY SKIN.

SKIN: MAY CAUSE SKIN IRRITATION. MAY CAUSE BURNS IN THE PRESENCE OF MOISTURE. SKIN CONTACT DURING HYDRATING MAY SLOWLY DEVELOP SUFFICIENT HEAT THAT MAY CAUSE SEVERE BURNS POSSIBLY RESULTING IN PERMANENT INJURY. DO NOT ALLOW PRODUCT TO HARDEN AROUND ANY BODY PART OR ALLOWS CONTINUOUS, PROLONGED CONTACT WITH SKIN. HANDLING CAN CAUSE DRY SKIN.

INGESTION: MAY BE HARMFUL IF SWALLOWED. MAY CAUSE STOMACH DISTRESS, NAUSEA OR VOMITING.

INHALATION: EXPOSURE TO AIRBORNE CONCENTRATIONS ABOVE STATUTORY OR RECOMMENDED EXPOSURE LIMITS MAY CAUSE IRRITATION OF THE NOSE, THROAT AND LUNGS. MAY CAUSE MECHANICAL IRRITATION (ABRASION).

TARGET ORGANS: LUNGS

HAZARDOUS BY OSHA CRITERIA: RESPIRABLE CRYSTALLINE SILICA IN THE FORM OF QUARTZ OR CRISTOBALITE IS A HUMAN CARCINOGEN. SOURCES IS LISTED BY THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC) AND NATIONAL TOXICOLOGY PROGRAM (NTP) AS A LUNG CARCINOGEN. PROLONGED EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA HAS BEEN KNOWN TO CAUSE SILICOSIS, A LUNG DISEASE, WHICH MAY BE DISABLING. WHILE THERE MAY BE A FACTOR OR INDIVIDUAL SUSCEPTIBILITY TO A GIVEN EXPOSURE TO RESPIRABLE SILICA DUST, THE RISK OF CONTRACTING SILICOSIS AND THE SEVERITY OF THE DISEASE IS CLEARLY RELATED TO THE AMOUNT OF DUST EXPOSURE AND THE LENGTH OF TIME THE EXPOSURE OCCURS.
### Silicosis

The major concern is silicosis, caused by the inhalation and retention of respirable crystalline silica dust. Silicosis can exist in several forms: chronic (or ordinary), accelerated, or acute. Chronic or ordinary silicosis (often referred to as simple silicosis) is the most common form of silicosis, and can occur after many years of exposure to relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter, although there may be no symptoms associated with complicated silicosis or PMF. The symptoms, if present, are shortness of breath, wheezing, cough, and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).

Accelerated silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period. The lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that lung lesions appear earlier and progression is more rapid. Acute silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, and weight loss. Acute silicosis is fatal.

### Cancer

IARC – the International Agency for Research on Cancer (“IARC”) concluded that there was “sufficient evidence in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources”, and that there is “sufficient evidence in experimental animals for the carcinogenicity of quartz and cristobalite.” The overall IARC evaluation was that “crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).” The IARC evaluation noted that “carcinogenicity was not detected in all industrial circumstances studies. Carcinogenicity may be dependent on the inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.”

NTP – The National Toxicology Program, in its Ninth Annual Report on Carcinogens, classified “silica, crystalline (respirable)” as a known human carcinogen.

OSHA – Crystalline silica (quartz) is not regulated by the U.S. Occupational Safety and Health Administration as a carcinogen.

### Autoimmune Disease

Several studies have reported excess cases of several autoimmune disorders – scleroderma, systemic lupus, erythematous, rheumatoid arthritis – among silica-exposed workers.

### Tuberculosis

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis.

### Kidney Disease

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers.

### Non-Malignant Respiratory Diseases

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema.
AND SMALL AIRWAYS DISEASE. THERE ARE STUDIES THAT DISCLOSE AN ASSOCIATION BETWEEN DUSTS FOUND IN VARIOUS MINING OCCUPATIONS AND NON-MALIGNANT RESPIRATORY DISEASES, PARTICULARLY AMONG SMOKERS. IT IS UNCLEAR WHETHER THE OBSERVED ASSOCIATIONS EXIST ONLY WITH UNDERLYING SILICOSIS, ONLY AMONG SMOKERS, OR RESULT FROM EXPOSURE TO MINERAL DUSTS GENERALLY (INDEPENDENT OF THE PRESENCE OR ABSENCE OF CRYSSTALLINE SILICA, OR THE LEVEL OF CRYSSTALLINE SILICA IN THE DUST).

SECTION XII ECOLOGICAL INFORMATION

ECOTOXICITY

AQUATIC TOXICITY

NA

PERSISTANCE/DEGRADABILITY

NA

BIODISTRIBUTION/ACCUMULATION

NA

ENVIRONMENTAL FATE

NA

SECTION XIII DISPOSAL CONSIDERATIONS

AQUATIC TOXICITY

(E.G. 96 HR. TLM): DO NOT DISCHARGE THIS PRODUCT INTO PUBLIC WATERS OR WATERWAYS UNLESS AUTHORIZED BY A NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (ISSUED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA)).

WASTE DISPOSAL METHOD


SECTION XIV TRANSPORTATION INFORMATION

<table>
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<tr>
<th>Governing Body</th>
<th>Mode</th>
<th>UN Number</th>
<th>Proper Shipping Name</th>
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<tr>
<td>DOT</td>
<td>GROUND</td>
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<td>NON REGULATE D</td>
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<tr>
<td>IATA</td>
<td>AIR</td>
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<td>NON REGULATE D</td>
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<tr>
<td>IMDG</td>
<td>OCEAN</td>
<td>NON-REGULATED</td>
<td>NON REGULATE D</td>
<td>NON REGULATE D</td>
<td>NA</td>
</tr>
<tr>
<td>MARINE POLLUTANT</td>
<td></td>
<td>THIS PRODUCT DOES NOT CONTAIN A MATERIAL ON THE MARINE POLLUTANTS TABLE (HMT 172.101 APPENDIX B)</td>
<td></td>
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</tbody>
</table>

SECTION XV REGULATORY INFORMATION

TSCA: THE SOLVENT PORTION OF THIS PRODUCT IS LISTED ON THE TSCA INVENTORY AS A UVCB (UNKNOWN, VARIABLE COMPOSITION OR BIOLOGICAL) CHEMICAL AT CAS REGISTRY NUMBER.

CERCLA: IF THE REPORTABLE QUANTITY OF THIS PRODUCT IS ACCIDENTALLY SPILLED, THE INCIDENT IS SUBJECT TO THE PROVISIONS OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA) AND MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER BY CALLING 1-800-424-8802 OR 202-426-2675. NO REPORTABLE SPILL QUANTITY (RQ) HAS BEEN ESTABLISHED FOR THIS PRODUCT (STODDARD SOLVENT, AROMATIC SOLVENT NAPHTHA).

SARA TITLE III: UNDER THE PROVISIONS OF TITLE III, SECTIONS 311/312 OF THE SUPERFUND AMENDMENTS AND RE-AUTHORIZATION ACT, THIS PRODUCT IS CLASSIFIED INTO THE FOLLOWING HAZARD CATEGORIES: DELAYED HEALTH, FIRE

ADDITIONAL REGULATORY CONCERNS: (FEDERAL, FDA, USDA, CPSC, STATE, OTHER)

MARINE POLLUTANTS: THIS PRODUCT DOES NOT CONTAIN A MATERIAL ON THE MARINE POLLUTANTS TABLE (HMT 172.101 Appendix B).

SECTION XVI OTHER INFORMATION

PREPARED BY DARRYL MANUEL / PRESIDENT
COMPANY: VEXCON CHEMICALS, INC.
ADDRESS: 7240 STATE RD., PHILA., PA 19135 USA

THE INFORMATION PROVIDED IN THIS MATERIAL SAFETY DATA SHEET HAS BEEN OBTAINED FROM SOURCES BELIEVED TO BE RELIABLE. VEXCON PROVIDES NO WARRANTIES, EXPRESSED OR IMPLIED, AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREIN.

HMIS HAZARD RATINGS:

THIS INFORMATION IS FOR PEOPLE TRAINED IN:
NATIONAL PAINT AND COATINGS ASSOCIATIONS (NPCA)
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 704)
IDENTIFICATION OF FIRE HAZARDS OF MATERIALS

VECON CERTI-VEX GROUT 1100

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<th>NPCHA-HMIS</th>
<th>NFPA 704</th>
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