

## MATERIAL SAFETY DATA SHEET

### SECTION I - IDENTITY INFORMATION

PRODUCT NAME: **BASE PLATE GROUT COMPONENT C**  
FAMILY/CHEMICAL NAME: CRYSTALLINE SILICA (QUARTZ)  
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### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS: SILICA, CRYSTALLINE QUARTZ (RESPIRABLE)

SPECIFIC CHEMICAL IDENTITY: SILICON DIOXIDE SiO<sub>2</sub> CAS. NO. 14808-60-7  
COMMON NAMES: SILICA, FLINT, SAND, CRYSTALLINE SILICA,  
CRYSTALLINE FREE SILICA, QUARTZ, GROUND  
SILICA, COESITE, CRISTOBALITE, TRIDYMITTE.

OSHA PEL: EXPOSURE TO AIRBORNE CRYSTALLINE SILICA  
SHALL NOT EXCEED AN 8-HOUR TIME-WEIGHTED  
AVERAGE. LIMIT AS STATED IN 29 CFR 1910.1000  
TABLE Z-3 FOR MINERAL DUSTS, SPECIFICALLY  
"SILICA; CRYSTALLINE; QUARTZ (RESPIRABLE)".

CRYSTALLINE QUARTZ (RESPIRABLE) 0.1 MG/M<sup>4</sup>  
QUARTZ (TOTAL DUST)

ACGIH TLV CRYSTALLINE QUARTZ  
TLV-TWA=0.1MG/M<sup>4</sup> (RESPIRABLE DUST) SEE  
THRESHOLD LIMIT VALUE AND BIOLOGICAL  
EXPOSURE INDICES FOR 1987-1988 AMERICAN  
CONFERENCE OF GOVERNMENTAL INDUSTRIAL  
HYGIENISTS.

OTHER LIMITS RECOMMENDED: NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY  
AND HEALTH (NIOSH), RECOMMENDED STANDARD  
MAXIMUM PERMISSIBLE CONCENTRATION = 0.05  
MG/M<sup>4</sup> (RESPIRABLE FREE SILICA) AS DETERMINED  
BY A FULL-SHIFT SAMPLE UP TO 10-HOUR WORKING  
DAY 40-HOUR WORK WEEK. SEE NIOSH CRITERIA  
FOR A RECOMMENDED STANDARD OCCUPATIONAL  
EXPOSURE TO CRYSTALLINE SILICA.

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### SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 4046°F  
VAPOR PRESSURE (mm Hg.): NONE  
VAPOR DENSITY (AIR=1): NONE  
SOLUBILITY IN WATER: INSOLUBLE IN WATER  
SPECIFIC GRAVITY (H<sub>3</sub>O=1): 2.65  
MELTING POINT: 3050°F  
EVAPORATION RATE: (BUTYL ACETATE = 1) NONE  
VENTILATION:  
LOCAL EXHAUST: USE SUFFICIENT LOCAL EXHAUST TO REDUCE THE LEVEL OF RESPIRABLE CRYSTALLINE SILICA TO THE PEL. SEE ACGIH "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICE". THE LATEST EDITION.  
MECHANICAL: SEE "OTHER PRECAUTIONS" UNDER SEC. IV  
SPECIAL: SEE "OTHER PRECAUTIONS" UNDER SEC. IV  
OTHER: SEE "OTHER PRECAUTIONS" UNDER SEC. IV  
PROTECTIVE GLOVES: OPTIONAL  
EYE PROTECTION: WEAR PROTECTIVE SHIELD (SAFETY GLASSES) WHEN EXPOSED TO DUST PARTICLES.

OTHER PROTECTIVE CLOTHING AND EQUIPMENT: OPTIONAL

WORK/HYGIENIC PRACTICES: AVOID CREATING AND BREATHING DUST.  
SEE "OTHER PRECAUTIONS" UNDER SECTION IV.

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN. WE ACCEPT NO RESPONSIBILITY AND DISCLAIM ALL LIABILITY FOR ANY HARMFUL EFFECTS WHICH MAY BE CAUSED BY EXPOSURE TO OUR SILICA. CUSTOMERS - USERS OF SILICA MUST COMPLY WITH ALL APPLICABLE HEALTH AND SAFETY LAWS, REGULATIONS, AND ORDERS.

### SECTION IV - PRECAUTIONS FOR SAFE HANDLING AND USE

SPILLS: USE DUSTLESS METHODS (VACUUM) AND PLACE INTO CLOSABLE CONTAINER FOR DISPOSAL, OR FLUSH WITH WATER. DO NOT DRY-SWEEP. WEAR PROTECTIVE EQUIPMENT SPECIFIED BELOW.

WASTE DISPOSAL METHOD: DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

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PRECAUTIONS TO BE TAKEN  
IN HANDLING AND STORING: AVOID BREAKAGE OF BAGGED MATERIAL OR

SPILLS OF BULK MATERIALS. SEE CONTROL MEASURES IN SECTION V.

OTHER PRECAUTIONS:

USE DUSTLESS SYSTEMS FOR HANDLING, STORAGE, AND CLEAN UP SO THAT AIRBORNE DUST DOES NOT EXCEED THE PEL. USE ADEQUATE VENTILATION AND DUST COLLECTION. 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 SEC. V.

SEE OSHA HAZARD COMMUNICATION RULE 29 CFR SECTIONS 1910, 1200, 1915.99, 1917.28, 1918.90, 1926.59, AND 1918.21, 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 E 1132-86, "STANDARD PRACTICE FOR HEALTH REQUIREMENTS RELATING TO OCCUPATIONAL EXPOSURE TO QUARTZ DUST".

**SECTION V - CONTROL MEASURES**

**RESPIRATORY PROTECTION (SPECIFY TYPE)**

THE FOLLOWING CHART SPECIFIES THE TYPES OF RESPIRATORS WHICH MAY PROVIDE RESPIRATORY PROTECTION FOR CRYSTALLINE SILICA.

**RESPIRATORY PROTECTION FOR CRYSTALLINE SILICA**

<u>CONDITION</u>	<u>MINIMUM RESPIRATORY PROTECTION</u>
PARTICLE CONCENTRATION 5 X PEL OR LESS	ANY DUST RESPIRATOR

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<u>CONDITION</u>	<u>MINIMUM RESPIRATORY PROTECTION</u>
10 X PEL OR LESS	ANY DUST RESPIRATOR, EXCEPT SINGLE-USE OR QUARTER-MASK RESPIRATOR OR HIGH

EFFICIENCY PARTICULATE FILTER RESPIRATOR.  
ANY SUPPLIED-AIR RESPIRATOR. ANY SELF-  
CONTAINED BREATHING APPARATUS.

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50 X PEL OR LESS

A HIGH EFFICIENCY PARTICULATE FILTER  
RESPIRATOR WITH A FULL FACEPIECE. ANY  
SUPPLIED-AIR RESPIRATOR WITH A FULL  
FACEPIECE, HELMET, OR HOOD. ANY SELF-  
CONTAINED BREATHING APPARATUS WITH A FULL  
FACEPIECE.

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500 X PEL OR LESS

A POWERED AIR-PURIFYING RESPIRATOR WITH A  
HIGH EFFICIENCY PARTICULATE FILTER. A TYPE C  
SUPPLIED-AIR RESPIRATOR OPERATED IN  
PRESSURE-DEMAND OR OTHER POSITIVE  
PRESSURE OR CONTINUOUS-FLOW MODE.

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GREATER THAN 500 X PEL OR

SELF-CONTAINED BREATHING APPARATUS WITH A  
FULL FACEPIECE OPERATED IN PRESSURE  
DEMAND OR OTHER POSITIVE PRESSURE OR  
CONTINUOUS-FLOW MODE. A COMBINATION  
RESPIRATOR WHICH INCLUDES A TYPE C  
SUPPLIED-AIR RESPIRATOR WITH A FULL  
FACEPIECE OPERATED IN PRESSURE-DEMAND OR  
OTHER POSITIVE PRESSURE CONTINUOUS FLOW  
MODE AND A AUXILIARY SELF-CONTAINED  
BREATHING APPARATUS OPERATED IN  
PRESSURE-DEMAND OR OTHER POSITIVE  
PRESSURE MODE.

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ABRASIVE BLASTING

ANY TYPE CE, SUPPLIED-AIR RESPIRATOR WITH A  
FULL FACEPIECE, HOOD, OR HELMET, OPERATED  
IN A POSITIVE PRESSURE MODE.  
(SEE 29 CFR 1910, 94[A])

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\*ONLY NIOSH-APPROVED OR MSHA-APPROVED EQUIPMENT SHOULD BE USED.  
(SEE 29 CFR 1910-134)

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SEE ALSO ANSI STANDARD Z88.2-1980 "PRACTICES FOR RESPIRATORY PROTECTION", AND  
STANDARD Z9.4-1984 "VENTILATION AND SAFE PRACTICES OF ABRASIVE BLASTING  
OPERATIONS".

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### SECTION VI - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED):  
FLAMMABLE LIMITS:  
LEL/UJEL:

NON-FLAMMABLE  
NONE  
NONE

EXTINGUISHING MEDIA: NONE REQUIRED; SAND MAY BE USED AS EXTINGUISHING MEDIA.  
SPECIAL FIRE FIGHTING PROCEDURES: N/A  
UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE: SILICA SAND MAY BE USED TO EXTINGUISH CERTAIN CLASSES OF FIRES.

#### SECTION VII - REACTIVITY DATA

STABILITY: UNSTABLE: STABLE: X CONDITIONS TO AVOID: NONE

INCOMPATIBILITY (MATERIALS TO AVOID): CONTACT WITH POWERFUL OXIDIZING AGENTS SUCH AS FLUORINE, CHLORINE TRIFLUORIDE, MANGANESE TRIOXIDE, OXYGEN DIFLUORIDE, MAY CAUSE FIRES.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS: SILICA WILL DISSOLVE IN HYDROFLUORIC ACID AND PRODUCE A CORROSIVE GAS - SILICON TETRAFLUORIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR  
CONDITION TO AVOID: NONE

#### SECTION VIII - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY: INHALATION - YES  
SKIN - NO  
INGESTION - NO

HEALTH HAZARDS (ACUTE AND CHRONIC):  
PROLONGED EXPOSURE TO RESPIRABLE CRYSTALLINE QUARTZ MAY CAUSE DELAYED (CHRONIC) LUNG INJURY (SILICOSIS). ACUTE OR RAPIDLY DEVELOPING SILICOSIS MAY OCCUR IN A SHORT PERIOD OF TIME IN HEAVY EXPOSURE IN CERTAIN OCCUPATIONS SUCH AS SANDBLASTERS. SILICOSIS IS A FORM OF DISABLING PULMONARY FIBROSIS WHICH CAN BE PROGRESSIVE AND MAY LEAD TO DEATH.

CARCINOGENICITY: NTO - NO  
IARC MONOGRAPHS - YES  
OSHA REGULATED - NOT AS A CARCINOGEN

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IARC MONOGRAPHS ON THE EVALUATION OF THE CARCINOGENIC RISK OF CHEMICALS TO HUMANS (VOLUME 42, 1987) CONCLUDES THAT THERE IS SUFFICIENT EVIDENCE FOR THE CARCINOGENICITY OF CRYSTALLINE SILICA TO EXPERIMENTAL ANIMALS, AND THAT THERE IS LIMITED EVIDENCE OF THE CARCINOGENICITY OF CRYSTALLINE SILICA TO HUMANS. IARC CLASS 2A.

SIGNS AND SYMPTOMS OF EXPOSURE: UNDUE BREATHLESSNESS, WHEEZING,

COUGH, AND SPUTUM PRODUCTION.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

PULMONARY FUNCTION MAY BE REDUCED BY INHALATION OF RESPIRABLE CRYSTALLINE SILICA. ALSO LUNG SCARRING PRODUCED BY SUCH INHALATION MAY LEAD TO A PROGRESSIVE MASSIVE FIBROSIS OF THE LUNG (SILICOSIS WHICH MAY AGGRAVATE OTHER PULMONARY CONDITIONS AND DISEASES AND WHICH INCREASES SUSCEPTIBILITY TO PULMONARY TUBERCULOSIS. PROGRESSIVE MASSIVE FIBROSIS MAY BE PULMONARY FAILURE. SMOKING AGGRAVATES THE EFFECT OF EXPOSURE.

EMERGENCY AND FIRST AID PROCEDURES:

FOR SAND IN EYES, WASH IMMEDIATELY WITH WATER. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION. FOR GROSS INHALATION, REMOVE PERSON IMMEDIATELY TO FRESH AIR, GIVE ARTIFICIAL RESPIRATION, AS NEEDED, SEEK MEDICAL ATTENTION AS NEEDED.