MATERIAL SAFETY DATA SHEET

SECTION 1 - MATERIAL IDENTIFICATION AND USE

MATERIAL: CORDIERITE CERAMIC
PRODUCT NAME - IDENTIFIER: INFRARED HEATING TILE

MANUFACTURER NAME: Apogee Engineered Ceramics Inc.
SUPPLIER NAME: Apogee Engineered Ceramics Inc.

STREET ADDRESS: 396 Henry Street
STREET ADDRESS: 396 Henry Street

CITY: Brantford, Ontario
COUNTRY: Canada
CITY: Brantford, Ontario
COUNTRY: Canada

POSTAL CODE: N3S 7W1
PHONE: 519-753-0700
POSTAL CODE: N3S 7W1
PHONE: 519-753-0700

CHEMICAL NAME: Magnesium iron aluminum cyclosilicate
CHEMICAL FAMILY: Clay
CHEMICAL FORMULA: (Mg, Fe)$_2$Al$_4$Si$_5$O$_{18}$·nH$_2$O

MOLECULAR WEIGHT: MATERIAL USE: MANUFACTURING END USE

OXIDE CONTENT:

<table>
<thead>
<tr>
<th>Oxide</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al$_2$O$_3$</td>
<td>28.10%</td>
</tr>
<tr>
<td>SiO$_2$</td>
<td>50.40%</td>
</tr>
<tr>
<td>CaO</td>
<td>0.65%</td>
</tr>
<tr>
<td>MgO</td>
<td>17.6%</td>
</tr>
<tr>
<td>Na$_2$O</td>
<td>0.10%</td>
</tr>
<tr>
<td>Fe$_2$O$_3$</td>
<td>1.31%</td>
</tr>
<tr>
<td>TiO$_2$</td>
<td>0.94%</td>
</tr>
<tr>
<td>K$_2$O</td>
<td>0.20%</td>
</tr>
</tbody>
</table>

SECTION 2 - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>%</th>
<th>UN. NA OR CASE NUMBERS</th>
<th>LD/50 OF MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

NONE
ALL PRODUCTS ARE FIRED TO A MINIMUM OF 1250 °C AND ARE CONSIDERED TO BE CHEMICALLY INERT.
SECTION 3 - PHYSICAL DATA

PHYSICAL STATE:
GAS ( ) LIQUID ( ) SOLID ( X )

ODOUR AND APPEARANCE:
ODOURLESS/YELLOW WHITE

ODOUR THRESHOLD (PPM):
N/A

VAPOUR PRESSURE (mm Hg):
N/A

FREEZING POINT (° C):
N/A

VAPOUR DENSITY (AIR-1):
N/A

EVAPORATION RATE:
N/A

BOILING POINT (° C):
N/A

% VOLATILE (BY VOL.):
N/A

SOLUBILITY IN WATER (20 ° C):
N/A

BULK DENSITY:
1.33 g/cc. TYPICAL

SPECIFIC GRAVITY:
2.55 g/cc

COEFFICIENT WATER OIL DIST:
N/A

SECTION 4 - FIRE AND EXPLOSIVE DATA

FLAMMABILITY
YES ( ) NO ( X ): IF YES, UNDER WHICH CONDITIONS?

MEANS OF EXTINCTION:

SPECIAL PROCEDURE:

FLASH POINT (° C) AND METHOD:
N/A

UPPER EXPLOSION (% BY VOLUME):
N/A

LOWER EXPLOSION LIMIT (% BY VOL.):
N/A

AUTO IGNITION TEMPERATURE (° C):
N/A

TDG FLAMMABILITY CLASSIFICATION:
N/A

HAZARDOUS COMBUSTION PRODUCTS:
N/A

EXPLOSION DATA:
SENSITIVITY TO IMPACT:
N/A

SENSITIVITY TO STATIC DISCHARGE:
N/A

EXPLOSIVE POWER:
N/A

RATE OF BURNING:
N/A

SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY
YES ( X ), NO ( ) IF NO UNDER WHICH CONDITIONS?

COMPATIBILITY WITH OTHER SUBSTANCES
YES ( X ), NO ( ) IF NO, WHICH ONES?

REACTIVITY UNDER WHICH CONDITIONS:
NON-REACTIVE

HAZARDOUS DECOMPOSITION PRODUCTS:
N/A
MATERIAL SAFETY DATA SHEET

SECTION 6 - TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY:

<table>
<thead>
<tr>
<th>SKIN CONTACT ( )</th>
<th>SKIN ABSORPTION ( )</th>
<th>EYE CONTACT ( )</th>
<th>INHALATION ACUTE (X)</th>
<th>INHALATION CHRONIC (X)</th>
<th>INGESTION ( )</th>
</tr>
</thead>
</table>

EFFECTS OF ACUTE EXPOSURE TO MATERIAL:
NO EFFECT OTHER THAN AS NUISANCE DUST (WHEN MACHINING IS REQUIRED).

EFFECTS OF CHRONIC EXPOSURE:
LONG TERM EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA CAN CAUSE SILICOSIS.

LD/50 OF MATERIAL: N/A
LC/50 OF MATERIAL: N/A
EXPOSURE LIMIT OF MATERIAL: 5 mg/m³
IRRITANCY OF MATERIAL: N/A
SENSITIZING CAPABILITY OF MATERIAL: N/A
CARCINOGENICITY OF MATERIAL: N/A
REPRODUCTIVE EFFECTS OF MATERIAL: N/A
SYNERGISTIC MATERIALS: N/A

SECTION 7 - PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:
RESPIRATOR RECOMMENDED WHEN DUST IS CREATED DUE TO MACHINING OF FIRED CERAMICS.
PROTECTIVE EYE WEAR, GLOVES RECOMMENDED IN CASE OF BROKEN FRAGMENTS.

GLOVES (SPECIFY): SEE ABOVE
RESPIRATORY (SPECIFY): WHERE TLV IS EXCEEDED
EYE (SPECIFY): SEE ABOVE
FOOTWEAR (SPECIFY): N/A
CLOTHING (SPECIFY): N/A
OTHER (SPECIFY): N/A

ENGINEERING CONTROLS (SPECIFY E.G. VENTILATION ENCLOSED PROCESS): N/A

LEAK AND SPILL PROCEDURE:
N/A

WASTE DISPOSAL:
N/A

HANDLING PROCEDURES AND EQUIPMENT:
N/A

STORAGE REQUIREMENTS:
N/A

SPECIAL SHIPPING INFORMATION:
N/A
SECTION 8 - FIRST AID MEASURES

NOTE: IN CASE OF EYE INJURY OR SEVERE CUTS FROM SHARP BROKEN CERAMIC FRAGMENTS CONSULT PHYSICIAN IMMEDIATELY.

SOURCES USED:

ADDITIONAL INFORMATION:

SECTION 9 - PREPARATION DATE OF THE MSDS

<table>
<thead>
<tr>
<th>PREPARED BY</th>
<th>PHONE NUMBER:</th>
<th>DATE PREPARED:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Department. Apogee Engineered Ceramics Inc.</td>
<td>519-753-0700</td>
<td>August 25, 2011</td>
</tr>
</tbody>
</table>