

MATERIAL SAFETY DATA SHEET

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| SECTION 1 - PRODUCT IDENTIFICATION AND USE | | | | |
| PRODUCT IDENTIFIER: SPECTRUM LEAD FREE CRYSTALS CR08 REACTIVE BLUE | | | PRODUCT IDENTIFICATION NUMBER CR08 | |
| PRODUCT USE : CERAMIC GLAZE | | | | |
| MANUFACTURER'S NAME SPECTRUM GLAZES INC. | | | SUPPLIER'S NAME SPECTRUM GLAZES INC. | |
| STREET ADDRESS: 273 BOWES RD, UNIT A1 | | | STREET ADDRESS: 273 BOWES RD, UNIT A1 | |
| CITY: CONCORD PROVINCE: ONTARIO | | | CITY: CONCORD PROVINCE: ONTARIO | |
| POSTAL CODE: L4K1H8 EMERGENCY TEL(905)695-8355 | | | POSTAL CODE: L4K1H8 EMERGENCY TEL(905)695-8355 | |
| SECTION 2 - HAZARDOUS INGREDIENTS | | | | |
| EXPOSURE LIMIT - AIR mg/m3-8 hr. TWA | | | | |
| HAZARDOUS INGREDIENTS | % | CAS NUMBER | OSHA PEL | ACGIH TLV |
| *SILICA, QUARTZ (SiO2) | 1-2 | 14808-60-7 | 10 MG/M3 %SiO2+2 | 0.05 |
| Al2O3 | 1-2 | 1344-28-1 | 10.0 TOTAL DUST,5.0 RESP.DUST | 10.0 |
| B2O3 FRIT | 25-30 | 1308-86-2 | 10.0 TOTAL DUST,5.0 RESP.DUST | 10.0 |
| SiO2 AMORPHOUS | 35-40 | 7631-86-9 | 6.0 | 10.0 |
| TiO2 | 10-15 | 13463-67-7 | 10.0 TOTAL DUST,5.0 RESP.DUST | 10.0 |
| ZnO | 0.5-1 | 1314-13-2 | 5.0 FUME, 10.0 DUST | 5.0 FUME,10.0 DUST |
| CoO | 1-2 | 1307-96-6 | 0.05 Co | 0.05 Co |
| * SILICA, CRYSTALLINE QUARTZ, (SiO2) IS CONSIDERED TO BE CARCINOGENIC BY IARC CLASS IIA. | | | | |
| SEE SECTION 8 | | | | |
| SECTION 3 - PHYSICAL DATA | | | | |
| PHYSICAL STATE GRANULAR | ODOUR AND APPEARANCE ODOURLESS SOLID | | | ODOUR THRESHOLD (PPM) N.A. |
| VAPOUR PRESSURE (mm Hg) N.A. | VAPOUR DENSITY (AIR=1) | EVAPORATION RATE N.A. | BOILING POINT(C) N.A. | FREEZING POINT(C) N.A. |
| pH 6.5-7 | SPECIFIC GRAVITY +1 | COEFF. WATER/OIL DIST. N.A. | | |
| SECTION 4 - FIRE AND EXPLOSION DATA | | | | |
| FLAMMABILITY YES__ NO X FLAMES UNDER WHICH CONDITIONS : THIS PRODUCT DOES NOT SUPPORT COMBUSTION | | | | |
| MEANS OF EXTINCTION NO SPECIAL MEANS REQUIRED | | | | |
| FLASHPOINT AND METHOD NONE | UPPER FLAMMABLE LIMIT (% BY VOLUME) N.A. | | LOWER FLAMMABLE LIMIT (% BY VOLUME) N.A. | |
| AUTOIGNITION TEMP.(C) N.A. | HAZARDOUS COMBUSTION PRODUCTS NONE | | | |
| EXPLOSION DATA N.A. | SENSITIVITY IMPACT N.A. | ACTIVITY TO STATIC DISCHARGE N.A. | | |
| SECTION 5 - REACTIVITY DATA | | | | |
| CHEMICAL STABILITY YES X NO__ IF NO, UNDER WHICH CONDITIONS | | | | |
| INCOMPATIBILITY WITH OTHER SUBSTANCES YES__ NO X IF SO WHICH ONES REACTIVITY | | | | |
| REACTIVITY AND UNDER WHAT CONDITIONS: NO REACTIVITY | | | | |
| HAZARDOUS DECOMPOSITION PRODUCT: MATERIAL IS STABLE, NO POLYMERIZATION BUT TOXIC FUMES MAY BE RELEASED WHEN MATERIAL IS MELTED. | | | | |

PRODUCT IDENTIFIER SPECTRUM LEAD FREE CRYSTALS CR08 REACTIVE BLUE

SECTION 6 - TOXICOLOGICAL PROPERTIES

ROUTE OF ENTRY
SKIN CONTACT SKIN ABSORPTION X EYE CONTACT X INHALATION INGESTION X

EFFECTS OF ACUTE EXPOSURE TO PRODUCT: SKIN IRRITATION DUE TO ABRASIVENESS.
EYE EXPOSURE COULD CAUSE IRRITATION BUT NO TOXIC EFFECTS.

EFFECTS OF CHRONIC EXPOSURE TO PRODUCT: METAL FUMES IN THE VAPOURS FROM FIRING CERAMIC CRYSTALS MAY CAUSE LUNG INFLAMMATION AND DAMAGE TO KIDNEY AND NERVOUS SYSTEM.

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| EXPOSURE LIMITS | IRRITANCY OF PRODUCT | SENSITIZATION TO PRODUCT | CARCINOGENICITY |
| TERATOGENCITY | REPRODUCTIVE TOXICITY | MUTAGENICITY | SYNERGISTIC PRODUCTS |

SECTION 7 - PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:

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| GLOVES (SPECIFY) WORK GLOVES | RESPIRATOR (SPECIFY) APPROVED DUST MASK | EYE (SPECIFY) SAFETY GLASSES |
| FOOTWEAR (SPECIFY) | CLOTHING (SPECIFY) | OTHER (SPECIFY) |

ENGINEERING CONTROLS (SPECIFY, EG. VENTILATION, ENCLOSED PROCESS)
VENTILATION SHOULD BE USED WHEN SPRAYING GLAZES.

LEAK AND SPILL PROCEDURE: SCOOP INTO SUITABLE RECEPTACLE. DO NOT WASH DOWN DRAIN.

WASTE DISPOSAL: SEND TO APPROVED SITE IN ACCORDANCE WITH REGULATIONS.

HANDLING PROCEDURES AND EQUIPMENT: NO SPECIAL EQUIPEMENT NEEDED. FOLLOW STANDARD PLANT HYGIENE PROCEDURE.

STORAGE REQUIREMENTS: STORE IN DRY AREAS.

SPECIAL SHIPPING INFORMATION: PROTECT AGAINST PHYSICAL DAMAGE. DOT LABEL NON-REGULATED

SECTION 8

THIS MIXTURE MAY CONTAIN-IN FRIT (TOXIC SUBSTANCES CONTROL ACT INVENTORY, CHEMICAL ABSTRACTS SERVICE NUMBER 65997-18-4) AND/OR OTHER TYPICAL CERAMIC RAW MATERIALS, INCLUDING PIGMENT (S) THAT BELONG TO THE MIXED METAL OXIDES PIGMENTS CLASS, (WHICH ARE THE RESULT OF HIGH TEMPERATURE CALCINATIONS) AND ALTHOUGH THEY CONSIST OF METAL ATOMS AND OXYGEN ATOMS ARRANGED IN UNIQUE CRYSTAL STRUCTURES, THEIR TOXICOLOGICAL PROPERTIES ARE NOT CONSIDERED TO BE THOSE OF EITHER THE METAL OR THE METAL OXIDES-RATHER THEY ARE MAN-MADE MINERALS WHICH CLOSELY DUPLICATE THE PROPERTIES OF THEIR NATURAL COUNTERPARTS, WHICH THEY CLOSELY RESEMBLE, BUT THEY MAY CONTAIN A SMALL AMOUNT OF THE RAW MATERIAL METAL OXIDES PUTTING THEM IN TH OSHA HAZARDOUS CATEGORY- THE FOLLOWING POTENTIALLY HAZARDOUS SUBSTANCES REFERENCED BY FED/OSHA IN CFR 1910.1200:

SECTION 9 - PREPARATION DATE OF MSDS

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| PREPARED BY (GROUP, DEPARTMENT, ETC.) TECHNICAL DEPT. | PHONE NUMBER: (416) 747-8310 | DATE 1 AUGUST 2012 |
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