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Page 1 of 5  
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ZIRCOPAX PLUS  
ENDEKA CERAMICS INC.  
MSDS ID: 51453

MATERIAL SAFETY DATA SHEET

Section I (General Information)

MANUFACTURER'S NAME:

Endeka Ceramics Inc.

EMERGENCY TELEPHONE NUMBER:

Regulatory Information: (904) 751-2828 (Weekdays 8:00am-5:00pm EST)

Emergency Telephone: (904) 607-3011 (24 hrs.)

ADDRESS (NUMBER, STREET, CITY, STATE, ZIP):

11400 New Berlin Road, Jacksonville, FL 32226 (904) 751-2828

CHEMICAL NAME AND SYNONYMS:

Zircopax Plus

TRADE NAME AND SYNONYMS:

Zircon, Zirconium silicate

CHEMICAL FAMILY:

Rare Earth Oxide

FORMULA:

Proprietary

DATE OF PREPARATION:

06/05/2013

PREPARED BY:

Environmental, Health and Safety Department

DISCLAIMER:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgements of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Section II - Hazardous Ingredients

NAME	WT%	CAS#	ACGIH TLV	OSHA PEL
Zirconium Silicate	95-100	14940-68-2	*5 mg/m3	*5 mg/m3
Crystalline Silica	0.1-0.5	14808-60-7	0.1 mg/m3 (a)	5 mg/m3 (a)

\* Exposure limits for Zirconium Silicate have not been established by the ACGIH or OSHA. The exposure limits for Crystalline silica is recommended.

- (a) Respirable Fraction
- (b) Total Dust

Section III - Physical Data

MELTING POINT:

2,100 C (3,812 F) to 2,300 C (4,172 F)

VAPOR PRESSURE (mm Hg):

Not applicable

VAPOR DENSITY (AIR = 1):

Not applicable

SPECIFIC GRAVITY (H2O=1)

4.7 g/cm3

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Section III - Physical Data (Cont.)

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## PERCENT VOLATILE BY VOLUME (%):

Not applicable

## EVAPORATION RATE (BuAc = 1):

Not applicable

## SOLUBILITY IN WATER:

Insoluble

## APPEARANCE AND ODOR:

Free-flowing finely milled white sand particles, no odor

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Section IV - Fire and Explosion Hazard Data

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## FLASH POINT (METHOD USED):

Not applicable

## EXTINGUISHING MEDIA:

This Material will not burn, however water may be used to cool down metal containers.

## SPECIAL FIRE FIGHTING PROCEDURES:

Fire fighters should wear self-contained breathing apparatus. Use water spray to cool metal containers. Use care when approaching advanced or massive fires. Run off from fire control may cause environmental pollution

## UNUSUAL FIRE AND EXPLOSION HAZARDS:

Toxic fumes may be evolved during a fire.

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Section V - Health Hazard Data

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## PRIMARY ROUTES OF EXPOSURE:

Skin: No      Eyes: no      Inhalation: Yes      Ingestion: Yes

## TARGET ORGAN(S) EFFECTS:

Zirconium compounds-Skin, respiratory system

Silica-Respiratory system

## CARCINOGENICITY STATUS:

The following compound(s) are listed as carcinogens by NTP, IARC, OSHA or all:

Crystalline Silica (IARC)

## POTENTIAL HEALTH EFFECTS:

WARNING! DO NOT INHALE DUST!

This product contains small amounts of Crystalline Silica. Crystalline Silica is known to cause cancer and is associated with the chronic lung disease Silicosis. Symptoms of silicosis include chronic cough, dyspnea, wheezing and respiratory tract infections, such as tuberculosis. Individuals with pre-existing respiratory conditions may have increased sensitivity to crystalline silica exposure.

This product contains trace amounts of naturally occurring Uranium, Thorium (90-110pCi/g) and Radium(109-114 pCi/g). This concentration is less than 0.042% w/w. Zircon is exempt from NRC regulations for source material under 10 CFR 40, since it falls under the definition of unprocessed material containing less than 0.05% Uranium, Thorium or Radium.

## EMERGENCY AND FIRST AID PROCEDURES:

ZIRCOPAX PLUS  
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## Section V - Health Hazard Data (Cont.)

**Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes.  
Call a Poison Control Center or Doctor for treatment advice.

**Skin:** Take off contaminated clothing.  
Rinse skin immediately with plenty of water for 15-20 minutes.  
Call a Poison Control Center or Doctor for treatment advice.

**Inhalation:** Move person to fresh air.  
If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth to mouth, if possible.  
Call Poison Control Center or Doctor for further treatment advice.

**Ingestion:** Call Poison Control Center or Doctor immediately for treatment advice.  
Have person sip a glass of water if able to swallow.  
Do not induce vomiting unless told to do so by the Poison Control Center or Doctor.  
Do not give anything by mouth to an unconscious person.

## Section VI - Reactivity Data

STABILITY (choose one): ( ) UNSTABLE  
(x) STABLE

INCOMPATIBILITY (MATERIALS TO AVOID):

Acidic conditions and acids

HAZARDOUS DECOMPOSITION PRODUCTS:

Not applicable

HAZARDOUS POLYMERIZATION (choose one): ( ) MAY OCCUR  
(x) WILL NOT OCCUR

## Section VII - Spill or Leak Procedures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Evacuate area. Use appropriate personal protective equipment during clean up. Use a wet mop or vacuum cleaner equipped with a HEPA filter. Prevent entry into waterways. If reportable quantity is exceeded, contact the National Response Center.

WASTE DISPOSAL METHOD:

Follow all Federal, State and Local regulations for removal and disposal.

## Section VIII - Special Protection Information

RESPIRATORY PROTECTION (SPECIFY TYPE):

A NIOSH/MSHA approved respirator equipped with a High Efficiency Particulate (HEPA) filter, approved for radionuclides, is recommended when the exposure limits in section II are exceeded.

VENTILATION:

LOCAL EXHAUST: At source of generation to remove dust from breathing

ZIRCOPAX PLUS  
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MSDS ID: 51453

## Section VIII - Special Protection Information (Cont.)

zone.

MECHANICAL (GENERAL): Acceptable for small quantities

## PROTECTIVE GLOVES:

Impervious gloves

## EYE PROTECTION:

Safety glasses or goggles

## OTHER PROTECTIVE EQUIPMENT:

Safety shower and eye bath. Disposable coveralls to prevent contaminated clothing.

## Section IX - Special Precautions

## PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Store in sealed, closed containers. Prevent moisture inside containers.

## OTHER PRECAUTIONS:

Do not eat, drink or smoke while using this material. Use in accordance with good industrial hygiene standards.

## Section X - Regulatory Information

## REGULATORY INFORMATION:

TSCA Status: Components on Inventory

SARA Title III Section 313 Reportable Chemicals:  
Not ApplicableHMIS Rating: Health 1  
Fire 0  
Reactivity 0

## Section XI - Ingredients

## RIGHT-TO-KNOW INFORMATION:

Component	Cas#
Zirconium Silicate	14940-68-2
kyanite	1302-76-7
Staurolite	12182-56-8
Quartz	14808-60-7

## California Proposition 65:

Silica, crystalline (particles of respirable size) are known to the State of California to cause cancer.

Radionuclides are known to the State of California to cause cancer.

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Page 5 of 5  
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Section XII - References

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REFERENCES:

Barclays California Code of Regulations.  
NIOSH Pocket Guide to Chemical Hazards.  
29 CFR 1910.1000, Z-tables  
ACGIH TLV for Chemical Substances and Physical Agents.