

61155-1009

SAFETY DATA SHEET

SECTION 1 - MANUFACTURER/PRODUCT IDENTIFICATION:

PRODUCT IDENTITY: HOTLINE[®] PINK SLIPPER BEAD RELEASE (CAT. #s 15904 & 15905)

Manufacturer's (Distributor's) Name:
Creative Craftsmen Co., Inc.
27625 Diehl Road
Warrenville, Illinois 60555-3838

Emergency Telephone Number:
888- 215-4878
Information Telephone Number:
630-836-1353 Toll Free: 800-323-5668

Trade Name: HOTLINE[®] PINK SLIPPER BEAD RELEASE **Product Type:** Mandrel primer **Chemical Family:** Alumina

SECTION 2 - HAZARDS IDENTIFICATION:

SECTION 2.1: HAZARD CLASSIFICATION:

DANGER! THIS PRODUCT IS A CARCINOGEN

WARNING! THIS PRODUCT IS AN IRRITANT TO THE EYES, SKIN AND RESPIRATORY TRACT



Causes Lung Cancer
Contains Crystalline Silica



Harmful if swallowed
Causes skin irritation
Causes eye irritation
Causes respiratory tract irritation

PRECAUTIONARY INFORMATION:

CAUSES LUNG CANCER. CAUSES EYE IRRITATION. CAUSES SKIN IRRITATION. CAUSES RESPIRATORY TRACT IRRITATION. CAUSES STOMACH PAIN, IF SWALLOWED.

Prevent eye contact and prolonged skin contact. Utilize appropriate protective clothing and eye and skin protection. Avoid the generation and inhalation of dust and mist. Wear appropriate respiratory protection if dust/mist levels exceed exposure limits. Do not eat, drink or use tobacco products when there is potential exposure to this material. Wash hands thoroughly after handling. Prevent material from becoming airborne.

See additional information on the SDS for further details regarding the safe use of this product.

SECTION 2.2: LABEL INFORMATION:

PRODUCT IDENTITY: HOTLINE[®] PINK SLIPPER BEAD RELEASE (CAT #s 15904 & 15905)



Causes Lung Cancer
Contains Crystalline Silica



Harmful if swallowed
Causes skin irritation
Causes eye irritation
Causes respiratory tract irritation

HAZARD STATEMENT: This product contains an ingredient that is known to cause cancer. Crystalline silica causes lung cancer. Causes eye irritation. Causes skin irritation. Causes respiratory irritation. Causes stomach pain, if swallowed.

CAUTION: Keep away from children and pets. Avoid contact with skin and eyes. Avoid generating and breathing dust and mist. Use with adequate ventilation. Keep away from food products. Wash thoroughly after use. Keep container closed after use. Do not eat or drink product. If ingested seek immediate medical attention. Store in a cool dark place. Use impervious skin protection if there is prolonged skin contact.

EMERGENCY INFORMATION:

Eye Contact: Rinse with warm potable water for 15 minutes.

Skin Contact: Remove contaminated clothing and wash affected area.

Inhalation: Exit to fresh air. Support breathing as needed.

Ingestion: Rinse mouth. Drink milk or water if conscious. Do not induce vomiting.

Contact emergency personnel if medical issues need further treatment.

Health = 2

Flammability = 0

Physical Hazard = 0

PPE = E

Hazardous Material Information System

PPE = E means safety glasses, protective gloves and appropriate respirator.

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SECTION 3 - HAZARDOUS INGREDIENTS INFORMATION:

The information contained herein is believed to be correct and reliable. However, no warranty is expressed or implied regarding the accuracy of this data, and none is made as to the marketability of the material or its fitness for any purpose. The consumer accepts the responsibility of and the conditions for liability of use of the product. This product contains material that may be hazardous when airborne as a particulate.

HAZARDOUS COMPONENTS^a:

(Specific Chemical Identity; Common Name)	CAS Number	SARA ^b	OSHA PEL ^c (mg/m ³) ^d	ACGIH TLV ^e (mg/m ³)	NOTES	PERCENT ^f
Aluminum Trihydrate (Aluminum Hydroxide)	21645-51-2		5 15	1 ---	Respirable Al Total Al	NA ^g
Crystalline Silica (SiO ₂) (Quartz)	14808-60-7		0.05 ^h	0.025	Respirable Quartz	NA
EPK Kaolin (Aluminum Silicate)	1332-58-7		5 15	2 ---	Respirable Dust Total Dust	NA
Kyanite	1302-76-7		---	---	---	NA
Sodium Hypochlorite	7681-52-9		---	---	---	NA
Red Dye	NA		---	---	---	NA
Water	7732-18-5		---	---	---	NA

Notes:

- The term "Hazardous" is defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200) and does not necessarily imply the existence of any hazard. All components at concentrations equal to or greater than 1.0 percent (0.1 percent if a carcinogen) are listed in this section, according to OSHA 29 CFR 1910.1200.
- An asterisk (*) indicates a toxic chemical subject to the EPA's reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (SARA) and 40 CFR Part 372.
- These permissible exposure limits (PELs) are based on OSHA's rulemaking (29 CFR 1910 Subpart Z) adopted on May 29, 1971, and are the current regulatory limits, unless otherwise noted. Consult the OSHA regulations for particulate (29 CFR 1910.1000) for additional requirements.
- These values are reported as milligrams of contaminant per cubic meter of air (mg/m³).
- These values are based on the American Conference of Governmental Industrial Hygienists (ACGIH) 2016 TLVs.
- Approximate percent by weight values.
- NA = Not Available or Not Applicable. The amount of each ingredient in this product is confidential and deemed proprietary. Contact the manufacturer for additional information.
- The PEL for crystalline silica is based on the OSHA regulation for Respirable Crystalline Silica (29 CFR 1910.1053).

SECTION 4 - FIRST AID PROCEDURES:

Inhalation: Exit to fresh air. Support breathing as needed. If condition persists, seek medical attention.

Eyes: Hold eyelids apart and flush eyes with plenty of warm water for at least 15 minutes. Seek medical attention if irritation persists.

Skin: Remove contaminated clothing and wash affected area with plenty of soap and water for at least 15 minutes. If redness or irritation develops, seek medical attention. Discard or decontaminate clothing before reuse.

Ingestion: Material is classified as non-toxic. Do not induce vomiting. Immediately rinse mouth with plenty of water. Never give anything by mouth to an unconscious person. Seek medical attention if necessary.

Note to Physician: Potential dust and mist exposure is of concern. Product contains crystalline silica.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT (Method Used): NA This product is nonflammable and will not support combustion. Significant airborne concentrations of dust can create flammable/explosive conditions.

FLAMMABLE LIMITS: **LEL:** NA **UEL:** NA

AUTOIGNITION TEMPERATURE: NA

EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire including carbon dioxide, dry chemical, foam, halon, or water mist.

SPECIAL FIRE FIGHTING PROCEDURES: Wear appropriate protection for the surrounding fire. When fighting chemical fires wear self-contained breathing apparatus and full protective chemical resistant clothing. Do not release runoff to sewers and waterways. Cool containers with water spray until well after fire is out.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When subjected to heat and flames, toxic gases such as aluminum oxides, CO and CO₂ may be released.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES:**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:**

Caution: This material is a slurry. It is slippery on surfaces. Prevent material from spilling on floors. Do not leave spills on floors unattended. Barricade spill area until cleanup is complete. Avoid stepping in spilled material.

Contain small spills using appropriate spill containment materials including absorbents such as paper and cloth towels. For large spills dike the material with spill absorbent booms and socks.

During clean up of dried material avoid creating airborne dust (e.g., use wet methods, or HEPA vacuum). Where product is dry and may become airborne utilize appropriate personal protective equipment such as a NIOSH approved air-purifying respirator equipped with filters approved for particulates (P100), and protective clothing.

For dry product, prevent the spread of the material and keep dust levels to a minimum. Wet the dried material, scoop up, vacuum or mop the material, and place it into closed containers for reuse or disposal. Once material is swept up, the area may be rinsed with water.

If an emergency situation exists, contact spill response personnel.

Place absorbents into appropriate containers for disposal.

CERCLA Reportable Quantity: Aluminum and quartz are not listed.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE:**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:**

When not in use, store in tightly closed containers in a dry, cool area.

If material has dried out add water to maintain slurry consistency.

Keep floors clean and dry.

Use only with adequate ventilation that keeps dust/mist levels below the permissible exposure limit (PEL).

Handle so as not to create airborne dust. Avoid breathing dust/mist. Utilize appropriate NIOSH-approved respirator if airborne dust exposures are above PEL.

Handle with care. Avoid unnecessary eye and prolonged skin contact. Wash thoroughly after handling.

PRECAUTIONS TO BE DURING REPAIR AND MAINTENANCE: Not Applicable

OTHER PRECAUTIONS: Do not allow material to dry out. Keep material from direct sunlight. Keep work surfaces clean. Work on newspaper or paper towels for easy cleanup. Clean surfaces with wet sponge, rinsing frequently. Do not dry sweep.

Empty containers may contain residue and are considered hazardous. Do not reuse empty containers for food, clothing or for personal consumption products.

Keep away from sparks and flames. Keep out of reach of children.

SECTION 8 - CONTROL MEASURES/PERSONAL PROTECTION:**VENTILATION:**

Local Exhaust: If necessary, use enclosures with local exhaust ventilation to keep exposures below PELs.

Mechanical: If necessary to keep dust levels below PELs. Recommended for confined areas and when handling dry material.

Special: NA.

RESPIRATORY PROTECTION (Specify Type): Under normal conditions of use, no respiratory protection is needed. Where exposure above the PEL/TLV is likely, utilize a NIOSH approved dust mask, or a half-mask or full-facepiece air-purifying respirator (APR) equipped with filters approved for particulate and mist. Additional protection (e.g., air-line respirator or SCBA) may be required for emergencies or in designated areas (e.g., confined areas). APRs do not protect workers in oxygen deficient atmospheres.

PROTECTIVE GLOVES: No hand protection is needed under normal conditions of use. During extended periods of use when excessive skin contact is likely, wear appropriate gloves to protect from abrasive dust and mist.

EYE PROTECTION: Safety glasses with side shields or goggles. Cover goggles are recommended in dusty areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No skin protection is needed under normal conditions of use. During extended periods of use when excessive skin contact is likely, wear appropriate equipment to protect skin.

SAFETY STATIONS: Make available in the work area emergency eyewash stations, and washing facilities.

WORK/HYGIENIC PRACTICES: Avoid skin and eye contact. Avoid breathing dust and mist. Practice good personal hygiene. Do not eat, drink, smoke, or apply cosmetics in work areas. Wash face and hands prior to eating, drinking or other hand-to-mouth activities. Launder contaminated clothing before reuse.

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SECTION 9 - PHYSICAL/CHEMICAL CHARACTERISTICS:

BOILING POINT:	ND	VAPOR DENSITY (Air = 1)	NA
MELTING POINT:	ND	VAPOR PRESSURE (mm Hg):	NA
SPECIFIC GRAVITY:	Less than 2.5 (H ₂ O = 1)	EVAPORATION RATE	
Bulk Density:	<20.9 lbs/gallon	(Butyl Acetate = 1):	NA
pH:	NA		
APPEARANCE AND ODOR:	Pink slurry. No odor.	SOLUBILITY IN WATER:	Slightly Soluble to Insoluble.

SECTION 10 - STABILITY AND REACTIVITY:

STABILITY:	Stable:	X	Unstable:	
Conditions to Avoid:	None			
INCOMPATIBILITY (Materials to Avoid):	None known.			
HAZARDOUS POLYMERIZATION:	May Occur:		Will Not Occur:	X
Conditions to Avoid:	None known.			
DECOMPOSITION PRODUCTS:	None known under normal handling and storage conditions. Excessive heat can create aluminum oxides, CO and CO ₂ .			

SECTION 11 - HEALTH HAZARD DATA:

ROUTE(S) OF ENTRY:	Inhalation: Yes	Skin/Eye Contact: Yes	Skin Absorption: No	Ingestion: Unlikely
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HEALTH HAZARDS (Acute and Chronic):**Acute (Short-Term) Effects:**Eye contact: Causes eye irritation.Skin contact: Causes skin irritation.Inhalation: Inhalation of dust/mist causes respiratory tract irritation. Repeated and/or prolonged inhalation of dust/mist may cause impaired lung function. Smoking aggravates the effects of excessive dust/mist exposure.Ingestion: Not likely during routine work activities. Swallowing large amounts can irritate the gastrointestinal tract.Systemic Effects: None known.**Chronic (Long-Term) Effects:**

Crystalline silica is considered a lung toxin. Repeated and prolonged inhalation of dust and mist may cause impaired lung function. Smoking aggravates the effects of excessive exposure to particulate. Long-term overexposure to particulate containing crystalline silica may cause fibrosis and lung cancer. Long-term overexposure to particulate containing amorphous silica may cause pneumoconiosis.

Reproductive or developmental effects: No ingredient is listed on the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) list of chemicals known to cause reproductive effects.

CARCINOGENICITY: NTP: Yes IARC: Yes OSHA REGULATED: Yes

* Crystalline silica (quartz) is listed as a cancer-causing agent in the NTP Sixth Annual Report on Carcinogens and in the IARC Monographs, Volume 42.

** **WARNING:** This product contains or produces a chemical (crystalline silica) known to the State of California and other states, if applicable, to cause cancer.**SIGNS AND SYMPTOMS OF EXPOSURE:** Skin, eye and respiratory tract irritation.**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**

Individuals with upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema, and asthma. Persons who smoke and are exposed to respirable forms of crystalline silica are at a significantly higher risk of developing lung-related problems than people who do not smoke.

SECTION 12 - ECOLOGICAL INFORMATION:**Toxicity:** No further relevant information is available.

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SECTION 13 - DISPOSAL:

WASTE DISPOSAL METHOD: Dispose of in accordance with local, state, and/or federal regulations. This material is not classified as a hazardous waste and is not regulated under RCRA. Small amounts and cleanup debris can be disposed of as regular waste.

SECTION 14 - TRANSPORTATION DATA:

DOT Proper Shipping Name: Not Regulated by DOT
UN Hazard Class: None
UN Number: None
DOT Label: None

SECTION 15 - REGULATORY INFORMATION:

OSHA Hazard Communication Standard 29 CFR 1919.1000
OSHA PELs 29 CFR 1910.1000 and 1910.1053
EPA SARA Section 313 and 40 CFR Part 372
EPA Waste Disposal Regulations
California Proposition 65

SECTION 16 - OTHER INFORMATION:

This Safety Data Sheet (SDS) was prepared to comply with the UN Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This SDS also complies with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulation.

The information contained within this SDS is based on data believed to be correct and reliable. All information appearing within this SDS is based upon data obtained from suppliers of the raw materials. While the information is believed to be accurate, Creative Craftsmen Co. Inc. makes no representation as to its accuracy of sufficiency. No guarantee or warranty is expressed or implied regarding the accuracy of this data and information contained herein. Creative Craftsmen Co. Inc. expressly disclaims all expressed or implied warranties for merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

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Abbreviations:

ACGIH	American Industrial Hygiene Association	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980	OSHA	Occupational Safety and Health Administration
CAS#	Chemical Abstract Number	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	PPE	Personal Protective Equipment
DOT	Department of Transportation	RCRA	Resource Conservation and Recovery Act
EPA	Environmental Protection Agency	RQ	Reportable Quantity
HMIS	Hazardous Material Information System	SDS	Safety Data Sheet
IARC	International Agency for Research on Cancer	STEL	Short-Term Exposure Limit
IDLH	Immediately Dangerous to Life and Health	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TWA	Time-Weighted Average
NA	Not Applicable	UEL	Upper Explosive Limit
		UN	United Nations

Date Prepared: 06/27/16

Date Revised: 03/08/17

HOTLINE® PINK SLIPPER BEAD RELEASE (15904/5) SDS 2017

SAFETY DATASHEET

Following Regulation 1910.1200

SDS Number: 201

Date of first issue: 01 October 1985

Date of last revision: 01 June 2015

1 - Identification of product

a - Product identifier used on the label

Tradenames: Cerablanket, Cerachem Blanket, Cerachem Bulk, Cerafibre Bulk, Cerwool HP Bulk, Cerwool HTA, Cerwool HTZ Bulk, Cerwool RT Bulk, FireMaster FP60, Kaowool Blanket, Kaowool Bulk, Kaowool High Purity Bulk, Kaowool RT, Kaowool RT Blanket, Kaowool Tank Car Blanket, Kaowool Veneering Modules - HP and ZR Grades, K-Shield BF Paper, Monomax Modules, Preflex HP Module, Preflex HTZ Module, Premax HP Module, Premax HTA Module, Premax HTZ Modules, Pyro-Bloc Burner Bloc, Pyro-Bloc E and E2 Modules, Pyro-Bloc M and M2 Modules (R and ZR Grades), Pyro-Bloc Veneering Modules (C Grade), Pyro-Bloc Veneering Modules (R and ZR Grade), Pyro-Bloc Y Modules (R and ZR Grades), Pyro-Bloc Y2 Modules (R and ZR Grades), Pyro-Fold M Modules (HP, ZR and CR Grades), Pyro-Fold Y Modules (HP and ZR Grades), Pyro-Log and Pyro-Packing Fibre (R and ZR Grades), SBH-5 End Cones, Ultrafelt Paper, Unibloc Modules (HP, ZR and CR Grades), Z-Blok Modules (HP and ZR Grades),

b - Other means of identification

REFRACTORY CERAMIC FIBER PRODUCT

c - Recommended use of the chemical and restrictions on use

Primary Use: Refractory Ceramic Fiber (RCF) materials are used primarily in industrial high temperature insulating applications. Examples include heat shields, heat containment, gaskets, expansion joints, industrial furnaces, ovens, kilns, boilers and other process equipment at applications up to 1400°C. RCF based products are not intended for direct sale to the general public. While RCFs are used in the manufacture of some consumer products, such as catalytic converter mats and wood burning stoves, the materials are contained, encapsulated, or bonded within the units

Secondary Use: Conversion into wet and dry mixtures and articles (refer to section 8) **Tertiary Use:** Installation, removal (industrial and professional) / Maintenance and servicelife (industrial and professional) (refer to section 8).

Uses Advised Against: Spraying of dry product.

d - Name, address, and telephone number

<p>Morgan Advanced Materials P. O. Box 923; Dept. 300 Augusta, GA 30903-0923 Telephone: 706-796-4200</p>

e - Emergency Phone Number

For Product Stewardship and Emergency Information:
Hotline - 1-800-722-5681
Fax - 706-560-4054

For additional MSDSs and to confirm this is the most current MSDS for the product, visit our web page www.morganthermalceramics.com or send a request to MT.NorthAmerica@morganplc.com

2 - Hazard Identification

a - Classification of the chemical in accordance with paragraph (d) of §1910.1200

The U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (HCS) 2012 indicates that IARC Group 2B corresponds to OSHA HCS 2012 Category 2 carcinogen classification (see, e.g., §1910.1200, Appendix F, Part D).

b - Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200

Under OSHA HCS 2012, RCF is classified as GHS category 2 carcinogen.

Hazard Pictograms



Signal Words

Warning

Hazard Statements

Suspected of causing cancer by inhalation.

Precautionary Statements

Do not handle until all safety instructions have been read and understood.
 Use respiratory protection as required; see section 8 of the Safety Data Sheet.
 If concerned about exposure, get medical advice.
 Store in a manner to minimize airborne dust.
 Dispose of waste in accordance with local, state and federal regulations.

Supplementary Information

May cause temporary mechanical irritation to exposed eyes, skin or respiratory tract.
 Minimize exposure to airborne dust.

Emergency Overview

c - Describe any hazards not otherwise classified that have been identified during the classification process

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure.
 These effects are usually temporary.

d - Mixture Rule

Not applicable.

3 - Composition / Information On Ingredients

Composition table

COMPONENTS	CAS NUMBER	% BY WEIGHT
Refractories, Fibers, Aluminosilicate	142844-00-6	40 - 100
Water	7732-18-5	0 - 60

b - Common Name

RCF, ceramic fiber, Alumino Silicate Wool (ASW), synthetic vitreous fiber (SVF), man-made vitreous fiber (MMVF), man-made mineral fiber (MMMF), high temperature insulation wool (HTIW).

d - Impurities and Stabilizing Additives

Not applicable.

4 - First-Aid measures

a - Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion

Eyes

If eyes become irritated, flush immediately with large amounts of lukewarm water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes.

Skin

If skin becomes irritated, remove soiled clothing. Do not rub or scratch exposed skin. Wash area of contact thoroughly with soap and water. Using a skin cream or lotion after washing may be helpful.

Respiratory Tract

If respiratory tract irritation develops, move the person to a dust free location. See Section 8 for additional measures to reduce or eliminate exposure.

Gastrointestinal

If gastrointestinal tract irritation develops, move the person to a dust free environment.

c - Indication of immediate medical attention and special treatment needed, if necessary

5 - Fire-fighting measures

a - Suitable (and unsuitable) extinguishing media and

Use extinguishing media suitable for type of surrounding fire

c - Special Protective Equipment and Precautions for Firefighters

NFPA Codes: Flammability: 0 Health: 1 Reactivity: 0 Special: 0

b - Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

None

6 - Accidental Release Measures

a - Personal precautions, protective equipment, and emergency procedures

Minimize airborne dust. Compressed air or dry sweeping should not be used for cleaning. See Section 8 "Exposure Controls / Personal Protection" for exposure guidelines.

b - Methods and materials for containment and cleaning up

Frequently clean the work area with vacuum or wet sweeping to minimize the accumulation of debris. Do not use compressed air for clean-up.

7 - Handling and storage

a - Precautions for safe handling

Handle fiber carefully to minimize airborne dust. Limit use of power tools unless in conjunction with local exhaust ventilation. Use hand tools whenever possible.

b - Conditions for safe storage, including any incompatibilities

Store in a manner to minimize airborne dust.

empty containers

Product packaging may contain residue. Do not reuse.

8 - Risk Management Measures / Exposures Controls / Personal Protection

a - OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available

EXPOSURE GUIDELINES			
MAJOR COMPONENT	OSHA PEL	ACGIH TLV	MANUFACTURER'S REG
Refractories, Fibers, Aluminosilicate	None Established*	0.2 f/cc, 8-hr. TWA	0.5 f/cc, 8-hr. TWA**
*Except of in the state of California, there is no specific regulatory standard for RCF in the U.S. OSHA's "Particulate Not Otherwise Regulated (PNOR)" standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally - Total Dust 15 mg/m ³ ; Respirable Fraction 5 mg/m ³ . The PEL for RCF in California is 0.2 f/cc, 8-hr TWA			
** HTIW Coalition has sponsored comprehensive toxicology and epidemiology studies to identify potential RCF-related health effects [see Section 11 for more details], consulted experts familiar with fiber and particle science, conducted a thorough review of the RCF-related scientific literature, and further evaluated the data in a state-of-the-art quantitative risk assessment. Based on these efforts and in the absence of an OSHA PEL, HTIW Coalition has adopted a recommended exposure guideline (REG), as measured under NIOSH Method 7400 B. The manufacturers' REG is intended to promote occupational health and safety through feasible exposure controls and reductions as determined by extensive industrial hygiene monitoring efforts undertaken voluntarily and pursuant to an agreement with the U.S. Environmental Protection Agency.			
OTHER OCCUPATIONAL EXPOSURE LEVELS (OEL) RCF-related occupational exposure limits vary internationally. Regulatory OEL examples include: Canada – 0.2 to 1.0 f/cc; Ontario Canada – 0.5 f/cc. United Kingdom – 1.0 f/cc. Non-regulatory OEL examples include: HTIW Coalition REG – 0.5 f/cc. The objectives and criteria underlying each of these OEL decisions also vary. The evaluation of occupational exposure limits and their relative applicability to the workplace is best performed, on a case-by-case basis, by a qualified Industrial Hygienist.			

b - Appropriate Engineering Controls

Use engineering controls such as local exhaust ventilation, point of generation dust collection, down draft work stations, emission controlling tool designs and materials handling equipment designed to minimize airborne fiber emissions.

c - Individual protection measures, such as personal protective equipment

PPE - Skin

Wear personal protective equipment (e.g gloves), as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employees should be informed on best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, and rinse washer before washing other household clothes.

PPE - Eye

As necessary, wear goggles or safety glasses with side shields.

PPE – Respiratory

When engineering and/or administrative controls are insufficient to maintain workplace concentrations below the 0.5 f/cc REG or a regulatory OEL, the use of appropriate respiratory protection, pursuant to the requirements of OSHA Standards 29 CFR 1910.134 and 29 CFR 1926.103, is recommended. A NIOSH certified respirator with a filter efficiency of at least 95% should be used. The 95% filter efficiency recommendation is based on NIOSH respirator selection logic sequence for exposure to manmade mineral fibers. Pursuant to NIOSH recommendations, N-95 respirators are appropriate for exposures up to 10 times the NIOSH Recommended Exposure Limit (REL). With respect to RCF, both the NIOSH REL and the industry REG have been set at 0.5 fibers per cubic centimeter of air (f/cm³). Accordingly, N-95 would provide the necessary protection for exposures up to 5 f/cm³. Further, the Respirator Selection Guide published by 3M Corporation, the primary respirator manufacturer, specifically recommends use of N-95 respirators for RCF exposures. In cases where exposures are known to be above 5.0 f/cm³, 8 hour TWA, a filter efficiency of 100% should be used. Other factors to consider are the NIOSH filter series N, R or P – (N) **N**ot resistant to oil, (R) **R**esistant to oil and (P) **P**roof. These recommendations are not designed to limit informed choices, provided that respiratory protection decisions comply with 29 CFR 1910.134.

The evaluation of workplace hazards and the identification of appropriate respiratory protection is best performed, on a case by case basis, by a qualified Industrial Hygienist.

Other Information

Concentrations based upon an eight-hour time weighted average (TWA) as determined by air samples collected and analyzed pursuant to NIOSH method 7400 (B) for airborne fibers. The manufacturer recommends the use of a full-facepiece air purifying respirator equipped with an appropriate particulate filter cartridge during furnace tear-out events and the removal of used RCF to control exposures to airborne fiber.

and the potential presence of crystalline silica.

9 - Physical and chemical properties

a - Appearance	White, odorless, fibrous material
b - Odor	Not applicable
c - Odor Threshold	Not applicable
e- pH	Not applicable
d - Melting Point	1760°C (3200°F)
f- Initial Boiling Point/Range	Not applicable
g- Flashpoint	Not applicable
h - Evaporation Rate	Not applicable
i - Flammability	Not applicable
j - Upper/Lower Flammability or Explosive Limits	Not applicable
k - VAPOR PRESSURE	Not applicable
l - VAPOR DENSITY	Not applicable
m - Solubility	Not soluble in water
n - Relative Density	2.50 - 2.75
o - Partition Coefficient: n-Octanol/water	Not applicable
p - Auto-ignition temperature	Not applicable
q - Decomposition Temperature	Not applicable
r - Viscosity	Not applicable

10 - Stability and Reactivity

a - Reactivity

Stable under conditions of normal use.

b - Chemical Stability

This is a stable material.

Possibility of Hazardous Reaction

Not applicable.

d - Conditions to Avoid

Please refer to handling and storage advise in Section 7.

e - Incompatible Materials

None

f - Hazardous decomposition products

None

11 - Toxicological information

b - Acute Toxicity

c - Epidemiology

In order to determine possible human health effects following RCF exposure, the University of Cincinnati has been conducting medical surveillance studies on RCF workers in the U.S.A; this epidemiological study has been ongoing for 25 years and medical surveillance of RCF workers continues. The Institute of Occupational Medicine (IOM) has conducted medical surveillance studies on RCF workers in European manufacturing facilities.

Pulmonary morbidity studies among production workers in the U.S.A. and Europe have demonstrated an absence of interstitial fibrosis. In the European study a reduction of lung capacity among smokers has been identified, however, based on the latest results from a longitudinal study of workers in the U.S.A. with over 17-year follow-up, there has been no accelerated rate of loss of lung function (McKay et al. 2011).

A statistically significant correlation between pleural plaques and cumulative RCF exposure was evidenced in the U.S.A. longitudinal study.

The U.S.A. mortality study showed no excess mortality related to all deaths, all cancer, or malignancies or diseases of the respiratory system including mesothelioma (LeMasters et al. 2003).

d - Toxicology

- *Acute toxicity: short term inhalation*

No data available: Short term tests have been undertaken to determine fiber (bio) solubility rather than toxicity; repeat dose inhalation tests have been undertaken to determine chronic toxicity and carcinogenicity.

- *Acute toxicity: oral*

No data available: Repeated dose studies have been carried out using gavage. No effect was found.

- *Skin corrosion/irritation*

Not a chemical irritant according to test method OECD no. 404.

- *Serious eye damage/irritation*

Not possible to obtain acute toxicity information due to the morphology and chemical inertness of the substance.

- *Respiratory or skin sensitization*

No evidence from human epidemiological studies of any respiratory or skin sensitization potential.

- *Germ cell mutagenicity/genotoxicity*

Method: In vitro micronucleus test

Species: Hamster (CHO)

Dose: 1-35 mg/ml

Routes of administration: In suspension

Results: Negative

- *Carcinogenicity*

Method: Inhalation, multi-dose

Species: Rat

Dose: 3 mg/m³, 9 mg/m³ and 16 mg/m³

Routes of administration: Nose only inhalation

Results: Fibrosis just reached significant levels at 16 and 9 mg/m³ but not at 3 mg/m³. None of the parenchymal tumor incidences were higher than the historical control values for this strain of animal.

Method: Inhalation, single dose

Species: Rat

Dose: 30 mg/m³

Routes of administration: Nose only inhalation

Results: Rats were exposed to a single concentration of 200 WHO fibers/ml specially prepared RCF for 24 months. High incidence of exposure-related pulmonary neoplasms (bronchoalveolar adenomas and carcinomas) was observed. A small number of mesotheliomas were observed in each of the fiber exposure groups (Mast et al 1995a).

Method: Inhalation, single dose

Species: Hamster

Dose: 30 mg/m³

Routes of administration: Nose only inhalation

Results: Hamsters were exposed to a single concentration of 260 WHO fibers/ml specially prepared RCF for 18 months and developed lung fibrosis, a significant number of pleural mesotheliomas (42/102) but no primary lung tumors (McConnell et al 1995).

Method: Inhalation, single dose

Species: Rat

Dose: RCF1: 130 F/ml and 50 mg/m³ (25% of non fibrous particles)

RCF1a: 125 F/ml and 26 mg/m³ (2% of non fibrous particles)

Routes of administration: Nose only inhalation

Results: Rats were exposed to RCF1 and RCF1a for 3 weeks. The objective of the study was to compare lung retention and biological effects of the original RCF1 compared to RCF1a. The main difference of these 2 samples was the non-fibrous particle content of respectively 25% versus 2%. The post treatment observation was 12 months. Alveolar clearance was barely retarded after RCF1A exposure. After RCF1 exposure, however, a severe retardation of clearance was observed. (Bellmann et al 2001).

After intraperitoneal injection of ceramic fibers into rats in three experiments (Smith et al 1987, Pott et al 1987, Davis et al 1984), mesotheliomas were found in the abdominal cavity in two studies, while the third report (Pott et al 1987) had incomplete histopathology. Only a few mesotheliomas were found in the abdominal cavity of hamsters after intraperitoneal injection in one experiment (Smith et al 1987). However, the ceramic fibers tested were of relatively large diameter. When rats and hamsters were exposed via intraperitoneal injection, tumor incidence was related to fiber length and dose (Smith et al 1987, Pott et al 1987, Miller et al 1999, Pott et al 1989). (From SCOEL publication (EU Scientific Committee on Occupational Exposure Limits) SCOEL/SUM/165, September 2011).

- *Reproductive toxicity*

Method: Gavage

Species: Rat

Dose: 250mg/kg/day

Routes of administration: Oral

Results: No effects were seen in an OECD 421 screening study. There are no reports of any reproductive toxic effects of mineral fibers. Exposure to these fibers is via inhalation and effects seen are in the lung. Clearance of fibers is via the gut and the feces, so exposure of the reproductive organs is extremely unlikely.

- *STOT-Single exposure*

Not applicable

- *STOT-Repeated exposure*

Not applicable

- *Aspiration hazard*

Not applicable

See the following review publications for a summary and discussion:

Interpretation of these animal experiments is complex and there is not complete agreement among scientists internationally. A summary of the evidence relating to RCF carcinogenicity in vivo can be found in SCOEL/SUM/165 and in Utell and Maxim 2010.

Other information

Numerous studies indicate the relevance of biopersistence as a determinant of toxic effects of fiber exposure. (Maxim et al 2006).

Irritant Properties

Negative results have been obtained in animal studies (EU method B 4) for skin irritation. Inhalation exposures using the nose only route produce simultaneous heavy exposures to the eyes, but no reports of excess eye irritation exist. Animals exposed by inhalation similarly show no evidence of respiratory tract irritation.

Human data confirm that only mechanical irritation, resulting in itching, occurs in humans. Screening at manufacturers' plants in the UK has failed to show any human cases of skin conditions related to fiber exposure.

International Agency for Research on Cancer and National Toxicology Program

IARC, in 1988, Monograph v.43 (and later reaffirmed in 2002, v.81), classified RCF as possibly carcinogenic to humans (group 2B). IARC evaluated the possible health effects of RCF as follows:

There is inadequate evidence in humans for the carcinogenicity of RCF. There is sufficient evidence in experimental animals for the carcinogenicity of RCF. The Annual Report on Carcinogens (latest edition), prepared by NTP, classified respirable RCF as "reasonably anticipated" to be a carcinogen. Not classified by OSHA.

12 - Ecological information

13 - Disposal Considerations

Waste Management and Disposal

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

Additional information

This product, as manufactured, is not classified as a listed or characteristic hazardous waste according to U. S. Federal regulations (40 CFR 261). Any processing, use, alteration or chemical additions to the product, as purchased, may alter the disposal requirements. Under U. S. Federal regulations, it is the waste generator's responsibility to properly characterize a waste material, to determine if it is a "hazardous" waste. Check local, regional, state or provincial regulations to identify all applicable disposal requirements.

14 - Transport information

a - UN number.

Hazard Class: Not Regulated United Nations (UN) Number: Not Applicable
Labels: Not Applicable North America (NA) Number: Not Applicable
Placards: Not Applicable Bill of Lading: Product Name

b - UN proper shipping name

Not applicable.

c - Transport hazard class(es)

Not applicable.

d - Packing group, if applicable

Not applicable.

e - Environmental hazards (e.g., Marine pollutant (Yes/No))

No.

f - Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)

Not regulated.

g - Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises

Not applicable.

International

INTERNATIONAL

Canadian TDG Hazard Class & PIN: Not regulated

Not classified as dangerous goods under ADR (road), RID (train), IATA (air) or IMDG (ship).

15 - Regulatory information

15.1 - United States Regulations

UNITED STATES REGULATIONS

EPA: Superfund Amendments and Reauthorization Act (SARA) Title III - This product does not contain any substances reportable under Sections 302, 304, 313, (40 CFR 372). Sections 311 and 312 (40 CFR 370) apply (delayed hazard).

Toxic Substances Control Act (TSCA)— RCF has been assigned a CAS number; however, it is not required to be listed on the TSCA inventory.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the **Clean Air Act (CAA)** - RCF contains fibers with an average diameter greater than one micron and thus is not considered a hazardous air pollutant.

OSHA: Comply with **Hazard Communication Standards** 29 CFR 1910.1200 and 29 CFR 1926.59 and the **Respiratory Protection Standards** 29 CFR 1910.134 and 29 CFR 1926.103.

California: Ceramic fibers (airborne particles of respirable size) is listed in **Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986** as a chemical known to the State of California to cause cancer.

Other States: RCF products are not known to be regulated by states other than California; however, state and local OSHA and EPA regulations may apply to these products. If in doubt, contact your local regulatory agency.

15.2 - International Regulations

INTERNATIONAL REGULATIONS

Canada:

Canadian Workplace Hazardous Materials Information System (WHMIS) - RCF is classified as Class D2A - Materials Causing Other Toxic Effects

Canadian Environmental Protection Act (CEPA)- All substances in this product are listed, as required, on the Domestic Substances List (DSL)

European Union:

European Directive 97/69/EC classified RCF as a Category 2 carcinogen; that is it "should be regarded as if it is carcinogenic to man."

REACH Regulation:

RCF is classified under the CLP (classification, labelling and packaging of substances and mixtures) regulation as a category 1B carcinogen. On January 13, 2010 the European Chemicals Agency (ECHA) updated the candidate list for authorization (Annex XV of the REACH regulation) and added 14 new substances in this list including aluminosilicate refractory ceramic fibers.

As a consequence, EU (European Union) or EEA (European Economic Area) suppliers of articles which contain aluminosilicate refractory ceramic fibers in a concentration above 0.1% (w/w) have to provide sufficient information, available to them, to their customers or upon requests to a consumer within 45 days of the receipt of the request. This information must ensure safe use of the article, and as minimum contains the name of the substance.

16 - Other Information

initial statement

Devitrification

As produced, all RCF fibers are vitreous (glassy) materials which do not contain crystalline silica. Continued exposure to elevated temperatures over time may cause these fibers to devitrify (become crystalline). The first crystalline formation (mullite) begins to occur at approximately 985° C (1805° F). Crystalline phase silica may begin to form at approximately 1100° C (2012° F). When the glass RCF fibers devitrify, they form a mixed mineral crystalline silica containing dust. The crystalline silica is trapped in grain boundaries within a matrix predominately consisting of mullite. The occurrence and extent of crystalline phase formation is dependent on the duration and temperature of exposure, fiber chemistry and/or the presence of fluxing agents or furnace contaminants. The presence of crystalline phases can be confirmed only through laboratory analysis of the "hot face" fiber.

IARC's evaluation of crystalline silica states "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)" and additionally notes "carcinogenicity in humans was not detected in all industrial circumstances studied." IARC also studied mixed mineral crystalline silica containing dusts such as coal dusts (containing 5–15 % crystalline silica) and diatomaceous earth without seeing any evidence of disease. (IARC Monograph Vol. 68, 1997). NTP lists all polymorphs of crystalline silica as substances which may "reasonably be anticipated to be carcinogens".

IARC and NTP did not evaluate after-service RCF, which may contain various crystalline phases. However, an analysis of after-service RCF samples obtained pursuant to an exposure monitoring agreement with the EPA, found that in the furnace conditions sampled, most did not contain detectable levels of crystalline silica. Other relevant RCF studies found that (1) simulated after-service RCF showed little, or no, activity where exposure was by inhalation or by intraperitoneal injection; and (2) after-service RCF was not cytotoxic to macrophage-like cells at concentrations up to 320 micrograms/cm² - by comparison, pure quartz or cristobalite were significantly active at much lower levels (circa 20 micrograms/cm²).

HMIS HAZARD RATING

HMIS Health	1* (* denotes potential for chronic effects)
HMIS Flammable	0
HMIS Reactivity	0
HMIS Personal Protective Equipment	X (To be determined by user)

TECHNICAL DATASHEETS

514-500, 514-200, 514-1065, 514-1060, 514-1055, 514-1050, 514-1040, 514-1030, 514-1020, 514-1012, 514-1011, 514-1010, 514-1006, 514-1005, 514-1005, 514-1001, 514-1000, 514-956, 514-955, 514-946, 514-945, 514-935, 514-906, 514-905, 514-806, 514-805, 514-804, 514-803, 514-801, 514-800, 514-250, 514-220, 514-215, 514-205

Revision Summary

In May 2015 this SDS has been updated to GHS format in conformance with US OSHA HCS 2012 (29CFR 1910.1200) and Canada Hazardous Products Act and the Hazardous Products Regulations.

MSDS prepared by

SDS Prepared By: MORGAN THERMAL CERAMICS ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT

Disclaimer

The information presented herein is presented in good faith and believed to be accurate as of the effective date of this Safety Data Sheet. Employers may use this SDS to supplement other information gathered by them in their efforts to assure the health and safety of their employees and the proper use of the product. This summary of the relevant data reflects professional judgment; employers should note that information perceived to be less relevant has not been included in this SDS. Therefore, given the summary nature of this document, Morgan Thermal Ceramics does not extend any warranty (expressed or implied), assume any responsibility, or make any representation regarding the completeness of this information or its suitability for the purposes envisioned by the user.

It FILES OF SAFETY
(as the Guiding one 91/155/CEE – D. M. of the 28/01/92)

Commercial Name of the product: COLORED STICK

Version: 1/1

Situation to the: 08/01/07

1) IDENTIFICATION OF THE PRODUCT AND OF THE PRODUCTIVE

Society produttrice: EFFETRE S. P. TO. VIA ROME N° 66 – 31023 RESANA (TV)

TEL. 0423/480541 –

FAX 0423/480544

E-MAIL: f3ind1@effetre.com

Name of the product: BACCHETTA STICK

2) COMPOSITION – INFORMATION ON THE sodium COMPONENTS

Glass – calcium having the following middle composition percentage:

SILICA 50 ÷ 60%

SODA 18 ÷ 22%

LIME 4 ÷ 9%

DOLOMITES 4.5 ÷ 6.5%

POTASSIUM NITRATE 1 ÷ 2.5%

BORAX PENTAIDRATO 0.8 ÷ 1.5%

NITRATE OF SODIUM 0.8 ÷ 1.5%

SPATOFUORE 0.2 ÷ 0.8%

OXIDES (titanium dioxide – antimony trioxide – amorphous graphite dust – neodymium carbonate – selenium trioxide – copper I oxidize – cobalt I oxidize – sulfur of cadmium – Manganese dioxide – chrome I oxidize) 0.1 ÷ 0.4%

The oxides used in small quantity like agents sharpening and coloring can be identified in the product by means of chemical analysis, during the trial of merger of the said glass oxides come changed in a matrix stabilized and not more the original property.

3) IDENTIFICATION OF THE DANGERS

Materials inert.

4) MEASURES OF FIRST HELPED

In case of cuts: to put in action the normal procedures of intervention, seeking medical consultancy when necessary. In case of scaglie/dust in the eyes: to wash the eyes with water, to consult the medical one if the problem persists. In case of scaglie in the skin: to wash with water, to consult a medical one if the problem persists.

5) FIRE MEASURES

Not fuel.

Half of extinction: no limitation.

6) MEASURES IN ACCIDENTAL CASE OF LEAKAGE In a matter of leakage of material, to put in action the normal precautions of manipulation. In splinters of formation of case or dust of glass, to dismiss avoiding to lift dust.

7) MANIPULATION AND STORAGE Manipulation: to avoid the contact with the cutting edges. Storage: stoccare the sticks in containers on solid structures, in dry environments and resembled, to the shelter from the atmospheric agents. Temperature of storage: environment. Specific sensibility: dampness.

8) CONTROL DELL' EXHIBITION – INDIVIDUAL PROTECTION In The normal conditions of utilization not exhibitions to dust expect themselves or vapors. The eventual operations of cut, grinding or shattering of the glass can cause exhibitions to dust containing silicates in amorphous shape and other composed insoluble. And' timely to air the local to avoid superior exhibitions to the value you limit of threshold of the dust (TLV = 10 mg. /m³). Protection of the eyes: glasses of safety. Protection of the hands: gloves (antitaglio). Protection of the feet: shoes of safety. Protection of the respiratory roads: filter of protection for solid particles, if the concentration of dust surpasses the TLV.

9) CHEMICAL FEATURES – PHYSICAL

Appearance: transparent/translucent.

You smell: no. Density: 2.5 g. /m³.

I push of merger: > 1,800° C.

Tension of vapor: 0 hPa to 20° C.

Solubility in water: practically insoluble.

10) ESTABLISHED' AND REATTIVITA'

Stability: costing.

Incompatibility: hydrofluoric acid and strong alkali.

Polimerizzazioni: no.

It make conditional special: no.

Produced of decomposition: no in normal conditions; possible alone for T> 1,500° C.

11) INFORMATION No TOSSICOLOGICHE.

12) ECOLOGICAL INFORMATION Product inorganic, inert, that does not present environmental risks.

13) CONSIDERATION ON THE DIGESTION

The glass of difference, conveniently chosen, is totally riciclabile in the installations of production. To fine tal is timely to treat it the collection in appropriate containers dedicated. To the until of the digestion, the product can be deposited in dump, like assailable refusal to the urban solids

(D.P.R. 10/09/82 n. 915 and successive updating).

14) CONSIDERATION ON THE TRANSPORTATION:

The means of transportation should ensure the restriction of the fragments of glass.

15) INFORMATION ON THE REGULATION

Labeling: not request.

16) OTHER INFORMATION

The information supplied base themselves soul' present level of our knowledge. Their purpose is to describe our products under l' appearance of the safety and itself not prefiggono so of to guarantee decisive specific property of the same products.