AMETEK®
FOUNDRY PRODUCTS

Material Safety Data Sheet
Cerra-Flex® Filter Fabric
AMETEK FOUNDRY PRODUCTS

Prepared 11/07
Revision 2 (2/08)

Section 1 --- Chemical Product and Company Identification

Trade Name: Cerra-Flex Filter Fabric
Synonyms: None
Manufacturer: AMETEK Chemical Products Division
42 Mountain Avenue
Nesquehoning, PA 18240
Emergency Telephone No.: Chemtrec (800) 424-9300

Section 2 --- Composition/Information on Ingredients

Ingredients	CAS N0.	% Comp.	OSHA PEL	ACGIH TLV
		Base Pre-Treated Filter Cloth		
Amorphous Silica	7631-86-9	92-98	20 mppcf*	None
Phenol-Formaldehyde	9003-35-4	15-20**	None	None
Phenol (free)	108-95-2	Unknown	5 ppm	5 ppm
Formaldehyde (free)	50-00-0	Unknown	0.75 ppm	0.3 ppm (C)***
		Ceramic Coating		
Zirconium Silicate	14940-68-2	>75%	5 mg/m^3 (ZR)	5 mg/m^3 (ZR)
Amorphous Silica	7631-86-9	17%-20%	20 mppcf*	None
Dipotassium Flourescein	6417-85-2	1%-2%	None	None
Oxirane polymer with 2 ethyl hexyl dihydrogen phosphate	68460-10-6	2%-3%	None	None
Aluminum Silicate	1302-76-7	1.5%-2%	None	None
Silica Quartz	14808-60-7	<0.35%	10 mg/m^3 ÷ % SiO_2 + 2	0.025 (resp.)
Titanium Dioxide	13463-67-7	<0.2%	15 mg/m^3	10 mg/m^3
Iron Trioxide	1309-37-1	<0.04%		
Zinc	7440-66-6	<0.009%		

* OSHA PEL Table Z-3: Millions of particles per cubic foot of air.
** % of actual coating as a % of the base material.
***C = Ceiling

Section 3 --- Hazard Information

HMIS Rating: No hazard rating is available for this product.
Primary Entry Routes: Skin contact, inhalation, ingestion and eye contact

Effects of Overexposure:
Inhalation: Inhalation of airborne fibers may cause minor irritation to the mouth, nose, and throat.
Eye: May be irritating to the eyes.
Skin: May be irritating to the skin and repeated contact may cause dermatitis in sensitive individuals.
Ingestion: May cause temporary irritation of the digestive tract, but not an expected route of entry in industrial uses.

Crystalline Silica – Prolonged exposure to respirable crystalline silica may cause delayed (chronic) lung injury (silicosis, pneumoconiosis). 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. There is evidence that individuals with silicosis may also experience incidences of scleroderma (immune system disorder), tuberculosis and nephrotoxicity (kidney lesions).

Titanium Dioxide – Inhalation of excessive amounts of titanium dioxide dust are reported to produce mild and temporary respiratory tract irritations with cough, sneezing and shortness of breath. Grossly excessive and prolonged exposure may lead to lung injury (non-progressive lung fibrosis). Titanium Dioxide is considered to have a low degree of oral and dermal toxicity and to be practically non-irritating to skin.

Zirconium Silicate – Contains trace quantities of naturally occurring radioactive uranium, thorium, and radium (106-120 picocuries/gram). Over-exposure to respirable dusts containing radioactive uranium, thorium and radium may cause lung cancer. Studies of humans also suggest that repeated overexposure of zirconium compounds causes allergic skin granulomas with symptoms of rough and grainy skin.

Crystalline Silica: Symptoms may not appear until significant injury has occurred. Silicosis (onset may be from 2-30 years); cancer (unknown). Acute signs of exposure may be cough, tightness in chest, shortness of breath, eye irritation, wheezing and sputum production. Lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung, which may aggravate other pulmonary tuberculosis. Progressive, massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure

Medical Conditions Aggravated by Exposure:
Any pre-existing respiratory or pulmonary disease or condition, such as, but not limited to, bronchitis, emphysema and asthma. Individuals with silicosis are predisposed to develop tuberculosis.

Carcinogenicity:
OSHA carcinogens: Formaldehyde gas
IARC Class 1 (carcinogenic to humans): Formaldehyde gas, silica quartz
IARC Class 3 (possibly carcinogenic to humans): Phenol and amorphous silica
NTP 2 (reasonably anticipated to be a carcinogen): Formaldehyde gas

Section 4 --- First Aid Measures

Inhalation: Move the person to fresh air and support breathing as required. If symptoms (wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital for treatment.
Eye Contact: First check the victim for contact lenses and remove if present. Lift eyelids and flush immediately with flooding amounts of water for at least 15 minutes. Do not allow the victim to rub his/her eyes or keep them shut. Consult a physician or ophthalmologist if all material cannot be removed or if there is continuing irritation.

Skin Contact: Remove clothing around affected area. Rinse away loose material and wash affected area with soap and water. If there is a severe skin reaction or reddened or blistered skin, consult a physician and be prepared to transport the victim to a hospital for treatment.
Ingestion: Seek professional medical attention immediately.

Section 5 --- Fire Fighting Measures

Flash Point: N/A
Autoignition Temperature: None reported
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: Carbon Dioxide, water, foam or dry chemical as suitable for type of surrounding fire.
Unusual Fire or Explosion Hazards: While the refractory coated fabric has an upper temperature limit of 3500°F, and does not support combustion on its own, the component Flexsil fabric (if exposed by itself) may emit the combustion products of the phenolic resin, carbon monoxide, and/or carbon dioxide and other unidentified organic compounds.

Fire Fighting: Wear a self-contained breathing apparatus (SCBA) with full face piece operated in the pressure demand or positive pressure mode. Do not allow runoff from fire fighting to enter roadways or sewers.

Section 6 --- Accidental Release Measures

Use dustless methods (vacuum) and place into closeable container. Do not dry-sweep. Wear protective equipment. Dispose of according to federal, state and local regulations.

Section 7 --- Handling and Storage

Store material in a clean, dry place, and keep packaging container closed. Particular care should be taken when working with “used” material to minimize dust. If exposure limits are exceeded and or irritation is experienced, NIOSH approved respiratory protection should be worn. Wash hands and exposed body parts thoroughly after using material.

Section 8 --- Exposure Controls and Personal Protection

Ventilation – Use sufficient local exhaust and ventilation to reduce the level of respirable dust to the permissible exposure limit.
Respiratory Protection: None required when adequate ventilation conditions exist. Wear a NIOSH approved air purifying respirator if respiratory irritation is experienced.
Eye Protection – Safety glasses with side shields or chemical splash goggles should be worn to prevent eye contact. A good safety practice is to have an eyewash station readily available near the work area.
Protective Clothing – Wear appropriate chemical resistant protective clothing and chemical resistant gloves. Butyl or neoprene material should be suitable when handling this material.

Hygienic Practices – Avoid inhalation and ingestion of this material. Avoid eye contact. Avoid creating dust from the material.

Other Protective Measures and Equipment – Use dustless systems for handling, storage and cleanup 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 that has become dusty.

Section 9 --- Physical and Chemical Properties

Physical Data (Cured, Refractory Coating Only)
Boiling Point – N/A
Melting Point – N/A
Solubility in Water – Insoluble
Vapor Pressure – N/A
Vapor Density – N/A

Specific Gravity – 4.68
Color – Orange (uncured refractory color is White)
Odor – Odorless
Physical State – Solid (hard, cured refractory ceramic)

Physical Data (underlying coated fabric only)
Boiling Point – 4046°F
Melting Point – 3000°F
Solubility in Water – Insoluble
Vapor Pressure – N/A
Vapor Density – N/A
Specific Gravity – 2.2
Color – Brown
Odor – Slightly phenolic resin odor
Physical State – Mesh fabric coated with phenolic resin

Section 10 --- Stability and Reactivity

Cured Refractory Coating Only
Chemical Stability – Product is stable
Incompatibilities – None
Hazardous Polymerization – None
Hazardous Products Produced During Decomposition – Zircon will disassociate to zirconium oxide (ZrO_2) and silicon dioxide (SiO_2) when heated above 2800°F.

Mesh Fabric Only
Chemical Stability – Product is stable at normal temperature and storage conditions
Incompatibilities – Basic phosphates, hydrofluoric acid, and some oxides and hydroxides.
Hazardous Polymerization – None
Hazardous Products Produced During Decomposition – Thermal decomposition of phenolic coating may produce carbon monoxide and or carbon dioxide, as well as other unidentified organic compounds.

Section 11 --- Toxicological Information

Phenol:
Acute inhalation, mouse - LC_{50} = 177 mg/m^3
Acute dermal, rabbit - LD_{50} = 630 mg/kg

Formaldehyde (free):
Acute inhalation, cat - LC_{LO} = 400 mg/m^3/2 hours
Acute oral, rat – LD_{50} = 500 mg/k

Amorphous Silica:
Acute oral, rat – LD_{50} = 3,160 mg/kg
Acute intravenous, rat – LD_{50} = 15 mg/kg

Zirconium Compounds:
Acute oral, rat – LD_{50} = 990-2,290 mg/kg (insoluble zirconium salts)

Section 12 --- Ecological Information

Refractory Coating Only:
Zirconium and Zirconium Compounds – Zirconium is moderately toxic to green algae (96-hr EC50 2.6 mg/l), no more than slightly toxic to rainbow trout (96-hr LC50 > 20 mg/l), slightly to moderately toxic to bluegill sunfish (96-hr LC50 15-240 mg/l) and slightly toxic to practically non-toxic to fathead minnow (96-hr LC50 14-115 mg/l).

Chemical Fate Information
Zirconium and Zirconium Compounds – Zirconium is an element and will not degrade. It occurs in the environment in insoluble forms which remain unavailable to living organisms. In a bioconcentration assay in bluegill sunfish, zirconium showed a low potential bioaccumulate with a bioconcentration factor of 3.3.

Coated Fabric Only:
Phenolic Coating – Phenol may possibly be leached out of product by water. Protect all waterways. Toxicity is expected to be low based on the insolubility in water of the material.

Section 13 --- Disposal Considerations

Dispose in accordance with Federal, State and Local regulations. Zircon may contain traces of radioactive materials, such as uranium and thorium. The combined content of uranium and thorium is less than the 500-ppm limit for source material as set by the Nuclear Regulatory Commission. Zircon mineral products are not currently regulated by the EPA as hazardous wastes, but individual states and localities do have disposal regulations so it is advisable to check with them for specific disposal instructions.

Section 14 --- Transport Information

DOT Proper Shipping Name: Cerra-Flex coated Filter Fabric
DOT Hazardous Class: None
DOT UN/NA Number: None
Emergency Response Guide Number: None

Section 15 --- Regulatory Information

Component	CERCLA Hazardous Substance (Section 102)	CERCLA Reportable Quantity (Lbs.)	CWA NPDES Discharge (Section 307(a)	CAA Section 112	SARA Toxic Chemical (40 CFR 372)	SARA Extremely Hazardous Substance (40 CFR 355)
Amorphous Silica	---	---	---	---	---	---
Phenol-Formaldehyde	---	---	---	---	---	---
Phenol (free)	X	1,000	X	X	X	X
Formaldehyde (free)	X	100	X	X	X	X
Dipotassium Flourescein	---	---	---	---	---	---

Oxirane polymer with 2 ethyl hexyl dihydrogen phosphate	---	---	---	---	---	---
Zirconium Silicate	---	---	---	---	---	---
Aluminum Silicate	---	---	---	---	---	---
Silica Quartz	---	---	---	---	---	---
Titanium Dioxide	---	---	---	---	---	---

The listed components by themselves are not classified as RCRA hazardous wastes. However, certain compounds containing some components, or certain processing of some components, may produce hazardous wastes. Consult 40 CFR 261 for classification and lists of hazardous wastes.

TSCA: The chemical substances in this product are on the TSCA Section 8 Inventory

Components listed as OSHA air contaminants are found in Section 2 of this MSDS.

International Regulations as Follows:
Canadian WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

Canadian DSL: The chemical substances in this product are listed on the Domestic Substance List (DSL).

Section 16 --- Other Information

The following chemicals are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372: Phenol, formaldehyde.

THE ABOVE INFORMATION IS BELIEVED TO BE ACURATE BASED ON THE MOST CURRENT DATA AVAILABLE. AMETEK MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, AND ASSUMES NO LIABILITY RESULTING FROM ITS USE. USERS ARE ADVISED TO CONDUCT THEIR OWN TEST TO DETERMINE THE SAFETY AND SUITABILITY OF EACH PRODUCT OR PRODUCT COMBINATION FOR THEIR OWN PURPOSES. AMETEK SHALL NOT BE LIABLE FOR ANY CLAIMS, LOSSES OR DAMAGES OF ANY THIRD PARTY OR FOR LOST PROFITS OR INCIDENTAL OR CONSEQUENTAL DAMAGES.

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