MATERIAL SAFETY DATA SHEET

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Section 1: PRODUCT AND COMPANY INFORMATION

Product Name: PERMACAST® MS-10,000

Company: ACTION PRODUCTS MARKETING CORP.
P. O. BOX 555
JOHNSTON, IA 50131

EMERGENCY TELEPHONE: 800-662-6465; 515-276-9610 (24 HOURS)

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview: PERMACAST MS-10,000 is a blended cement repair mortar. It is a powder with a sandy/granular texture, which is grayish in color, and has no odor. It is not combustible or explosive. A single, short-term exposure to dust presents little or no hazard. Exposure of sufficient duration to wet material or dust or dry material on moist areas of the body, can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns.

Potential Health Effects:

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dust, dry powder or with wet mortar can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Skin Contact: Cement mortar and cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis.

Burns: Exposure of sufficient duration to wet mortar, or to dust or dry mortar on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort.

Dermatitis: Cement and mortar dust are capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking.

Irritant dermatitis is caused by the physical properties of the mortar dust and cement including alkalinity and abrasion.

Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with mortar dust or cement.

Inhalation (acute): Breathing dust may cause nose, throat or lung irritation, including choking, depending on the degree of exposure. Inhalation of high levels of mortar dust can cause chemical burns to the nose, throat and lungs.

Inhalation (chronic): Risk of injury depends on duration and level of exposure.

Silicosis: This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a seriously disabling and fatal lung disease. See Note to Physicians in Section 4 for further information.

Carcinogenicity: This product contains crystalline silica and trace amounts of hexavalent chromium which are classified by IARC and NTP as known human carcinogens.

Autoimmune Disease: Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

Tuberculosis: Silicosis increases the risk of tuberculosis.

Renal Disease: some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

Ingestion: Do not ingest mortar containing cement. Although ingestion of small quantities of mortar or cement is not known to be harmful, large quantities can cause chemical burns in the mouth, throat, stomach, and digestive tract.

Medical Conditions Aggravated by Exposure: Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) or sensitivity to hexavalent chromium can be aggravated by exposure.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

A. Chemical Composition:

Component	Percent (By Weight)	CAS Number	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	LD_{50}	LC_{50}
Portland Cement	15.0-40.0	65997-15-1	5	5	NA	NA
Silica Fume	5.0-15.0	69012-64-2	Not Established	Not Established	NA	NA
Polypropylene	<1	9003-07-0	NA	NA	NA	NA
Crystalline Silica	40.0-70.0	14808-60-7	$[(10)/(\%SiO_2+2)]$	10	NA	NA

Section 4: FIRST AID MEASURES

Eye Contact: Rinse eyes thoroughly with water for at least 15 minutes, including under ids, to remove all particles. Seek medical attention for abrasions and burns.

Skin Contact: Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposures to wet cement, cement mixtures or liquids form wet cement.

Inhalation: Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

Ingestion: Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

Note to Physician: The three types of silicosis include:

- Simple chronic silicosis - which results from long-term exposure (more

than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD).

- Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years). Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis.
- Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels.

Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method:	Non-combustible
General Hazard:	Avoid breathing dust. Wet mortar and cement are caustic.
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.
Fire fighting Equipment:	Cementitious mortar and cement poses no fire related hazard. A SCBA is recommended to limit exposures to combustion products when fighting any fire.
Combustion Products:	None.

Section 6: ACCIDENTAL RELEASE MEASURES

General:	Keep spilled material into a container. Avoid actions that cause the cement mortar dust or cement to become airborne. Avoid inhalation of mortar dust or cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet mortar and place in container. Allow material to dry or solidify before disposal. Do not wash cement mortar or cement down swage and drainage systems or into bodies of water (e.g. streams).
Waste Disposal Method:	Dispose of cement mortar according to Federal, State, Provincial and Local regulations.

Section 7: HANDLING AND STORAGE

General:	Keep mortar dry until used. Avoid dust formation. The cement contained in this product reacts alkaline when in contact with water or humidity. This may cause severe irritation of the skin or mucous membranes. The humidity of the skin or mucous membranes is enough of this reaction. Prolonged direct contact to the dry product should be avoided.
Usage:	Avoid inhalation of dusts. Avoid skin contact. Pour downwind and allow as little free fall as possible while emptying bags into equipment. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.
Housekeeping:	Avoid actions that cause the cement mortar dust and cement to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE

described in Section 8 below.

Storage: Store in a cool, dry area. Excessive moisture or pressures from stacking may cause some consolidation of powder in areas with temperatures exceeding 90 degrees Fahrenheit.

Clothing: Promptly remove and launder clothing that is dusty or wet with mortar. Thoroughly wash skin after exposure to dust or wet mortar.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits in enclosed buildings.

Personal Protective Equipment (PPE):

- Respiratory Protection: Under ordinary conditions Respiratory Protection is not generally required. Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

- Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust or wet mortar to prevent contact with eyes. Wearing contact lenses when using cement or cement mortar, under dusty conditions, is not recommended.

- Skin Protection: Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves. Remove clothing and protective equipment that becomes saturated with wet mortar and immediately wash exposed areas.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Sate:	Dry powder
Color:	Gray
Odor:	None
Vapor Pressure:	NA
Vapor Density:	NA
Evaporation Rate:	NA
pH (in water):	11-13
Boiling Point:	NA
Freezing Point:	NA
Viscosity:	None, solid.
Solubility in Water:	Negligible

Section 10: STABILITY AND REACTIVITY

Stability: Stable. Keep dry until use. Avoid contact with incompatible materials.

Incompatibility: Wet mortar and cement are alkaline and are incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Hazardous Polymerization: None
Hazardous Decomposition: None

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:	None
Local effects:	Skin contact causes irritation. May cause severe damage to the eyes.

Section 12: ECOLOGICAL INFORMATION

Possible Environmental Effects:
After hydration (a few hours or days in moist conditions) the product is stable in soil and in water, with a negligible mobility of its constituents.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal of Substance:

Dispose of waste and containers according to Federal, State, Provincial and Local regulations. Residues should be disposed of in the same manner as the substance/product.

Section 14: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

Section 15: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product contains components considered by OSHA/MSHA to be a hazardous chemical and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	This product qualifies as a hazardous substance with delayed health effects under Sections 311 and 312 of the Superfund Amendment and authorization Act of 1986.
EPRCA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
TSCA:	Some substances are on the TSCA inventory list.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) is a substance known by the State of California to cause cancer.
WHMIS/DSL:	Products containing crystalline silica and Portland cement are classified as D2A, E-corrosive material and are subject to WHMIS requirements.

Section 16: OTHER INFORMATION

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