

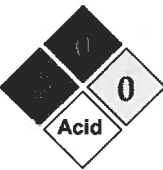

Material Safety Data Sheet

Ceramic Solutions, Inc.

MSDS: CSP-7

April 21, 2005

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NFPA	HMIS	Personal Protective Equipment						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #cccccc;">Health Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="background-color: #cccccc;">Fire Hazard</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="background-color: #cccccc;">Reactivity</td> <td style="text-align: center;">2</td> </tr> </table>	Health Hazard	3	Fire Hazard	0	Reactivity	2	
Health Hazard	3							
Fire Hazard	0							
Reactivity	2							
See Section 15								

1. Product and Company Identification

Product Identifier: CSP-7

General Use: Oxidation protective primer solution

Product Description: Inorganic phosphate solution (acid)

Manufacturer:

Ceramic Solutions, Inc.
 14035 Crenshaw Blvd., Suite #3
 Hawthorne, CA , USA 90250
 Phone: (310) 675-7970, Fax: (310) 675-5603

Emergency Telephone Number:

CHEMTREC: (800) 424-9300 (24 hours)

Date of latest revision: April 21, 2005

2. Composition/Information on Ingredients

<u>Component</u>	<u>CAS#</u>	<u>% by Wt.</u>	<u>Exposure Limits</u>
Proprietary inorganic phosphate	NA	21-25	OSHA PEL & ACGIH TLV: TWA 1 mg/m3, STEL 3 mg/m3 (Mist if formed).
Phosphoric acid	7664-38-2	10-13	OSHA PEL & ACGIH TLV: TWA 1 mg/m3, STEL 3 mg/m3 (Mist if formed).
Acetic acid	64-19-7	22-26	OSHA PEL: TWA 10 ppm, ACGIH TLV: TWA 10 ppm, STEL 15 ppm.
Aluminum nitrate	7784-27-2	3-6	OSHA PEL: NE, ACGIH TLV: TWA 2 mg (Al)/m3
Water	7732-18-5	38-42	NA

3. Hazards Identification

Emergency Overview:

Translucent liquid.
 Poison. May be fatal if swallowed. Extremely hazardous in case of eye contact (irritant). Very hazardous in case of skin contact (irritant, permeator) or inhalation (irritant).

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Potential Health Effects:

- Eye Contact:** Vapor may cause watering and irritation to eyes. Liquid contact or mist (if formed) may cause burns to mucous membranes of eyes and may cause corneal damage and blindness.
- Skin Contact:** High vapor concentrations may cause skin sensitization. Liquid or mist (if generated) may cause severe burns.
- Inhalation:** Inhalation of concentrated vapor may cause irritation and damage mucous membranes of respiratory tract. Inhalation of mist (if formed) may cause severe irritation and damage mucous membranes of respiratory tract.
- Ingestion:** Poison. May be fatal if swallowed. Corrosion of the mouth, throat and digestive tract may result if swallowed.

Medical Conditions Aggravated by Exposure:

Persons with pre-existing skin conditions, eye conditions, or impaired respiratory function may be more susceptible to the effects of exposure.

Routes of Entry: Eye contact, dermal contact, inhalation and ingestion.

Carcinogens: None known. Not a known or anticipated carcinogen by NTP and IARC.

Other: NA

4. First Aid Measures

- Eye Contact:** Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Check for and remove any contact lenses. Get immediate medical attention.
- Skin Contact:** Remove any contaminated clothing. Wash thoroughly with soap and water. Neutralize exposed skin with a dilute solution of sodium bicarbonate. Get medical attention if irritation develops or persists. Wash contaminated clothing before reusing.
- Inhalation:** Remove to fresh air. Get medical attention if ill effects persist. If breathing is difficult, administer oxygen. Loosen tight clothing such as a collar, tie, belt or waistband. If victim is not breathing, perform mouth-to-mouth resuscitation. Get immediate medical attention.
- Ingestion:** Do NOT induce vomiting. Have conscious victim drink large quantities of water or milk. Never give anything by mouth to an unconscious person. If vomiting occurs, give more fluids, preferably milk. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Warning: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the ingested material is toxic or corrosive. Get immediate medical attention.

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5. Fire Fighting Measures

Flammable Properties:

Flash Point: Not flammable

Auto-Ignition Temperature: NA

Flammable Limits: NA

Sensitivity to Mechanical Impact: No

Sensitivity to Static Discharge: No

Hazardous Decomposition Products:

Carbon dioxide, carbon monoxide, phosphorous oxides and nitrogen oxides may form when heated to decomposition. May also release toxic and irritating vapors.

Fire Hazards in the Presence of Various Substances: NA

Extinguishing Media:

Water, dry chemical, foam or carbon dioxide extinguishing media as appropriate for the quantity and type of combustibles present. Use water spray to keep fire exposed containers cool.

Fire Fighting Procedures:

Fire fighters should wear full fire-fighting turnout gear (full bunker gear) and self-contained breathing apparatus (SCBA). Proper eye and skin protection should also be used. Use water spray to keep fire exposed containers cool and to flush any spillage away from fire or contact with metals. Move containers from fire area if without risk.

Unusual Fire Hazards:

Contact with metals may produce hydrogen gas.

6. Accidental Release Measures

Containment/Clean-up:

Small Spill: Dilute with water and mop up or absorb with dry earth, sand, vermiculite or other inert dry material and place in an appropriate waste disposal container. Neutralize with a dilute solution of sodium bicarbonate. Observe all personal protection equipment recommendations described in Section 8. Insure proper ventilation is available.

Large Spill: Determine whether to evacuate or isolate the area according to your local emergency plan. Stop leak if without risk. Observe all personal protection equipment recommendations described in Sections 5 and 8. Ventilate area of leak or spill. Recover liquid in an appropriate container when possible or absorb

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with dry earth, sand, vermiculite or other inert dry material. Prevent entry into sewers or confined areas; dike if needed. Neutralize with sodium bicarbonate. Dispose of saturated absorbent or cleaning materials appropriately.

7. Handling and Storage

Handling:

Wear personal protective equipment described in Section 8. Use only in well ventilated area. Keep container closed when not in use. Avoid contact with eyes and skin. Avoid breathing vapors. Do not ingest.

Storage:

Store upright in original container. Keep container closed when not in use. Store at room temperature. **Do not freeze.**

8. Exposure Controls/Personal Protection

Engineering Controls:

Use local exhaust ventilation to control emissions near the source and keep airborne concentrations of vapors below their respective threshold limit values. Provide mechanical ventilation of confined spaces. Have showers and eyewash stations accessible.

Personal Protection:

Eye Protection: Use splash goggles.

Skin Protection: Wear protective clothing such as a lab coat or full protective suit to prevent contamination of clothing and skin. Wear chemical protective gloves of neoprene or nitrile. Wash after use. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse.

Respiratory Protection: If concentrations of vapors may exceed threshold limit values, use NIOSH approved respiratory protection equipped with filters for acid vapors. If mist is generated, NIOSH approved respiratory protection with filters for acid vapors and mists is strongly recommended.

Personal Protection in Case of a Large Spill:

Eye Protection: Use full face respirator.

Skin Protection: Wear protective clothing such as a full protective suit to prevent contamination of clothing and skin. Wear chemical protective gloves of neoprene or nitrile. Wear boots. Wash when finished. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse.

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Respiratory Protection: Use NIOSH approved respiratory protection equipped with filters for acid vapors, self-contained breathing apparatus (SCBA) or other supplied air respirator.

Exposure Limits:

Proprietary inorganic Phosphate OSHA PEL & ACGIH TLV: TWA 1 mg/m³, STEL 3 mg/m³ (Mist if formed).

Phosphoric acid OSHA PEL & ACGIH TLV: TWA 1 mg/m³, STEL 3 mg/m³ (Mist if formed).

Acetic acid OSHA PEL: TWA 10 ppm, ACGIH TLV: TWA 10 ppm, STEL 15 ppm.

Aluminum nitrate OSHA PEL: NE, ACGIH TLV: TWA 2 mg (Al)/m³

9. Physical and Chemical Properties

Physical Form: Liquid Color: Translucent white

Odor: Acetic acid Density (g/cc): 1.3

Boiling Point (°F): ~100°C Freezing Point (°F): <0°C

Vapor Pressure @68°F: 16 mm Hg Vapor Density: ND

Solubility in Water: Soluble Solubility in Organic Solvent: ND

Reaction with Water: None pH: 0-1.0

% Volatile by Volume: 87-92% Other comments: Reacts with strong acids or bases.

Volatile Organic Content (VOC): ~640g/l Less Water (~25% by weight)

10. Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will not occur.

Conditions to Avoid: Corrosive in the presence of magnesium, steel, aluminum, zinc and copper. Slightly corrosive in the presence of stainless steel. May produce hydrogen gas in reaction with metals.

Materials to Avoid: Avoid contact with metals and any material sensitive to acid solutions. Reactive or incompatible with organic materials, alkalis, metals, reducing agents and combustible materials.

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Hazardous Decomposition Products:

Carbon dioxide, carbon monoxide, phosphorous oxides and nitrogen oxides may form when heated to decomposition. May also release toxic and irritating vapors.

11. Toxicological Information

Routes of Entry: Dermal contact, eye contact, inhalation and ingestion.

Toxicity to Animals:

Phosphoric acid: Acute oral toxicity (LD₅₀): 1,530 mg/kg (Rat).
Acute dermal toxicity (LD₅₀): 2,740 mg/kg (Rabbit).

Acetic acid: Acute oral toxicity (LD₅₀): 3,310 mg/kg (Rat).
Acute dermal toxicity (LD₅₀): 1.06 g/kg (Rabbit).
Acute toxicity of the vapor (LC₅₀): 5,620 ppm 1 hour (Mouse).

Chronic Effects on Humans:

Toxic to lungs and mucous membranes.

Other Toxic Effects on Humans:

Poison. May be fatal if swallowed. Extremely hazardous in case of eye contact (irritant). Very hazardous in case of skin contact (irritant, permeator) or inhalation (irritant).

Carcinogens:

None known. Not a known or anticipated carcinogen by NTP and IARC.

12. Ecological Information

Ecotoxicity:

This material is expected to be toxic to aquatic life. Acetic acid is expected to be slightly toxic to aquatic life. The LC₅₀/96-hour values for fish are between 10 and 100 mg/l (acetic acid in water).

Environmental Fate:

When released into the air, acetic acid may be moderately degraded by reaction with photochemically produced hydroxyl radicals and is expected to have a half-life between 10 and 30 days. When released into water, acetic acid is expected to readily biodegrade and is expected to have a half-life between 1 and 10 days. When released into the soil, acetic acid is expected to readily biodegrade and is not expected to significantly bioaccumulate. The proprietary inorganic phosphate and phosphoric acid may leach into groundwater. Its acidity may be readily reduced by natural water hardness minerals. The phosphate however, may persist indefinitely.

13. Disposal Considerations

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Unused material for disposal should be handled as hazardous waste. Disposal should be made in accordance with federal, state and local regulations.

14. Transport Information

DOT Shipping Name: Corrosive Liquids n.o.s. (Contains Acetic Acid) DOT Hazard Class: 8

DOT Label(s): Corrosive UN Number: UN1760

Packing Group: II Placards: Corrosive

IATA: Corrosive Liquids n.o.s., (Contains Acetic Acid), 8, UN1760, II.

15. Regulatory Information

Federal and State Regulations:

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings:

Section 302 Extremely Hazardous Substances: None

Section 304 CERCLA Hazardous Substances:

<u>Component</u>	<u>CAS #</u>	<u>Wt. %</u>
Acetic Acid	64-19-7	22-26
Phosphoric Acid	7664-38-2	10-13

Section 312 Hazard Class:

Acute:	Yes
Chronic:	Yes
Fire:	No
Pressure:	No
Reactive:	No

Section 313 Toxic Chemical Notification and Release Reporting: Phosphoric Acid

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Supplemental State Compliance Information:

California:

Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) warnings: None

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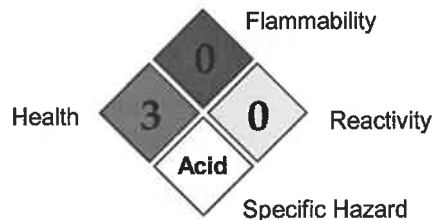
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HMIS (U.S.A.):

Health Hazard	3
Fire Hazard	0
Reactivity	2
Personal Protection	C

National Fire Protection Association (U.S.A.):



Protective Equipment:



Splash Goggles



Lab Coat



Gloves

16. Other Information

Prepared by: Ceramic Solutions, Inc.

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is thereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

Abbreviations:

ACGIH	= American Conference of Governmental Industrial Hygienists
CAS	= Chemical Abstracts Service
CERCLA	= Comprehensive Environmental Response, Compensation and Liability Act
EPA	= Environmental Protection Agency
HMIS	= Hazardous Material Information System
IARC	= International Agency for Research on Cancer
IATA	= International Air Transport Association
NA	= not applicable
ND	= not determined
NE	= none established
NFPA	= National Fire Protection Association
NIOSH	= National Institute for Occupational Safety and Health
NTP	= National Toxicology Program
OSHA	= Occupational Safety and Health Administration
PEL	= permissible exposure limit
ppm	= parts per million
SARA	= Superfund Amendments and Reauthorization Act
STEL	= short term exposure limit
TLV	= threshold limit value
TSCA	= Toxic Substances Control Act
TWA	= time weighted average