



# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 1 of 9

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;">2</td> </tr> <tr> <td style="background-color: #cccccc;">Fire Hazard</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="background-color: #cccccc;">Reactivity</td> <td style="text-align: center;">1</td> </tr> </table>	Health Hazard	2	Fire Hazard	3	Reactivity	1	
Health Hazard	2							
Fire Hazard	3							
Reactivity	1							
		See Section 15						

### 1. Product and Company Identification

Product Identifier: **CS1800D**

General Use: Oxidation protective paint

Product Description: Silicone resin based paint

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>Hazardous Component</u>	<u>CAS#</u>	<u>% by Wt.</u>	<u>Exposure Limits</u>
A proprietary mixture of metals, metal carbides, borides, silicides and oxides.	NA	65-75	OSHA PEL: TWA 5 mg/m <sup>3</sup> ACGIH TLV: TWA 5 mg/m <sup>3</sup> , STEL 10 mg/m.
Xylene	1330-20-7	13-19	OSHA PEL and ACGIH TLV: TWA 100 ppm, STEL 150 ppm.
Toluene	108-88-3	7-11	OSHA PEL: TWA 100 ppm, STEL 150 ppm, ACGIH TLV: TWA-skin 50 ppm, STEL NE.
Dimethyl, diphenyl, methyl, phenyl silicone resin	2863-33-3	7-11	NE
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)	OSHA PEL: TWA 1 ppm, STEL 5 ppm. ACGIH TLV: TWA- skin 0.5 ppm, STEL 2.5 ppm

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). Benzene is listed by IARC, NTP, OSHA and ACGIH as a carcinogen.

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 2 of 9

### 3. Hazards Identification

#### Emergency Overview:

Grey liquid slurry, Flammable.  
Hazardous in case of eye contact (irritant), skin contact (irritant) or inhalation (irritant). Harmful if swallowed.

#### Potential Health Effects:

**Eye Contact:** Vapor may cause eye irritation. Direct contact may cause severe eye irritation.

**Skin Contact:** No significant irritation expected from a single short-term exposure. Repeated or prolonged contact may cause defatting and drying of skin, which may result in skin irritation and dermatitis.

**Inhalation:** Vapor may irritate nose and throat. Overexposure by inhalation may cause headache, drowsiness, dizziness, confusion or loss of coordination. Overexposure by inhalation may injure the following organ(s): blood, kidneys, lungs, liver, nervous system.

**Ingestion:** Harmful if swallowed. Causes irritation of the mouth, throat and stomach. Causes vomiting, nausea and diarrhea. Aspiration of liquid while vomiting may injure lungs seriously. Repeated ingestion or swallowing large amounts may injure internally. Toxic to blood, kidneys, lungs, liver, nervous system and mucous membranes.

#### Medical Conditions Aggravated by Exposure:

May aggravate liver, kidney, respiratory, dermal ailments, and central nervous system disorders.

#### Routes of Entry:

Dermal contact, eye contact, inhalation and ingestion.

#### Carcinogens:

<u>Component</u>	<u>CAS #</u>	<u>Wt. %</u>	
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)	IARC Group 1, NTP, OSHA, ACGIH

#### Other:

Thermal breakdown of this product can generate formaldehyde at approximately 300°F (149°C) and above. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and a potential cancer hazard. This product may form a small amount of diborane upon exposure to acidic water. Diborane is a toxicant.

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 3 of 9

### 4. First Aid Measures

**Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention.

**Skin Contact:** Remove from skin. Wash immediately and thoroughly with soap and water. Get medical attention if irritation or other ill effects develop or persist. Cover any irritated skin with an emollient. Wash contaminated clothing before reusing.

**Inhalation:** Remove to fresh air. Get medical attention if ill effects persist. In case of serious inhalation, evacuate to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If victim is not breathing, perform mouth-to-mouth resuscitation. Get medical attention.

**Ingestion:** Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Get immediate medical attention.

### 5. Fire Fighting Measures

#### Flammable Properties:

**Flash Point:** 50°F (10°C) by Pensky-Martens Closed Cup (PMCC)

**Auto-Ignition Temperature:** 997°F (536°C)

**Flammable Limits:** Lower Flammable Limit: 1.2 % Upper Flammable Limit: 7.0 %

**Sensitivity to Mechanical Impact:** No

**Sensitivity to Static Discharge:** Sensitivity to static discharge is expected; material has a flash point below 200°F.

#### Hazardous Decomposition Products:

Thermal breakdown of this product during fire may evolve the following hazardous decomposition products: Carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide, and formaldehyde.

#### Fire Hazards in the Presence of Various Substances:

Flammable in the presence of open flames and sparks.

#### Extinguishing Media:

On small fires use carbon dioxide (CO<sub>2</sub>), dry chemical or dry sand. On large fires use dry chemical or foam. **Do NOT use water.**

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 4 of 9

### Fire Fighting Procedures:

Flammable liquid and solids. Keep personnel removed from and upwind of fire. For large fires, wear full fire-fighting turn-out gear (full bunker gear), and self-contained breathing apparatus (SCBA).

### Unusual Fire Hazards:

Vapors are heavier than air and may travel to a source of ignition and flash back.

## 6. Accidental Release Measures

### Containment/Clean-up:

**Small Spill:** Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large Spill:** Flammable liquid. Keep away from heat. Keep away from/remove sources of ignition. 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. Absorb with dry earth, sand, vermiculite or other non-combustible material. Prevent entry into sewers or confined areas; dike if needed. Final cleaning may require use of solvents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local state, and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal state and local laws and regulations are applicable.

## 7. Handling and Storage

### Handling:

Wear personal protective equipment described in Section 8, including protective clothing, NIOSH approved respiratory protection equipped with filters for organic vapors and particulates, splash goggles and nitrile gloves. 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. Flammable liquid. Keep away from sources of ignition.

### Storage:

Store upright in original container. Keep container closed when not in use. **Store under refrigeration.**

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 5 of 9

### 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. Use explosion-proof ventilation equipment. Have showers and eyewash stations accessible.

#### Personal Protection:

**Eye Protection:** Use splash goggles or full face respirator.

**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:** Use NIOSH approved respiratory protection equipped with filters for organic vapors and particulates.

#### 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 after use. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse.

**Respiratory Protection:** Use self-contained breathing apparatus (SCBA) or other supplied air respirator.

#### Exposure Limits:

A proprietary mixture of metals, metal carbides, borides, and oxides: OSHA PEL: TWA 15 mg/m<sup>3</sup> (total), 5 mg/m<sup>3</sup> (respirable), ACGIH TLV: TWA 10 mg/m<sup>3</sup>.

**Xylene:** OSHA PEL and ACGIH TLV: TWA 100 ppm, STEL 150 ppm.

**Toluene:** OSHA PEL: TWA 100 ppm, STEL 150 ppm, ACGIH TLV: TWA-skin 50 ppm, STEL NE.

**Benzene:** OSHA PEL: TWA 1 ppm, STEL 5 ppm. ACGIH TLV: TWA-skin 0.5 ppm, STEL 2.5 ppm.

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 6 of 9

### 9. Physical and Chemical Properties

<u>Physical Form:</u>	Liquid slurry	<u>Color:</u>	Grey
<u>Odor:</u>	Solvent odor	<u>Density (g/cc):</u>	1.8
<u>Boiling Point (°F):</u>	ND	<u>Freezing Point (°F):</u>	ND
<u>Vapor Pressure @77°F:</u>	ND	<u>Vapor Density:</u>	ND
<u>Solubility in Water:</u>	Negligible	<u>Solubility in Organic Solvent:</u>	Soluble in xylene and toluene.
<u>Reaction with Water:</u>	Slight	<u>pH:</u>	NA
<u>% Volatile by Volume:</u>	50-60	<u>Other comments:</u>	Reacts with strong acids or bases.
<u>Volatile Organic Content (VOC):</u> ~470g/l			

### 10. Stability and Reactivity

<u>Stability:</u>	Stable
<u>Hazardous Polymerization:</u>	Will not occur.
<u>Conditions to Avoid:</u>	Keep away from heat, flames and spark producing equipment.
<u>Materials to Avoid:</u>	Avoid contact with strong acids or bases.
<u>Hazardous Decomposition Products:</u>	Carbon oxides and traces of incompletely burned carbon compounds, silicon dioxide, and formaldehyde.

### 11. Toxicological Information

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

#### Toxicity to Animals:

<u>Xylene:</u>	Acute oral toxicity (LD <sub>50</sub> ): 4,300 mg/kg (Rat). Acute toxicity of the vapor (LC <sub>50</sub> ): 5,000 ppm 4 hour(s) (Rat).
<u>Toluene:</u>	Acute oral toxicity (LD <sub>50</sub> ): 5,000 mg/kg (Rat). Acute dermal toxicity (LD <sub>50</sub> ): 12,124 mg/kg (Rabbit). Acute toxicity of the vapor (LC <sub>50</sub> ): 49,000 ppm 4 hour(s) (Rat).
<u>Benzene:</u>	Acute oral toxicity (LD <sub>50</sub> ): 3,306 mg/kg (Rat). Acute dermal toxicity (LD <sub>50</sub> ): None Found Acute toxicity of the vapor (LC <sub>50</sub> ): 10,000 ppm 7 hour(s) (Rat).

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 7 of 9

### Chronic Effects on Humans:

Toxic to blood, kidneys, lungs, nervous system, liver and mucous membranes.

### Other Toxic Effects on Humans:

Harmful in case of ingestion. Hazardous in case of skin contact (irritant, permeator) or inhalation.

### Carcinogens:

<u>Component</u>	<u>CAS #</u>	<u>Wt. %</u>	
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)	IARC Group 1, NTP, OSHA, ACGIH

## 12. Ecological Information

Ecotoxicity: NA

Chemical Fate Information: NA

Persistence and degradation: NA

## 13. Disposal Considerations

Containers, which have been emptied, may still contain flammable liquid and/or vapor. Disposal should be made in accordance with federal, state and local regulations. Incineration recommended in approved incinerator according to federal, state and local regulations.

## 14. Transport Information

DOT Shipping Name: Resin Solution, *Flammable*      DOT Hazard Class: 3

DOT Label(s): Flammable Liquid      UN Number: UN1866

Packing Group: II      Placards: Flammable

IATA: Resin Solution, *Flammable*, 3, UN1866, 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

# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 8 of 9

**Section 304 CERCLA Hazardous Substances:**

<u>Component</u>	<u>CAS #</u>	<u>Wt. %</u>
Xylene	1330-20-7	13-19
Toluene	108-88-3	7-11
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)

Section 312 Hazard Class:	Acute:	Yes
	Chronic:	Yes
	Fire:	Yes
	Pressure:	No
	Reactive:	No

**Section 313 Toxic Chemical Notification and Release Reporting:**

Xylene	1330-20-7	13-19
Toluene	108-88-3	7-11
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)

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

Supplemental State Compliance Information:

California:

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer.

Toluene	108-88-3	7-11
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)

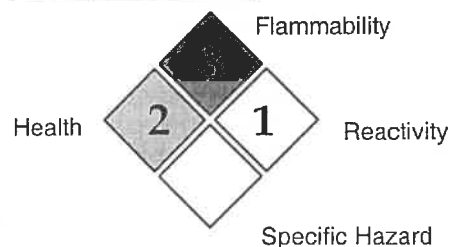
Warning: This product contains the following chemical listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (proposition 65) as being know to cause birth defects or other reproductive harm.

Toluene	108-88-3	7-11
Benzene	71-43-2	<0.16 (Impurity, 0.02 typical)

HMIS (U.S.A.):

Health Hazard	(2)
Fire Hazard	(3)
Reactivity	(1)
Personal Protection	(h)

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





# Material Safety Data Sheet

## Ceramic Solutions, Inc.

MSDS: CS1800D

April 21, 2005

Page 9 of 9

### Protective Equipment:



Splash Goggles



Lab Coat



Vapor Respirator



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

