



# MATERIAL SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** HOLLOW CERAMIC SPHERE

**Product No.:** G-HCS-000500

**Manufacturer Name:**  
SOLUTION & NANO CO.  
10013 Foxboro Cir. San Ramon  
California 94583 USA  
Tel. +1 (925) 360-99-55 Fax; +1 (925) 556-04-50

**Emergency Telephone:**  
+7 495 484-6111

**Intended Use:** Coatings, Compounding and production of plastic products, Construction/building materials industry, Oilfield industry and highway technologies, Paint, Use by service companies in the oilfield industry

## 2 HAZARDS IDENTIFICATION

### Emergency Overview

**Physical State:** Powder

**Color:** Gray-white

**Odor:** None

Low hazard for usual industrial or commercial handling by trained personnel.

### Potential Health Effects

**Inhalation:** High concentrations of dust may irritate throat and respiratory system and cause coughing. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

**Eye Contact:** May cause irritation through mechanical abrasion. May cause redness and pain.

**Skin Contact:** May cause irritation through mechanical abrasion. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed. Symptoms include nausea, vomiting, and diarrhea.

**Chronic Health Effects:** Prolonged or repeated inhalation of product in dry form may cause lung injury, including silicosis. The effects might be delayed.

**Target Organ(s):** | Lung |

**Potential Physical / Chemical Effects:** This product is not flammable.

**OSHA Regulatory Status:** Under some use conditions, this material may be considered to be hazardous in

accordance with OSHA 29 CFR 1910.1200.

**Environment:** The product is not expected to be hazardous to the environment.

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

**General Information:** The product is a ceramic material compounded of SiO<sub>2</sub>-58%, TiO<sub>2</sub> - 1%, Al<sub>2</sub>O<sub>3</sub> -26%, Fe<sub>2</sub>O<sub>3</sub>-6%, CaO-4%, MgO-2%, K<sub>2</sub>O-1%, Na<sub>2</sub>O-1%, P<sub>2</sub>O<sub>5</sub> - 1% (by analysis).

### 4 FIRST AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye Contact:** Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Do not rub eye. Get medical attention if irritation develops and persists.

**Skin Contact:** Wash skin with soap and water. Get medical attention promptly if symptoms persist or occur after washing.

**Ingestion:** Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort continues.

**Note to Physician:** Treat symptomatically.

### 5 FIRE-FIGHTING MEASURES

**Extinguishing Media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable Extinguishing Media:** Not applicable.

**Special Fire Fighting Procedures:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Unusual Fire & Explosion Hazards:** None known.

**Hazardous Combustion Products:** Aluminum oxides, Magnesium oxides, Silicone oxides

**Protective Measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

**Flammability Class:** NFPA Rating Fire = 0. Materials that will not burn.

### 6 ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

**Spill Cleanup Methods:** Collect dust using a vacuum cleaner equipped with HEPA filter. If not possible, gently moisten dust with water fog before it is collected with shovel, broom or the like. Collect in approved containers and seal securely. For waste disposal, see section 13 of the MSDS.

**Environmental Precautions:** No specific precautions.

**Notification Procedures:** In the event of accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Mechanical ventilation may be required. Use work methods which minimize dust production. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Keep the workplace clean.

**Storage:** Store in closed original container in a dry place. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Limits:** No exposure limits noted for ingredient(s) on ACGIH, OSHA and WEEL lists. However, for dusty conditions, OSHA and ACGIH have adopted an 8-hour TWA of 15 mg/m<sup>3</sup> (total dust) and 5 mg/m<sup>3</sup> (respirable fraction) and of 10 mg/m<sup>3</sup> (inhalable fraction) and 3 mg/m<sup>3</sup> (respirable fraction) for insoluble particulates not otherwise specified, respectively. Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.

**Engineering Controls:** If dust or fumes are generated during use, use local exhaust in combination with general ventilation as necessary to remove fumes/dust from the workers' breathing zone and to ensure exposures do not exceed applicable limits.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: High-efficiency particulate respirator. Seek advice from supervisor on the company's respiratory protection standards.

**Eye Protection:** Risk of contact: Wear approved safety goggles.

**Hand Protection:** It is a good industrial hygiene practice to minimize skin contact. Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Color:** Gray-white

**Odor:** None

**Odor Threshold:** Not applicable.

**Physical State:** Powder

**pH:** Not applicable

**Melting Point:** 1400°C (2552°F)

**Freezing Point:** No data available.

**Boiling Point:** 1750°C (3182°F)

**Flash Point:** Not applicable.  
**Evaporation Rate:** Not applicable.  
**Flammability Limit - Upper (%):** Not applicable.  
**Flammability Limit - Lower (%):** Not applicable.  
**Vapor Pressure:** Not applicable.  
**Vapor Density (Air=1):** Not applicable.  
**Specific Gravity:** 2.45  
**Solubility in Water:** No data available.  
**Solubility (Other):** No data available.  
**Partition Coefficient (n-Octanol/water):** Not applicable.  
**Autoignition Temperature:** Not applicable.  
**Decomposition Temperature:** No data available.  
**Particle Size:** 0 micron - 500 micron  
**Viscosity:** Not applicable.  
**Bulk Density:** 0.32 g/cm<sup>3</sup> - 0.37 g/cm<sup>3</sup>

<b>10</b>	<b>STABILITY AND REACTIVITY</b>
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**Stability:** This product is stable under expected conditions of use.

**Conditions to Avoid:** None in particular.

**Incompatible Materials:** Strong acids. Strong bases. Oxidizing agents.

**Hazardous Decomposition Products:**

At Elevated Temperatures:	Aluminum oxides, Magnesium oxides, Silicone oxides
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<b>11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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**Listed Carcinogens:** None.

**Product Information**

**Acute Toxicity:** May cause mechanical irritation of skin and eyes. High concentrations of dust may irritate throat and respiratory system and cause coughing.

**Chronic Toxicity:** Prolonged or repeated inhalation of product in dry form may cause lung injury, including silicosis. The effects might be delayed.

<b>12</b>	<b>ECOLOGICAL INFORMATION</b>
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**Ecotoxicity:** The product is not expected to be hazardous to the environment.

**Mobility:** Expected to partition to sediment and wastewater solids.

**Persistence and Degradability:** No data available.

**Bioaccumulation Potential:** No data available.

<b>13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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**General Information:** Dispose of waste and residues in accordance with local authority requirements.

**Disposal Methods:** No specific disposal method required.

**RCRA Information:** Not regulated.

**Container:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

<b>14</b>	<b>TRANSPORT INFORMATION</b>
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**DOT** Not regulated.

**TDG** Not regulated.

**IATA** Not regulated.

**IMDG** Not regulated.

<b>15</b>	<b>REGULATORY INFORMATION</b>
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**Canadian Controlled Products Regulations:** This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS Classification:** This is not a WHMIS controlled product.

**Mexican Dangerous Statement:** Under some use conditions, this material may be considered to be hazardous in accordance with Mexican regulations.

**Inventory Status:** All ingredients are either listed or exempt from listing on EINECS, DSL or TSCA.

**US Regulations**

**CERCLA Hazardous Substance List (40 CFR 302.4):** Not regulated.

**SARA Title III**

**Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A):** Not regulated.

**Section 311/312 (40 CFR 370):**

Acute (Immediate)     Chronic (Delayed)     Fire     Reactive     Pressure Generating

**Section 313 Toxic Release Inventory (40 CFR 372):** Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**  
Not regulated.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):** Not regulated.

**Drug Enforcement Act:** Not regulated.

**TSCA**

**TSCA Section 4(a) Final Test Rules & Testing Consent Orders:** Not regulated.

**TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E):** Not

regulated.

**TSCA Section 5(e) PMN-Substance Consent Orders:** Not regulated.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** Not regulated.

### State Regulations

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** Not regulated.

**Massachusetts Right-To-Know List:** Not regulated.

**Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)):** Not regulated.

**Minnesota Hazardous Substances List:** Not regulated.

**New Jersey Right-To-Know List:** Not regulated.

**Pennsylvania Right-To-Know List:** Not regulated.

**Rhode Island Right-To-Know List:** Not regulated.

<b>16</b>	<b>OTHER INFORMATION</b>
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### HAZARD RATINGS

	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Instability</b>	<b>Special Hazard</b>
<b>NFPA</b>	1	0	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	<b>Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>	<b>Personal Protection</b>
<b>HMIS</b>	1*	0	0	E

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe \*- Chronic Health Effect

Personal Protection codes: E - Safety Glasses, Gloves, Dust Respirator

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

**Issue Date:** 04-Dec-2007

**Supersedes Date:**

**SDS No.:** 1008422

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.