

MATERIAL SAFETY DATA SHEET

1. Product Information

Product Name: Microspheres
Ceramic Microspheres CAS Number: 66402-68-4 95 - 99.9 %
Quartz Silica CAS Number 14808-60-7 0.1 - 5.0%

2. Physical Data

Boiling Point: N/A Vapor Pressure: N/A Vapor Density: N/A Evaporation Rate: N/A Solubility in Water: nil
Sp. Gravity: 0.65-0.95 gm/l Percent Volatile: N/A PH: N/A Viscosity: N/A Melting Point: Not Determined
Appearance and Odor: Solid, low density fine powder (between 10um and 450 um diameter), gray to white color, odorless

3. Fire and Explosion Hazard Data

Flash Point: N/A Flammable Limits - LEL: N/A Flammable Limits UEL: N/A Autoignition Temperature: N/A
Extinguishing Media: Non-combustible. Choose material suitable for surrounding fire.
Special Fire Fighting Procedures: Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.
Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.
NFPA Hazard Codes: Health - 1, Fire - 0, Reactivity: 0, Unusual Reaction Hazard: None

4. Reactivity Data

Stability: Stable Incompatibility - Materials to Avoid: None known Hazardous Polymerization: Will not occur Hazardous
Decomposition Products: None known

5. Environmental Information

Spill Response: Observe precautions from other sections. Ventilate area. Collect spilled material. Collect spill using a vacuum cleaner with absolute High Efficiency Particulate Air filter. CAUTION!! A vacuum cleaner could be source of ignition. Clean up residue. Place in a closed container. Avoid contact with water.
Recommended Disposal: Dispose of waste product in a sanitary landfill. Disposal alternative: Incinerate in an industrial or commercial facility in the presence of a combustible material. Disposal alternative: reclaim if possible.
Environmental Data: Not determined.
Regulatory Information: Volatile Organic Compounds: N/A VOC Less H2) & Exempt Solvents: N/A Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous). This product is an article as defined by TSCA, EINECS, CDSL, MITI, KECI, AICS, PICCS and CICS regulations, and is exempt from chemical inventory listing requirements. Korea and China also require product registration.
EPCRA Hazard Class: Fire Hazard: No Pressure: No Reactivity: No Acute: Yes Chronic: Yes

6. Suggested First Aid

Eye Protection: Avoid eye contact. The following should be worn alone or in combination, as appropriate, to prevent eye contact: Wear vented goggles.
Skin Protection: Avoid prolonged or repeated skin contact. Wear appropriate gloves when handling this material. A pair of gloves made from the following material(s) are recommended: neoprene, nitrile rubber, polyethylene/polyvinylidene chloride (Saranex). Use one or more of the following personal protection items as necessary to prevent skin contact: apron, coveralls.
Ventilation Protection: Provide appropriate local exhaust ventilation at transfer points. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.
Respiratory Protection: Avoid breathing dust. Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: half-mask dust and mist respirator, full-face dust and mist respirator.

7. Precautionary Information

Prevention of Accidental Ingestion: Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.
Recommended Storage: Keep container dry. Keep container closed when not in use.
Fire and Explosion Avoidance: Nonflammable
Exposure Limits

Ingredients	Value	Unit	Type	Auth	Skin*
Ceramic Microspheres	None	None	None	None	
Quartz Silica	0.1	m/m3	TWA	OSHA	
		Respirable			
Quartz Silica	0.05	m/m3	TWA	OSHA	
		Respirable			

*Skin Notation: Listed substances indicated with "Y" under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Behicles can alter skin absorption.

Source of Exposure Limit Data: ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration

8. Health Hazard Data

Eye Contact: Mechanical eye irritation: signs/ symptoms can include irritation, redness, scratching of the cornea and tearing.
Skin Contact: Mechanical skin irritation: signs/symptoms can include itching and redness.
Inhalation: Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing. While the following effects are associated with one or more of the individual ingredients in this product and are required to be included on the MSDS by the U.S. OSHA hazard communication standard, they are not expected effects during foreseeable use of this product.
Lung Damage: signs/symptoms can include coughing, difficulty breathing, wheezing, tightness in chest, congestion, and coughing up of blood.
If Swallowed: Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.