



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Glass Bubbles, Types K and S
MANUFACTURER: 3M
DIVISION: Energy and Advanced Materials Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 06/19/12
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Product Use:

Intended Use: Lightweight Filler

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Soda Lime Borosilicate Glass	65997-17-3	97 - 100
Synthetic Crystalline-Free Silica Gel	112926-00-8	< 3

Boron included in Soda Lime Borosilicate Glass (CAS number 7440-42-8) at 1-4% by Wt.

Synthetic amorphous silica CAS number for TSCA Inventory is 7631-86-9

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Low density fine powder (< 100 microns)

Odor, Color, Grade: white, odorless

General Physical Form: Solid

Immediate health, physical, and environmental hazards:

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>

5.2 EXTINGUISHING MEDIA

Non-combustible. Choose material suitable for surrounding fire. Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air.

6.2. Environmental precautions

Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Clean up residue.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. For industrial or professional use only. Avoid breathing of airborne material. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Store under normal warehouse conditions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation. Provide local exhaust ventilation at transfer points. Conduct air monitoring to determine adequacy of ventilation. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields

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8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Neoprene

Nitrile Rubber

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8.2.3 Respiratory Protection

Avoid breathing of dust.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or full facepiece air-purifying respirator suitable for particulates

. Select and use respiratory protection to prevent an inhalation exposure based on the results of an exposure assessment. Consult with

your respirator manufacturer for selection of appropriate types of respirators.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Soda Lime Borosilicate Glass	Manufacturer determined	TWA, as dust	10 mg/m3	
SILICA, AMORPHOUS	OSHA	TWA concentration	0.8 mg/m3	
SILICA, AMORPHOUS	OSHA	TWA	20 millions of particles/cu. ft.	

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Guideline
- OSHA: Occupational Safety and Health Administration
- AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Low density fine powder (< 100 microns)
Odor, Color, Grade:	white, odorless
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Density	0.12 g/ml - 0.63 g/ml
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	0.12 - 0.63
Melting point	<i>No Data Available</i>
Solubility in Water	Negligible
Evaporation rate	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Kow - Oct/Water partition coef	<i>Not Applicable</i>
Percent volatile	< 0.5 % weight
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

None known

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

None known.

Condition

Not Specified

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Reclaim if feasible. For quantities <100 lbs. (50kg): dispose of waste product in a sanitary landfill. For larger quantities:

Dispose of waste product in a facility permitted to accept chemical waste. As a disposal alternative, incinerate in an industrial or commercial facility. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

41-4202-4323-4, 70-0701-1952-7, 70-0701-8213-7, 70-0701-9409-0, 70-0701-9423-1, 70-0703-2625-4, 70-0703-2736-9, 70-0703-2737-7, 70-0703-2749-2, 70-0703-2815-1, 70-0703-2816-9, 70-0703-2817-7, 70-0703-3031-4, 70-0704-1615-4, 70-0704-1616-2, 70-0704-1665-9, 70-0704-2949-6, 70-0704-2950-4, 70-0704-2956-1, 70-0704-2958-7, 70-0704-2959-5, 70-0704-2962-9, 70-0704-2966-0, 70-0704-2967-8, 70-0704-2968-6, 70-0704-2971-0, 70-0704-5810-7, 70-0704-5811-5, 70-0704-5812-3, 70-0704-5814-9, 70-0704-5816-4, 70-0704-5817-2, 70-0704-5820-6, 70-0704-5822-2, 70-0704-5823-0, 70-0704-5825-5, 70-0704-5826-3, 70-0704-5908-9, 70-0704-8401-2, 70-0704-8402-0, 70-0704-8403-8, 70-0704-8404-6, 70-0704-8405-3, 70-0704-8406-1, 70-0704-8407-9, 70-0704-8408-7, 70-0704-8409-5, 70-0704-8410-3, 70-0704-8764-3, 70-0706-6017-3, 70-0707-4394-6, 98-0212-1022-8, 98-0212-1024-4, 98-0212-

1025-1, 98-0212-2725-5, 98-0212-2726-3, 98-0212-2743-8, 98-0212-2744-6, 98-0212-2778-4, 98-0212-2972-3, 98-0212-3037-4, 98-0212-3053-1, 98-0212-3054-9, 98-0212-3056-4, 98-0212-3057-2, 98-0212-3071-3, 98-0212-3072-1, 98-0212-3206-5, 98-0212-3207-3, 98-0212-3208-1, 98-0212-3210-7, 98-0212-3266-9, 98-0212-3280-0, 98-0212-3281-8, 98-0212-3290-9, 98-0212-3315-4, 98-0212-3316-2, 98-0212-3317-0, 98-0212-3318-8, 98-0212-3319-6, 98-0212-3320-4, 98-0212-3321-2, 98-0212-3323-8, 98-0212-3350-1, 98-0212-3351-9, 98-0212-3355-0, 98-0212-3356-8, 98-0212-3360-0, 98-0212-3366-7, 98-0212-3532-4, 98-0212-3533-2, 98-0212-3552-2, 98-0212-3566-2, 98-0212-3579-5, 98-0212-3580-3, 98-0212-3587-8, 98-0212-3590-2, 98-0212-3591-0, 98-0212-3595-1, 98-0212-3596-9, 98-0212-3602-5, 98-0212-3603-3, 98-0212-3604-1, 98-0212-3606-6, 98-0212-3611-6, 98-0212-3622-3, FJ-9600-0081-0, FJ-9600-0082-8, FJ-9600-0083-6, FS-9000-2590-9, FS-9100-0397-9, FS-9100-0398-7, FS-9100-0410-0, FS-9100-0411-8, FS-9100-0414-2, FS-9100-0441-5, FS-9100-0444-9, FS-9100-0746-7, FS-9100-0846-5, FS-9100-0882-0, FS-9100-1029-7, FS-9100-1313-5, FS-9100-1717-7, FS-9100-1831-6, FS-9100-2037-9, FS-9100-2330-8, FS-9100-2363-9, FS-9100-2366-2, FS-9100-2395-1, FS-9100-2396-9, FS-9100-2412-4, FS-9100-2438-9, FS-9100-2544-4, FS-9100-2590-7, FS-9100-2629-3, FS-9100-2708-5, FS-9100-2709-3, FS-9100-2711-9, FS-9100-2984-2, FS-9100-3027-9, FS-9100-3028-7, FS-9100-3325-7, FS-9100-3346-3, FS-9100-3452-9, FS-9100-3618-5, FS-9100-4083-1, FS-9100-4179-7, FS-9100-4216-7, FS-9100-4225-8, FS-9100-4227-4, FS-9100-4280-3, FS-9100-4300-9, FS-9100-4311-6, FS-9100-4324-9, FS-9100-4360-3, FS-9100-4439-5, FS-9100-4472-6, FS-9100-4561-6, FS-9100-5009-5, FS-9100-5010-3, FS-9100-5053-3, FS-9100-5065-7, FS-9100-5068-1, FS-9100-5121-8, FS-9100-5146-5, FS-9100-5183-8, FS-9100-5184-6, FS-9100-5192-9, FS-9100-5194-5, FS-9100-5198-6, FS-9100-5199-4, FS-9100-5250-5, HC-0006-2419-3, WF-6001-0106-8, WF-6001-0107-6, WF-6001-0108-4, WF-6001-0109-2, WF-6001-0110-0, WF-6001-0111-8, WF-6001-0112-6, WF-6001-0113-4, WF-6001-0114-2, WF-6001-0115-9, WF-6001-0116-7, WF-6001-0117-5, WF-6001-0118-3, WF-6001-0119-1, WF-6001-0120-9, WF-6001-0121-7, WF-6001-0126-6, WF-6001-0127-4, WF-6001-0128-2, WF-6001-0129-0, WF-6001-0130-8, WF-6001-0131-6, WF-6001-0132-4, WF-6001-0134-0, WF-6001-0135-7, WF-6001-0136-5, WF-6001-0137-3, WF-6001-0138-1, WF-6001-0148-0, WF-6001-0150-6, WF-6001-0169-6, WF-6001-0170-4, WF-6009-0001-4, WF-6009-0002-2, WF-6009-0003-0, WF-6009-0004-8, WF-6009-0005-5, WF-6009-0006-3, WF-6009-0007-1, WF-6009-0009-7, WF-6009-0010-5, WF-6009-0028-7, WF-6009-0029-5, WF-6009-0038-6, WF-6009-0039-4, WF-6009-0053-5, WF-6009-0054-3, WF-6009-0055-0, WF-6009-0056-8, WF-6009-0057-6, WF-6009-0064-2, WF-6009-0065-9, WF-6009-0066-7, WF-6009-0070-9, WF-6009-0077-4, WF-6009-0087-3, WF-6009-0091-5, WF-6009-0128-5, WF-6009-0162-4, WF-6009-0163-2, WF-6009-0164-0, WF-6009-0422-2, WF-6009-0423-0, WF-6009-0473-5, ZF-9100-1831-4

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and **not the packaging, labeling, or marking requirements**. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

ADDITIONAL INFORMATION

This product is an article as defined by TSCA, EINECS, CDSL, MITI, KECI, AICS, PICCS, KECI and CICS regulations, and is exempt from chemical inventory listing requirements.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 1 **Flammability:** 0 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 **Flammability:** 0 **Reactivity:** 0 **Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 8: Respiratory protection - recommended respirators information was modified.

Section 14: ID Number(s) Template 1 was modified.

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