



SAFETY DATA SHEET

SDS-400-rev2 Issue Date: 07/20/2017

POLY(METHYL METHACRYLATE) SPHERES, MICROSPHERES AND NANOSPHERES

1. IDENTIFICATION OF SUBSTANCE

| | |
|---------------------------|--|
| 1.1 PRODUCT NAME(S) | Poly(methyl methacrylate) Spheres, Microspheres and Nanospheres |
| 1.2 PRODUCT IDENTIFIER(S) | PMMAMS, PMMAS, PMPMS, PMPNS |
| 1.3 INTENDED USE | Industrial and research applications |
| 1.4 SUPPLIER'S DETAILS | Cospheric LLC, PO Box 6762, Santa Barbara, CA 93160 info@cospheric.com www.cospheric.com |
| 1.5 EMERGENCY TELEPHONE | +1-805-687-3747 Monday-Friday, 08:00-17:00 PST [UTC-8] |

2. HAZARDS IDENTIFICATION

2.1 OSHA/HCS STATUS

This product is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of substance or mixture COMBUSTIBLE DUST

2.2 GHS LABEL ELEMENTS

| | |
|--------------------------|--|
| Signal word | Warning |
| Hazard statements | May form combustible concentrations in air. |
| Precautionary statements | Keep away from all ignition sources including heat, sparks and flame. Keep container closed and grounded. Prevent dust accumulations to minimize explosion hazard. |

2.3 HAZARDS NOT OTHERWISE CLASSIFIED Spilled material is extremely slippery. Dust may cause irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT | CAS NUMBER | % (W/W) |
|---------------------------|------------|---------|
| Poly(methyl methacrylate) | 9011-14-7 | >99% |

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

| | |
|--------------|---|
| Eye contact | Rinse with plenty of water. Seek medical advice if symptoms persist. |
| Skin contact | If symptoms occur, wash with soap and water. |
| Inhalation | If symptoms occur, move to fresh air. Seek medical advice if necessary. |
| Ingestion | If symptoms occur, seek medical advice. |

4.2 IMPORTANT SYMPTOMS/EFFECTS, ACUTE OR DELAYED

Inhalation of high concentrations of dust may cause respiratory irritation.

5. FIRE-FIGHTING MEASURES

5.1 EXPLOSION

Avoid generating dust. Fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard.



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5.2 EXTINGUISHING MEDIA

Use dry chemical powder. Do not use water jet.

5.3 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Fine dust clouds may form explosive mixtures with air.

5.4 SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved) and full protective gear.

5.5 REMARKS

As with most solid particulate organic materials, high concentrations of dusts from this product suspended in air are an explosion hazard in the presence of sparks, flames, and heat. Do not allow to accumulate on equipment and surfaces where this product is used. In the National Fire Protection Association (NFPA) Code 499, a "combustible dust" is any finely divided solid material 420 microns or less in diameter that presents a fire or explosion hazard when dispersed in air. When there is the potential of a dust explosion in a use location, the proper electrical equipment and installations should be used.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Follow precautions for safe handling described in this safety data sheet (Section 8).

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid dispersal of spilled material and run-off or contact with soil, waterways, drains and sewers. Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Use spark-proof tools and explosion-proof equipment. Collect spillage with shovel, broom or the like, avoiding dust cloud formation. Only use vacuum cleaners approved for dust collection. Transfer to a container for disposal.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid handling practices that cause dust formation. Minimize dust generation and accumulation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimize the risk of inhalation of dust. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in tightly closed original container in a dry, cool and well-ventilated place away from all sources of ignition.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

| Nuisance Dust (Particles Not Otherwise Regulated) | | | |
|---|----------------------------------|---------------------|---------------------|
| OSHA | Permissible Exposure Limit (PEL) | Respirable fraction | 5mg/m ³ |
| | | Total dust | 15mg/m ³ |

8.2 ENGINEERING CONTROLS

Avoid handling practices that cause dust formation. Use local exhaust ventilation. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment.

8.3 INDIVIDUAL PROTECTION MEASURES (PERSONAL PROTECTIVE EQUIPMENT)

Respiratory protection: When handling practices cause dust formation, select respiratory protection appropriate for the particle size of the material.

Eye/face protection: Chemical goggles.

Skin protection: Wear suitable protective clothing and gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---------------------------|--|
| Appearance | Solid spherical particles |
| Relative density | Per product specification |
| Softening Temperature | Per product specification |
| Flammability | Combustible solid when dispersed in air and in the presence of open flames, sparks, static discharge and heat. |
| Flammable limits | No information available |
| Auto-ignition temperature | No information available |
| Decomposition temperature | No information available |
| Odor | Odorless |
| Vapor pressure | No information available |
| Vapor density | No information available |
| pH | No information available |
| Melting point | No information available |
| Solubility in water | Insoluble |
| Initial boiling point | No information available |



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| | |
|-----------------------|--------------------------|
| Flash point | No information available |
| Evaporation rate | No information available |
| Partition coefficient | No information available |
| Viscosity | No information available |

10. STABILITY AND REACTIVITY

| | |
|------------------------|--|
| Reactivity | Non-reactive under normal conditions of use. |
| Chemical stability | Stable under normal conditions of use. |
| Conditions to avoid | Avoid the creation of dust clouds and all possible sources of ignition. Take precautionary measures against static discharges. Dissipate static electricity by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation. |
| Incompatible materials | Oxidizing materials. |

11. TOXICOLOGICAL INFORMATION

| | |
|-----------------------------|--------------------|
| Likely route(s) of exposure | Dermal, inhalation |
|-----------------------------|--------------------|

SIGNS AND SYMPTOMS OF EXPOSURE

| | |
|--------------|---|
| Eye contact | Direct contact with eyes may cause temporary mechanical irritation. Signs and symptoms may include pain, redness. |
| Skin contact | Direct contact with skin may cause sensitization in hypersensitive individuals. Signs and symptoms may include redness, pain and itching. |
| Inhalation | Inhalation above recommended exposure levels may cause respiratory irritation including cough. |
| Ingestion | No harmful effects expected in amounts likely to be ingested by accident. May cause discomfort if swallowed. |

TOXICOLOGICAL DATA

| | |
|-----------------------------------|--|
| Acute toxicity | No information available |
| Skin corrosion/irritation | No information available |
| Serious eye damage/eye irritation | No information available |
| Respiratory or skin sensitization | No information available |
| Germ cell mutagenicity | No information available |
| Carcinogenicity | Not listed as a carcinogen (OSHA, NTP, IARC) |
| Reproductive toxicity | No information available/not sufficient for classification |
| STOT-single exposure | No information available/not sufficient for classification |
| STOT-repeated exposure | No information available/not sufficient for classification |
| Aspiration hazard | No information available/not sufficient for classification |



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12. ECOLOGICAL INFORMATION

| | |
|-------------------------------|--------------------------|
| Toxicity | No information available |
| Persistence and degradability | No information available |
| Bioaccumulation potential | No information available |
| Mobility in soil | No information available |

13. DISPOSAL CONSIDERATIONS

Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

14. TRANSPORTATION INFORMATION

This product is not subject to regulations for the transport of hazardous materials (DOT, IATA, IMO).

15. REGULATORY INFORMATION

This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200.

16. OTHER INFORMATION

The information contained in this document is correct to the best of our knowledge at the date of publication. It should not be viewed as all inclusive, but as a guide only. It does not represent any guarantee of the properties of the product. Cospheric LLC shall not be held liable for any damage resulting from handling of or from contact with the above product. For these reasons, it is important that product users carry out their own tests to satisfy themselves as to the suitability of the safety precautions for their own intended applications.

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