



Polyhedral Oligomeric Silsesquioxane (POSS®)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Identification

Product form : Substance
Substance name : Polyhedral Oligomeric Silsesquioxane (POSS®)
CAS No : NA
Product code : Various
Formula : (RSiO_{1.5})_n

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : POSS molecules are a unique class of materials, typically hybrid molecules consisting of a silica cage core, with organic functional groups attached to the corners of the cage. POSS nanostructures range from 1-3 nm in diameter. POSS molecules can be used as reactive ingredients for polymers, or as inert additives to impact desired properties.
Use of the substance/mixture : Scientific research and development

1.3. Details of the supplier of the safety data sheet

Hybrid Plastics
55 Runnels Dr.
Hattisburg, MS 39401 - USA
T +1.601.544.3466 - F +1.601.545.3103
info@hybridplastics.com

1.4. Emergency telephone number

Emergency number : US and Canada: 1.800.255.3924 International: +01.813.248.0585

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

Other hazards not contributing to the classification : May be slightly irritating to eyes, respiratory system and skin.

2.4. Unknown acute toxicity (GHS US)

100% (oral, dermal, inhalation)

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Polyhedral Oligomeric Silsesquioxane (POSS®) (Main constituent)	Various	100	Not classified

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : May be slightly irritating to eyes, respiratory system and skin.
First-aid measures after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

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- First-aid measures after skin contact : Prolonged or repeated contact may cause skin to become dry or cracked. Wash skin with mild soap and water.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting unless directed to do so by medical personnel.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Excessive dust production may cause minor eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : If there is a fire nearby, use suitable extinguishing agents.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Explosion hazard : Product is not explosive.
- Reactivity : Normally stable, even under fire exposure conditions, and not reactive with water.

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust. Dust deposited may be vacuum cleaned. Use a HEPA filter.

6.1.1. For non-emergency personnel

- Protective equipment : Avoid contact with skin and eyes. Wear dust impervious gloves; Chemical goggles or safety glasses.
- Emergency procedures : Avoid all unnecessary exposure. Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection. Wear dust impervious gloves; Chemical goggles or safety glasses.
- Emergency procedures : Collect as much as possible in a clean container for (preferable) reuse or disposal. No additional risk management measures required.

6.2. Environmental precautions

Do not discharge into drains or the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Dust deposited may be vacuum cleaned; use a high efficiency particulate air filter (HEPA filter).

6.4. Reference to other sections

Section 7: safe handling. Section 8: personal protective equipment. Section 13: disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide local exhaust or general room ventilation. Avoid dust formation.
- Hygiene measures : Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a dry, cool and well-ventilated place. Store in correctly labelled containers. Keep container closed when not in use.
- Prohibitions on mixed storage : Keep away from incompatible materials.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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ACGIH	ACGIH TWA (mg/m ³)	as Insoluble Particulates not otherwise specified: 10 mg/m ³ Inhalable particles; 3 mg/m ³ respirable particles
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ as Total dust

8.2. Exposure controls

Appropriate engineering controls	:	Provide local exhaust or general room ventilation to minimize exposure to dust.
Personal protective equipment	:	Avoid all unnecessary exposure.
Hand protection	:	Dust impervious gloves.
Eye protection	:	Chemical goggles or safety glasses.
Respiratory protection	:	Appropriate dust or mist respirator should be used if airborne particles are generated when handling this material. Use air-purifying respirator equipped with particulate filtering cartridges.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Powder
Colour	:	White
Odour	:	Odorless
Odour threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Relative vapour density at 20 °C	:	No data available
Solubility	:	Water: Varies Organic solvent: Varies
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Normally stable, even under fire exposure conditions, and not reactive with water.

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10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Silicon oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Dermal; Inhalation
Acute toxicity	: Not classified. (Lack of data)
Skin corrosion/irritation	: Not classified. (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified. (Based on available data, the classification criteria are not met)
Respiratory or skin sensitisation	: Not classified. (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified. (Lack of data)
Carcinogenicity	: Not classified. (Lack of data)

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IARC group	Not listed in carcinogenicity class
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

Reproductive toxicity	: Not classified. (Lack of data)
Specific target organ toxicity (single exposure)	: Not classified. (Lack of data)
Specific target organ toxicity (repeated exposure)	: Not classified. (Lack of data)
Aspiration hazard	: Not classified. (Based on available data, the classification criteria are not met)
Potential adverse human health effects and symptoms	: Silica dust (inert - but may irritate respiratory tract and eyes).

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecotoxicological data about this product are known. Keep product out of sewers and waterways.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not considered a dangerous good for transport regulations

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

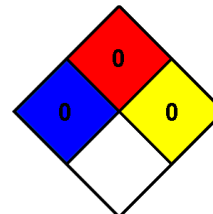
SECTION 16: Other information

Indication of changes:

Section	Changed item	Change
1.4	Emergency phone number	Modified

Data sources : ACGIH (American Conference of Government Industrial Hygienists).
Internal Company test data.

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



SDS US (GHS HazCom 2012)

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product