



Polyhedral Oligomeric Silsesquioxane (POSS®)

Liquid Form

Safety Data Sheet

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

Date of issue: 01/21/2016

Revision date: 01/09/2017

Supersedes: 01/21/2016

Version: 1.1

SECTION 1: Identification

1.1. Identification

Product form : Substance
Trade 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 silicacage core, with organic functional groups attached to the corners of the cage. POSS nanostructures range from 1-3 nm 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

According to the corresponding national regulations there is no labelling obligation for this product.

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) | (CAS No) NA | 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 after inhalation : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
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.

Polyhedral Oligomeric Silsesquioxane (POSS®)

Liquid Form

Safety Data Sheet

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

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 : No significant signs or symptoms indicative of any health hazard are expected to occur.

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

6.1.1. For non-emergency personnel

Protective equipment : Avoid contact with skin and eyes. Chemical goggles or safety glasses. Wear suitable gloves. Nitrile gloves.

Emergency procedures : Avoid all unnecessary exposure. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Chemical goggles or safety glasses. Neoprene or nitrile rubber gloves.

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 : Absorb and/or contain spill with inert material, then place in suitable container.

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.

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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

Polyhedral Oligomeric Silsesquioxane (POSS®)

Liquid Form

Safety Data Sheet

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

8.2. Exposure controls

| | |
|----------------------------------|---|
| Appropriate engineering controls | : Either local exhaust or general room ventilation is usually required. Ensure good ventilation of the work station. |
| Personal protective equipment | : Avoid all unnecessary exposure. |
| Hand protection | : nitrile rubber 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. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | : Liquid |
| Appearance | : Viscous oily liquid. |
| Colour | : No data available |
| 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 | : 100 - 50000 cP |

9.2. Other information

| | |
|-------------|-------|
| VOC content | : 0 % |
|-------------|-------|

SECTION 10: Stability and reactivity

10.1. Reactivity

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

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

Polyhedral Oligomeric Silsesquioxane (POSS®)

Liquid Form

Safety Data Sheet

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

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)

Polyhedral Oligomeric Silsesquioxane (POSS®) (NA)

| | |
|--|-------------------------------------|
| 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 : None under normal conditions.

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.

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

Polyhedral Oligomeric Silsesquioxane (POSS®)

Liquid Form

Safety Data Sheet

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

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 |

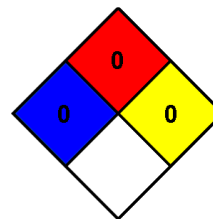
Data sources : ACGIH (American Conference of Government Industrial Hygienists).
Internal Company test data.

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists).
ATE: Acute Toxicity Estimate.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

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)

SDS prepared by:

The Redstone Group, LLC
6077 Frantz Rd. Suite 206
Dublin, OH USA 43017
T 614-923-7472
www.redstonegrp.com

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