

HYBRID PLASTICS®

2014 POSS® CATALOG

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v. 2.1

Thank you for taking the time to view our catalog.

Hybrid Plastics® was launched in 1998 with the goal of bringing a revolutionary material to market. Polyhedral Oligomeric Silsesquioxane (POSS®) was developed at the Air Force Research Lab initially as a new class of chemicals to advance rocket and space vehicle material performance.

POSS® compounds provide unique opportunities to create revolutionary material combinations through a melding of the desirable properties of ceramics and polymers at the 1 nm length scale. These new combinations enable the circumvention of classic material performance trade-offs by exploiting the synergy and properties that only occur between materials at the nanoscale.

Today Hybrid Plastics® is one of the top nanotechnology companies in the United States. Its dedicated staff of scientists and engineers have received numerous awards for innovation and customer service. Hybrid Plastics® is unique among nanotech companies because it actually manufactures its nano-products on a multi-ton scale at a dedicated 35,000 ft², 15 acre facility in Hattiesburg, Mississippi, USA.

Within this catalog, you will find sections listing both commercially available and custom synthesis POSS®. Commercially available compounds are those that are available at large scales with well-developed processes and tight quality control. A number of compounds are offered in the custom synthesis section; these are compounds that are available but the production ramp-up is contingent on specific customer need. Custom synthesized compounds are available in increments of 100 grams.

Should you be interested in purchasing commercial or custom POSS® please give us a call at +1 (601) 544-3466 or send us an email at info@hybridplastics.com.

As with most manufactured materials, increased quantities can have a significant effect on the unit price and I encourage you to use the appropriate price from the price chart when considering your application. Please feel free to contact us at the number or email above to discuss typical loading or incorporation levels of POSS®.

We welcome you to reach out to us directly for specific questions about POSS®. We are enthusiastic about the potential of POSS® to solve your materials problems and look forward to suggesting how POSS® can help you. Lastly, please take a moment to visit our website. We have several explanatory videos posted along with a range of technical data sheets for different materials and applications. There is a tremendous amount of academic and research activity occurring on the advantages of POSS® and we have also made much of that available on the website.

Again, thank you for your interest in Hybrid Plastics® and POSS® and we look forward to working with you further.

Sincere regards,



Joe Lichtenhan
President

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6. All orders are shipped FOB Hattiesburg, Mississippi. Title of goods passes to the Buyer when the Buyer's order is delivered to the carrier. Unless legally compelled otherwise, Hybrid Plastics, Inc. will ship by the most cost and time effective method.

FAIR LABOR STANDARDS ACT

Hybrid Plastics, Inc. hereby certifies that the goods supplied hereunder to Buyer were produced in compliance with requirements of the Fair Labor Standards Act, as amended, and regulations/orders of the United States Department of Labor issued thereunder.

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Custom Synthesis POSS®

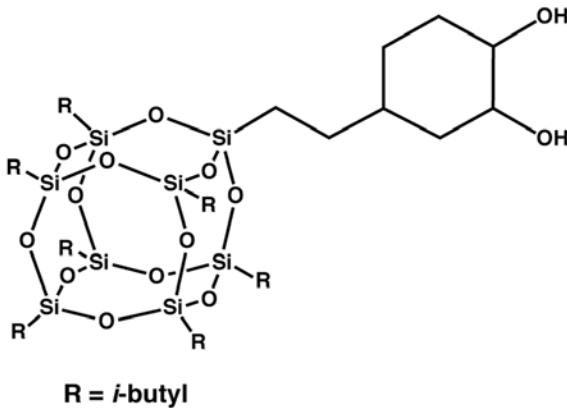
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• All products are 97% pure or greater unless stated otherwise in the product entry

• Prices listed herein are for R&D quantities only. Pricing on commercial orders is subject to volume discounts and may vary considerably from the R&D pricing shown.

trans*-Cyclohexanedioilisobutyl POSS®*AL0125**

AL0125 is a hybrid molecule with an inorganic silsesquioxane at the core, organic isobutyl groups attached at seven corners of the cage and a *trans*-cyclohexane diol group on the eighth corner. It is very useful as a monomer in condensation polymerization chemistry to increase strength, toughness, and the HDT by limiting chain motion.



R = *i*-butyl

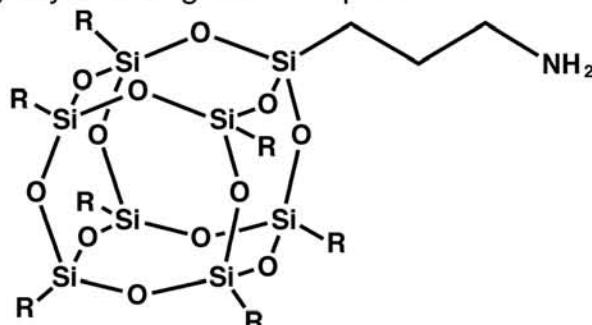
C₃₆H₇₈O₁₄Si₈**FW 959.68****Key Properties****Appearance:** white powder**Thermal Stability (5% wt loss):** 255°C**Solvent Solubility:** THF, chloroform, acetone, hexane**Solvent Insolubility:** acetonitrile**Resin Solubility:** polyethers and polyalcohols**Relevant Literature**

- Shape Memory Polymers Based on Semicrystalline Thermoplastic Polyurethanes Bearing Nanostructured Hard Segments - *World Patent #2006/115799*
- Structural and electrochemical properties of polyurethanes/polyhedral oligomeric silsesquioxanes (PU/POSS) hybrid coatings on aluminum alloy - *Materials Chemistry and Physics* 117 (2009) 91–98

CAS 408439-48-3 Authorizations: None**\$480/100g \$2700/kg**

Aminopropylsobutyl POSS®**AM0265**

AM0265 is a hybrid molecule with an inorganic silsequioxane at the core, organic isobutyl groups attached to seven corners of the cage and an aminopropyl group attached to the eighth. It has been used to increase spacing between chains in polyimides to reduce color. It is also effective at improving weatherability of polymers and coatings by reducing water sorption.



R = *i*-butyl

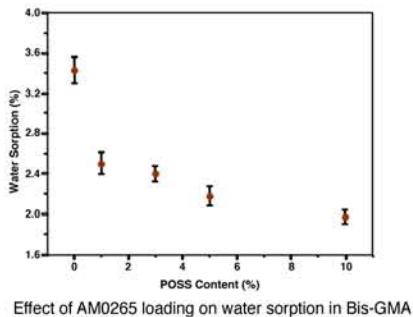
$C_{31}H_{71}NSi_8O_{12}$

FW 874.58

D_4^{20} 1.16

n_D^{20} 1.49

Refrigerate

**Key Properties**

Appearance: white powder

Thermal Stability (5% wt loss): 221°C

Solvent Solubility: THF, chloroform, hexane

Solvent Insolubility: acetonitrile, methanol

Resin Solubility: aliphatic resins, aliphatic and aromatic amines

Relevant Literature

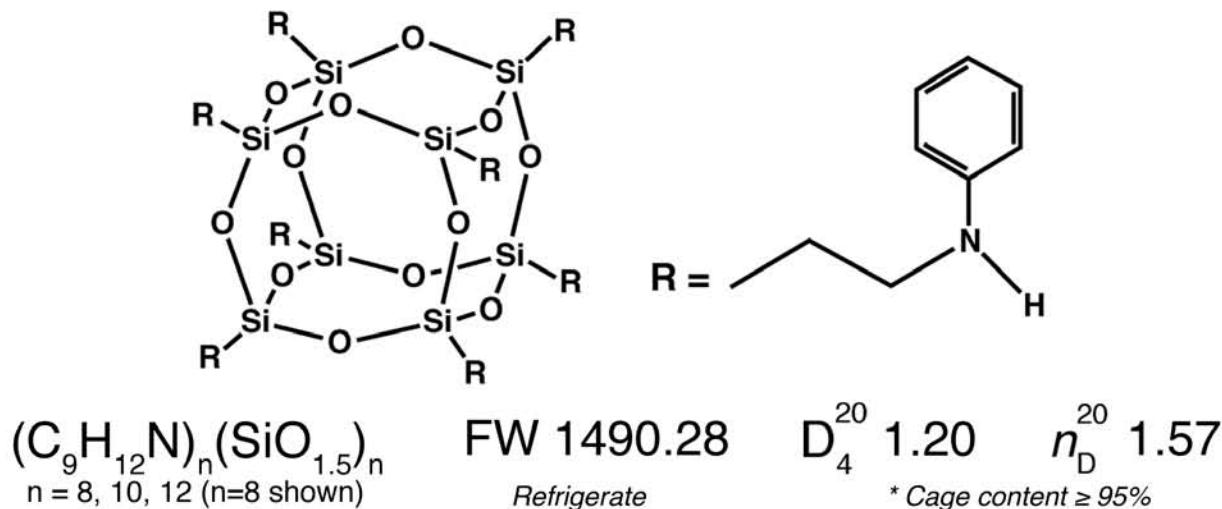
- Chemical Modification of Fluorinated Polyimides - *Macromolecules*, Vol. 39, No. 14, 2006
- Polyimide Polymer with Oligomeric Silsesquioxane - *US Pat 7,619,042*
- Vapor phase grafting - *J. Mater. Chem.*, 2011, 21, 18049-18054
- Reduced water sorption in methacrylates - *JAPS*, Vol. 124, 3334–3340 (2012)

CAS 444315-15-5 Authorizations: None

\$120/100g \$485/kg

N-Phenylaminopropyl POSS® Cage Mixture AM0281

AM0281 is a hybrid molecule with an inorganic silsequioxane at the core and organic N-phenylaminopropyl groups at the corners of the cage. It is effective at improving weatherability of polymers and coatings by reducing water sorption. AM0281 is naturally adhesive, greatly increases impact performance of BMI and epoxy resins, and - as a hindered amine - is an excellent antioxidant.



Key Properties

Amine Equivalenet Weight: 186

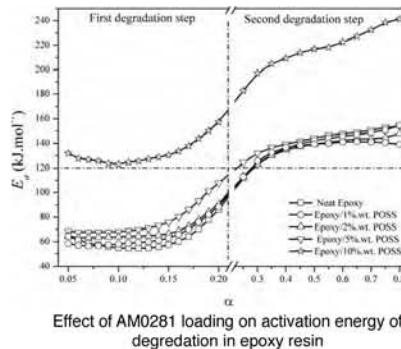
Appearance: clear, pale yellow, viscous liquid

Viscosity (@ 60°C): 180 Poise

Thermal Stability (5% wt loss): 408°C

Solvent Solubility: THF, chloroform

Solvent Insolubility: acetonitrile, methanol, acetone, hexane



Relevant Literature

- Higher degradation temperature in epoxy resins - *Polymer Composites*. 33(8), 1437–1444, Aug 2012
- Increased T_g and reduced fragility in epoxy resins - *Polymer*. 54(9) April 2013, 2292–2298
- Poss melamine overcoated photoconductors - *US Pat* 7897314

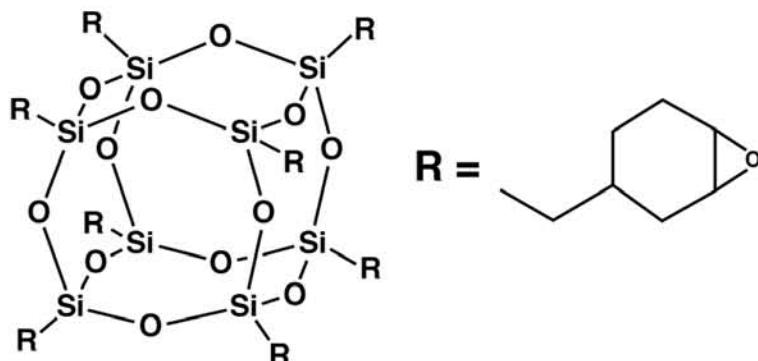
CAS 1187675-16-6 Authorizations: None

\$120/100g \$350/kg

EpoxyCyclohexyl POSS® Cage Mixture

EP0408

EP0408 is a hybrid molecule with an inorganic silsequioxane at the core and organic epoxycyclohexyl groups attached at the corners of the cage. EP0408 can be cured with aromatic, aliphatic amines and photoinitiators. EP0408 provides increased use temperature, excellent water and solvent resistance, and enhanced thermomechanical performance.



$(C_8H_{13}O)_n(SiO_{1.5})_n$
n = 8, 10, 12 (n=8 shown)

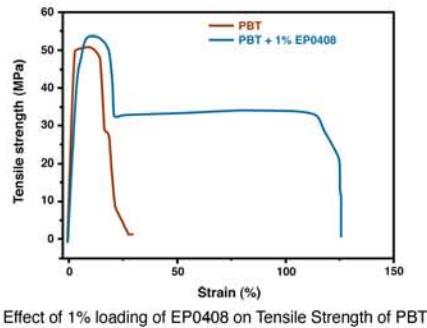
FW 1418.20

Refrigerate

D₄²⁰ 1.24

n_D²⁰ 1.52

* Cage content ≥ 50%



Key Properties

Epoxy Equivalent Weight: 177

Appearance: Clear, pale yellow/orange, semi-solid

Viscosity (@ 60°C): 500 Poise

Thermal Stability (5% wt loss): 403°C

Solvent Solubility: THF, chloroform, isopropanol

Solvent Insolubility: hexane

Resin Solubility: aromatic and aliphatic epoxy resins

Relevant Literature

- Crack-Free 3D Hybrid Microstructures - *ACS Nano*. 2009 Oct 27;3(10):3251-9
- Modified morphology and properties of poly(2,6-dimethyl-1,4-phenylene oxide)/polyamide 6 blends - *European Polymer Journal* 45(8) Aug 2009, 2202
- Passivation Layer of Iron-Based Rare Earth Powders - *US Patent* 7,390,579
- Epoxide Coatings for Stone Consolidation and Conservation - *J. Korean Soc. Cons.* 26:1 (2010) 85-94.
- Improvement of mechanical properties of poly(butylene terephthalate) through chain extension - *JAPS*. 107 (2008) 825-830
- Photodefinable dielectric materials - *J. Elec. Mat.* 39:2 (2010) 149–156

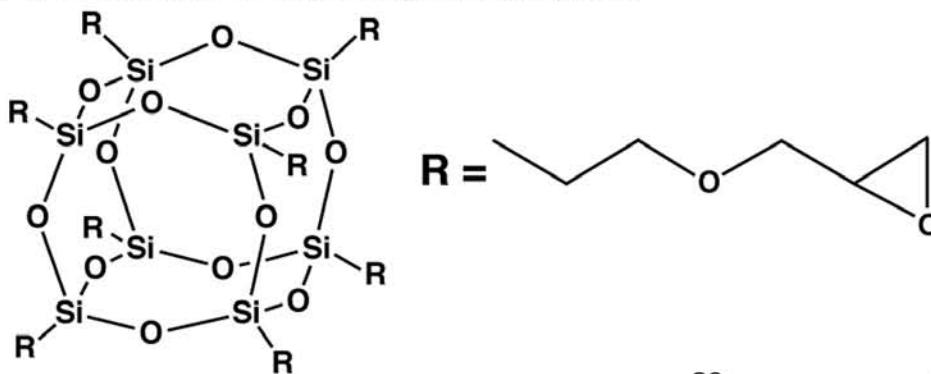
CAS 187333-74-0 Authorizations: None

\$100/100g \$350/kg

Glycidyl POSS® Cage Mixture

EP0409

EP0409 is a hybrid molecule with an inorganic silsequioxane at the core and organic glycidyl groups attached at the corners of the cage. EP0409 serves as a high temperature reactive diluent in both aromatic and aliphatic epoxy resin and will increase rubbery plateau modulus. POSS molecules also have robust resistance to environmental degradation such as moisture, oxidation, corrosion and UV radiation. EP0409 is also excellent at dispersing silica particles.



$(C_6H_{11}O_2)_n(SiO_{1.5})_n$ FW 1337.88 Refrigerate D_4^{20} 1.25 n_D^{20} 1.51
 $n = 8, 10, 12$ ($n=8$ shown) * Cage content $\geq 65\%$

Key Properties

Epoxy Equivalent Weight: 167

Appearance: Clear, pale yellow, viscous liquid

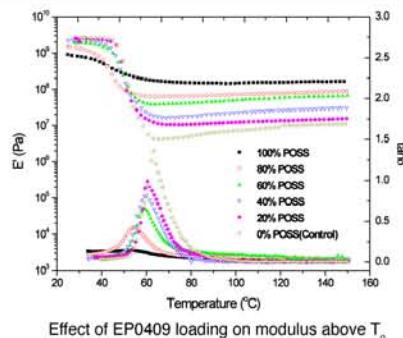
Viscosity (@ 25°C): 48 Poise

Thermal Stability (5% wt loss): 365°C

Solvent Solubility: THF, chloroform, toluene

Solvent Insolubility: water, hexane

Resin Solubility: aromatic and aliphatic epoxy resins



Relevant Literature

- Lower residual thermal stress in composites
JAPS:B 46 (2008) 2719-2732
- Sun protection in greenhouse covers
Adv. Mat. Res. Vols.113-114 (2010) 2077-2080
- Reduced degradation of polyoxymethylene
Polymer Composites, Vol. 32, (2011) 1584-1592
- Room temperature VARTM for marine composites
Polymer Preprints 2008, 49(1), 440

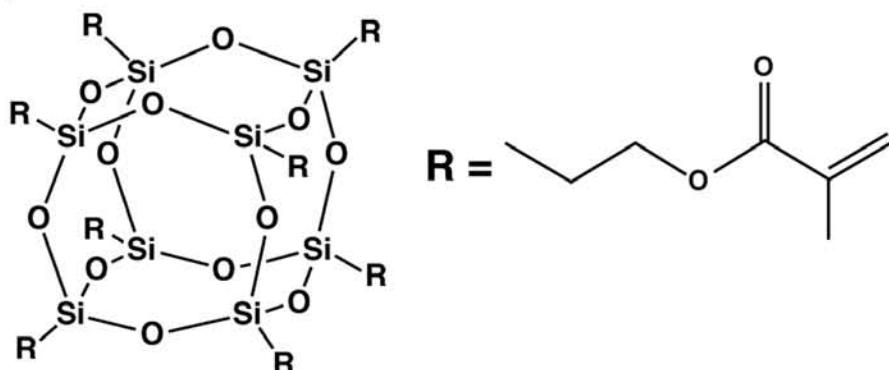
CAS 68611-45-0 Authorizations: TSCA

\$80/100g \$246/kg

Methacryl POSS® Cage Mixture

MA0735

MA0735 is a hybrid molecule with an inorganic silsequioxane at the core and organic methacrylate groups attached at the corners of the cage. MA0735 can provide fast UV cure, scratch resistance, enhanced mechanical properties, excellent moisture resistance and increased use temperature. It is also excellent in enhancing flow and dispersing particulate fillers in rubber.



$(C_7H_{11}O_2)_n(SiO_{1.5})_n$ FW 1433.97 D_4^{20} 1.20 n_D^{20} 1.46
 $n = 8, 10, 12$ ($n=8$ shown)

Key Properties

Appearance: Clear, pale yellow, viscous liquid

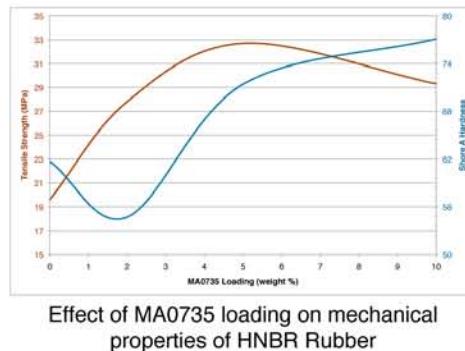
Viscosity (@ 25°C): 18 Poise

Thermal Stability (5% wt loss): 386°C

Solvent Solubility: THF, chloroform, acetone, acetonitrile, ethanol

Solvent Insolubility: water

Resin Solubility: aromatic and aliphatic resins



Relevant Literature

- Laser media - *J. Phys. Chem. C*, Vol. 112, No. 38, 208
- Chemical /stain resistant coatings - *US Patent No: 7,470,728 B2*
- Radiation curable inks - *EU Patent No: EP 1 452 569 B1*
- Dental Composite - *US Patent No: 7,160,941 B2*
- Carbon fiber composites - *J. Mater. Sci.*, Vol. 42, No. 13, 5264.
- Reinforcement of HNBR - *Materials Science Forum* (Vol 714) 175-181.
- Ultra low dielectric materials - *J. Mater. Chem.*, 2009, 19, 3643.

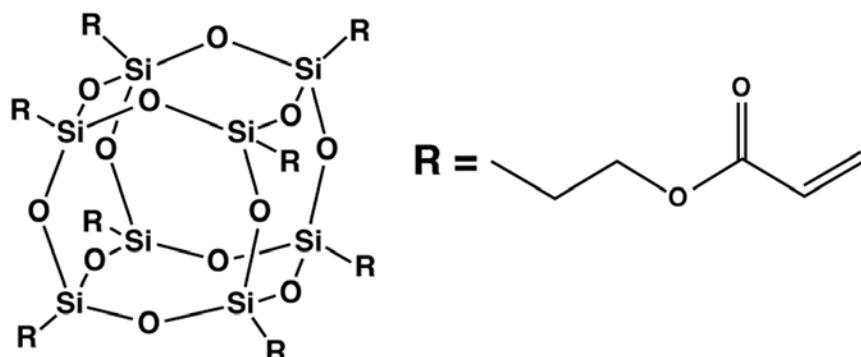
CAS 160185-24-0 Authorizations: TSCA

\$80/100g \$293/kg

Acrylo POSS® Cage Mixture

MA0736

MA0736 is a hybrid molecule with an inorganic silsequioxane at the core and organic acrylopropyl groups attached at the corners of the cage. MA0736 can be cured through ultraviolet or electron beam. It is especially suitable for applications that require scratch resistance and enhanced mechanical performance.



$(C_6H_9O_2)_n(SiO_{1.5})_n$ FW 1321.75 D_4^{20} 1.23 n_D^{20} 1.45
 $n = 8, 10, 12$ (n=8 shown) *Refrigerate* * Cage content $\geq 90\%$ *MEHQ inhibited*

Key Properties

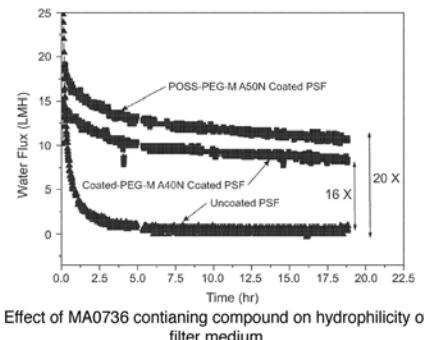
Appearance: clear, colorless liquid

Viscosity (@ 25°C): 22 Poise

Thermal Stability (5% wt loss): 387°C

Solvent Solubility: THF, chloroform, acetone, acetonitrile, ethanol

Solvent Insolubility: water, methanol



Relevant Literature

- Hydrophilic polymer films - *US. Pat. Appl. 2011/0120940*
- Nanoporous films - *Materials Chemistry and Physics* 114 (2009) 736–741
- Photocurable Silicon-Based Materials for Imprint Lithography - *Proc. SPIE 6517, Emerging Lithographic Technologies XI*, 651729 (March 21, 2007);

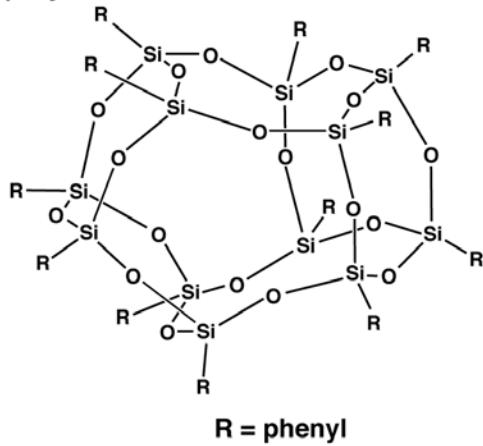
CAS 1204591-17-2 Authorizations: None

\$180/100g \$949/kg

DodecaPhenyl POSS®

MS0802

MS0802 is a hybrid molecule with an inorganic silsequioxane at the core and organic phenyl groups attached at the corners of the cage. MS0802 can be used as a porogen in plastics and as a nanoreinforcement in rubber. It has also been used to improve laser marking in fluoropolymers.

 $C_{72}H_{60}O_{18}Si_{12}$

FW 1550.26

 D_4^{20} 1.26 n_D^{20} 1.56

Key Properties

Appearance: white powder**Thermal Stability (5% wt loss):** 387°C**Solvent Solubility:** slightly soluble in THF, chloroform, toluene**Solvent Insolubility:** acetone, acetonitrile, methanol**Resin Solubility:** thermoplastic resins including fluoropolymers

Relevant Literature

- Pigments and compositions for use in laser marking - *US Patent 6825265*
- Nanoreinforced rubber compound - *US Patent 6852794*
- Porous plastic film - *US Patent 7452593*

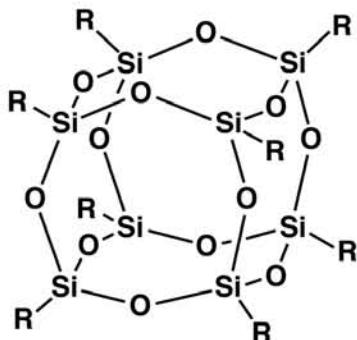
CAS 18923-59-6 Authorizations: TSCA

\$100/100g \$317/kg

Isooctyl POSS® Cage Mixture

MS0805

MS0805 is a hybrid molecule with an inorganic silsequioxane at the core and organic isooctyl groups attached at the corners of the cage. This rigid core acts like molecular ball bearing providing high film strength to reduce friction and wear. MS0805 is very stable even at high loadings and temperatures. It is also useful in thermoplastics reinforcement and as a porogen in biomimetic materials.



R = *i*-octyl

$(C_8H_{17})_n(SiO_{1.5})_n$ FW 1322.46 D₄²⁰ 1.01 n_D²⁰ 1.45
n = 8, 10, 12 (n=8 shown)

* Cage content ≥ 90%

Key Properties

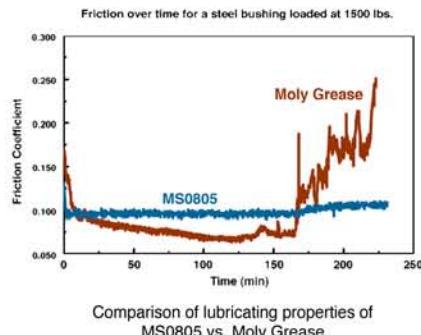
Appearance: colorless to pale-yellow viscous liquid

Viscosity (@ 25°C): 19 Poise

Thermal Stability (5% wt loss): 348°C

Solvent Solubility: THF, chloroform, acetone, ethanol, hexane

Solvent Insolubility: methanol, water, Diesel fuel



Relevant Literature

- Reinforcement of poly(ethylene terephthalate) fibers - *High Performance Polymers*, 17: 403–424, 2005
- Polypropylene nanocomposites - *Macromol. Symp.* 2006, 234, 59–67
- Biomimetic materials - US patent 7,572,872 B2

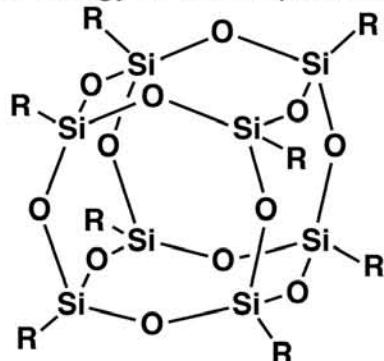
CAS 190732-67-3 Authorizations: None

\$60/100g \$195/kg

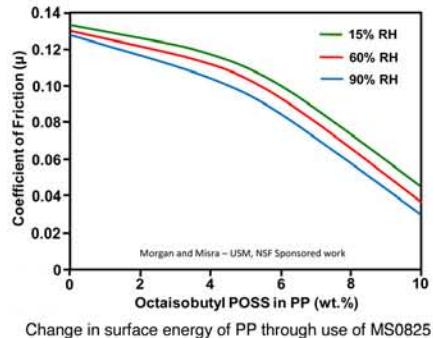
Octalsobutyl POSS®

MS0825

MS0825 is a hybrid molecule with an inorganic silsequioxane at the core and organic isobutyl groups attached at the corners of the cage. MS0825 can be used as a processing aid in plastics to improve flow. It has also been used to improve printability and modify surface energy of thermoplastics.

 $C_{32}H_{72}O_{12}Si_8$

$R = i\text{-butyl}$
FW 873.60

 $D_4^{20} 1.13$ $n_D^{20} 1.47$ **Key Properties****Appearance:** white powder**Bulk Density:** 0.63 g/mL**Surface Free Energy:** 17.1 mJ/m²**Thermal Stability (5% wt loss):** 216°C**Solvent Solubility:** THF, chloroform, hexane**Solvent Insolubility:** acetone, acetonitrile, methanol**Resin Solubility:** most thermoplastic resins**Relevant Literature**

- Polypropylene-POSS Nanocomposites - *Macromol. Symp.* 2006, 234, 59–67
- Modification of PP surface energies with POSS - *Journal of Polymer Science: Part B: Polymer Physics*, Vol. 45, 2441–2455 (2007)
- Polymer-Based Sausage Casing - *US Patent 7,833,594*
- Controlled Alignment of Nano-Barcodes - *US Patent 7,705,222*

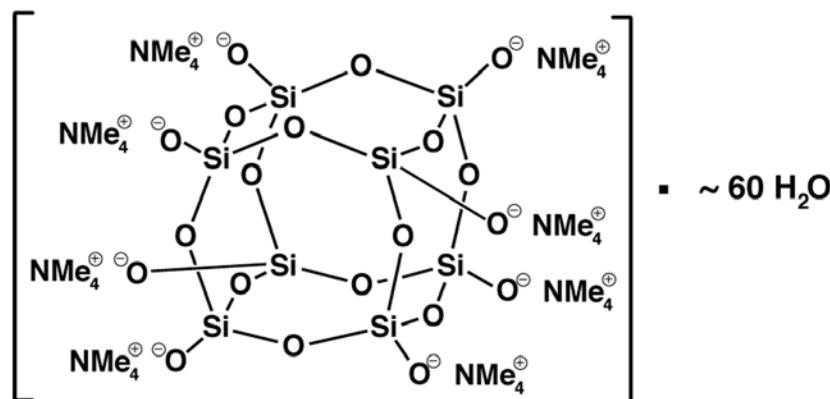
CAS 221326-46-1 Authorizations: TSCA

\$60/100g \$195/kg

OctaTMA POSS®

MS0860

MS0860 is a hybrid molecule with an inorganic silsequioxane at the core and anionic oxygen and a tetramethyl ammonium ion at the corners of the cage. MS0860 can be used as a glassification aid. It has also been used to improve the luminescence of quantum dots, and as a dispersion agent for nanocarbon and metal oxides.



$C_{32}H_{96}O_{20}Si_8 \cdot \sim 60 H_2O$ FW ~2218.75 D_4^{20} 1.23

Key Properties

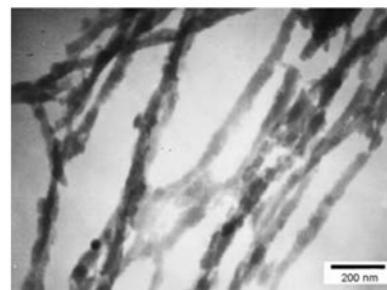
Appearance: white powder

Thermal Stability (5% wt loss): 67°C

Solvent Solubility: water

Solvent Insolubility: THF, chloroform, hexane, acetone

Resin Solubility: water soluble resins



20% MS0860 in polystyrene self-assembles into reinforcing fibrils
200 nm

Relevant Literature

- Fabrication of Lamellar Nanostructure - *J. of Composite Mat.*, 45(3) 2011, 307-319
- Covalent functionalization of metal oxide and carbon nanostructures - *Materials Research Bulletin* 45(12) Dec. 2010, 1894–1898
- Self-assembled quantum dots with enhanced photoluminescence - *Scripta Materialia* 66 (2012) 646–649

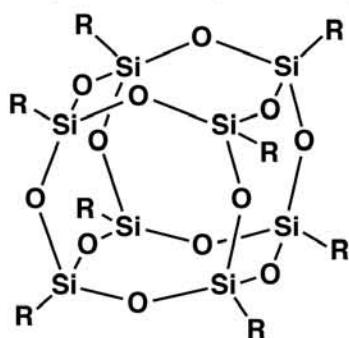
CAS 69667-29-4 Authorizations: None

\$100/100g \$350/kg

PEG POSS® Cage Mixture

PG1190

PG1190 is a hybrid molecule with an inorganic silsequioxane at the core and organic polyethylene glycol groups attached at the corners of the cage. This rigid core acts like molecular ball bearings and provides high film strength to reduce friction and wear. PG1190 is very stable even at high loadings and temperatures. It is also useful in lithium batteries, biomaterials, cosmetics, and dispersion of oxide and carbon particles.



$R = -CH_2CH_2(OCH_2CH_2)_mOCH_3, m = \sim 13.3$

$(C_{2m+3}H_{4m+7}O_{m+1})_n(SiO_{1.5})_n$ FW 5576.6 D_4^{20} 1.09 n_D^{20} 1.45
 $n = 8, 10, 12$ ($n=8$ shown), $m \cong 13.3$

* Cage content $\geq 92\%$

Key Properties

Appearance: clear, colorless liquid

Viscosity (@ 25°C): 280 centipoise

Thermal Stability (5% wt loss): 250°C

Solvent Solubility: water, alcohols

Solvent Insolubility: hexane

Resin Solubility: polyethers and polyesters



Standard Machine Oil PG1190
 Comparison of lubricating properties of PG1190 vs. standard machine oil

Relevant Literature

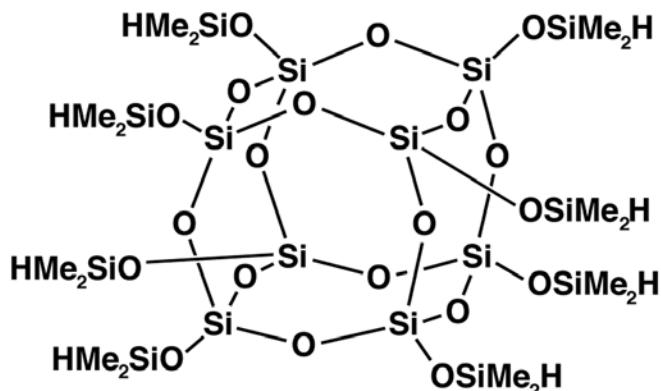
- Cell migration and proliferation - *Nano LIFE*, Vol. 2, No. 3 (2011)
- Additive for Unique Cosmetic Properties - *Cosmetics & Toiletries*, August 2008, pg 51-55.
- Electrolytes for Lithium Batteries - *Journal of The Electrochemical Society*, 153 (2) A239-A248 (2006)

CAS 1255649-48-9 Authorizations: None

\$80/100g \$240/kg

OctaSilane POSS®**SH1310**

SH1310 is a hybrid molecule with an inorganic silsesquioxane at the core and dimethylsilane groups attached at the corners of the cage. SH1310 can be used as a glassification aid and as a crosslinker. It has also been used for surface modification.

 $C_{16}H_{56}O_{20}Si_{16}$

FW 1017.99

 D_4^{20} 1.23 n_D^{20} 1.43**Key Properties****Appearance:** white powder**Thermal Stability (5% wt loss):** 210°C**Solvent Solubility:** THF, chloroform, hexane**Solvent Insolubility:** water, methanol**Resin Solubility:** alkene monomers**Relevant Literature**

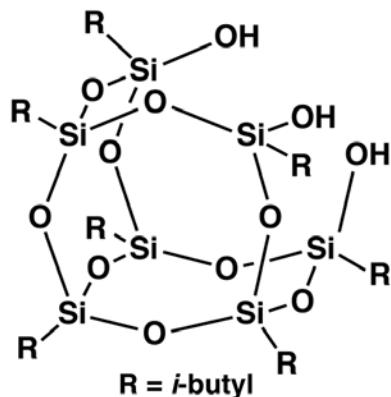
- Polyhedral Liquid Crystal Silsesquioxanes - *Appl. Organometal. Chem.* 13, 261–272 (1999)
- Hydrosilated Dendritic Networks of POSS Cores and Diacetylene Linkers - *Macromolecules*, 2009, 42 (12), pp 3992–4001
- Photosensitive compositions employing silicon-containing additives - *World Patent 2008/098189*

CAS N/A Authorizations: None**\$620/100g \$4340/kg**

TriSilanollsobutyl POSS[®]

SO1450

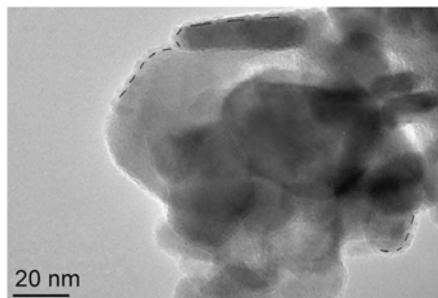
SO1450 is a hybrid molecule with an inorganic silsequioxane at the core, organic isobutyl groups attached at the corners of the cage and three active silanol functionalities. SO1450 can be used for surface modification of fillers, such as metal oxides, and other materials. It is also effective as an additive to thermoplastics and thermoset polymers for improving moisture resistance and process-ability.

 $C_{28}H_{66}O_{12}Si_7$

FW 791.42

 D_4^{20} 1.13 n_D^{20} 1.48

Key Properties

Appearance: white powder**Thermal Stability (5% wt loss):** 210°C**Solvent Solubility:** THF, chloroform, hexane**Solvent Insolubility:** acetonitrile**Resin Solubility:** aliphatic monomers, oligomers,
PP, PE, PATEM micrograph showing SO1450 on surface of
pigment particles

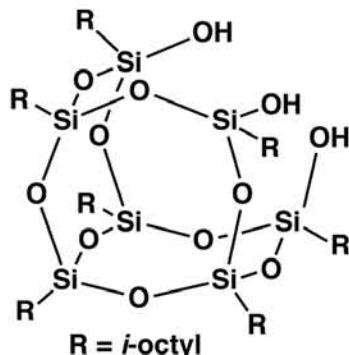
Relevant Literature

- Poly(vinyl alcohol)/Sulfonated POSS Hybrid Membranes for Direct Methanol Fuel Cell Applications - *Polym. Adv. Technol.* 2007; 18: 535–543
- Poly(ethylene terephthalate) Nanocomposites - *JAPS*, Vol. 107, 272–279 (2008)
- Amphiphiles at the Air/Water Interface - *JACS*. 2002, 124, 15194-15195
- TiO₂ surface modifiers for transparent acrylic UV blocking coating - *Progress in Organic Coatings* 74(4) Aug. 2012, 654–659
- Pigment surface modifiers for fluoropolymer based (TSSS) paint coatings - *Solar Energy Materials and Solar Cells* 95(2) Feb. 2011, 423–431

CAS 307531-92-6 Authorizations: TSCA**\$60/100g \$275/kg**

TriSilanolsooctyl POSS®**SO1455**

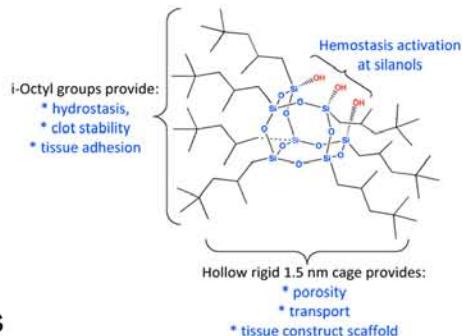
SO1455 is a hybrid molecule with an inorganic silsequioxane at the core, organic isoctyl groups attached at the corners of the cage and three active silanol functionalities. SO1455 can be used for surface modification of fillers or other materials. It is also effective as an additive to thermoplastics and thermoset polymers for improving moisture resistance and processability. SO1455 has also shown effectiveness toward skin adhesion, wound closure and hemostasis.

 $C_{56}H_{122}O_{12}Si_7$

FW 1184.16

 D_4^{20} 0.97 n_D^{20} 1.45

* Only available at 90-95% purity

Key Properties**Appearance:** clear, pale yellow viscous liquid**Thermal Stability (5% wt loss):** 363°C**Solvent Solubility:** THF, chloroform, acetone, ethanol, hexane**Solvent Insolubility:** acetonitrile**Resin Solubility:** aliphatic and aromatic monomers, oligomers, PP, PE, PA, cellulosics**Relevant Literature**

- Reinforcement of PET Fibers - *High Performance Polymers*, 17: 403–424, 2005
- Transparent Nanocomposites of POSS - *Proc. 227th ACS Meeting* 2004
- Stone Conservation - *ACS Appl Mater Interfaces*. 2009 Feb;1(2):393-401.

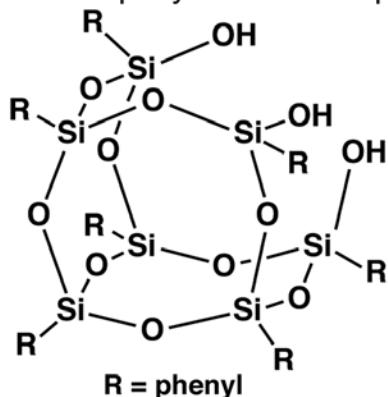
CAS 444619-08-3 Authorizations: TSCA

\$60/100g \$160/kg

TrisilanolPhenyl POSS®

SO1458

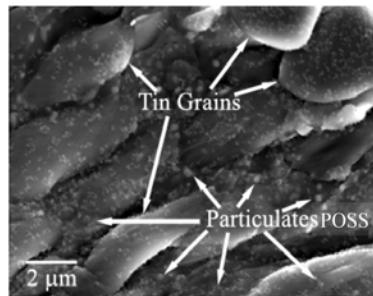
SO1458 is a hybrid molecule with an inorganic silsequioxane at the core, organic phenyl groups attached at the corners of the cage and three active silanol functionalities. SO1458 can be used as a processing aid in thermoplastics and thermosets while still retaining mechanical properties, for surface modification of fillers and other materials, or as an epoxy or BMI cure promoter.

 $\text{C}_{42}\text{H}_{38}\text{O}_{12}\text{Si}_7$

FW 931.34

 D_4^{20} 1.42 n_D^{20} 1.65

Key Properties

Appearance: white powder**Thermal Stability (5% wt loss):** 366°C**Solvent Solubility:** THF, chloroform, ethanol**Solvent Insolubility:** water, hexane**Resin Solubility:** most aromatic and aliphatic monomers, oligomers, and polymers (PP, PE, PA, PC, PET)

SEM micrograph showing SO1458 in lead-free tin solder. POSS leads to better wettability and rheological properties.

Relevant Literature

- Toughened PMMA - *Polymer* 47 (2006) 299
- Stone conservation - *ACS Appl Mater Interfaces*. 2009 Feb;1(2):393
- Improved carbon fiber composites - *Materials* 2011, 4(9), 1619
- Reinforcement in PP/sorbitol spun fibers - *Macromolecules*, 2012, 45(5), 2420
- Improved filler dispersion - *J. Appl. Poly. Sci.*, 2008, 108, 2503.
- Epoxidation catalyst - *Chem. Eur. J.*, 2000, 6 (1), 25.
- Osteoinductive bone graft - US Pat. No: 2009/0087473 A1
- Lead free solder - *J. Elec. Mat.*, 2005, 34 (11), 1399.

CAS 444315-26-8 Authorizations: TSCA**\$80/100g \$275/kg**

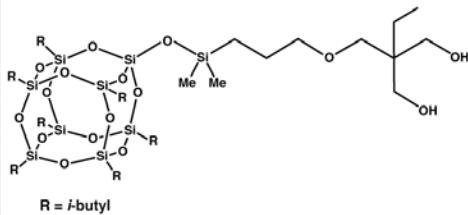
Custom Synthesis POSS®

TMP Diollsobutyl POSS®, 95%

AL0104



FW 1065.88



Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Appearance	white powder

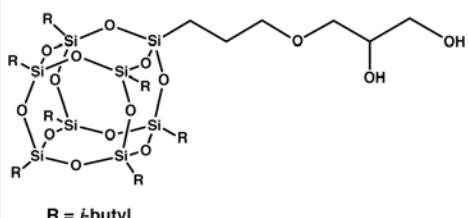
100g/\$962

1,2-Propanediollsobutyl POSS®

AL0130



FW 949.64

 D_4^{20} 1.13 n_D^{20} 1.47

Solvent Solubility	THF, chloroform, acetone, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	polyethers, polyalcohols
Appearance	white powder
Uses	monomer for condensation polymerizations to increase strength and toughness

CAS [480439-49-4]

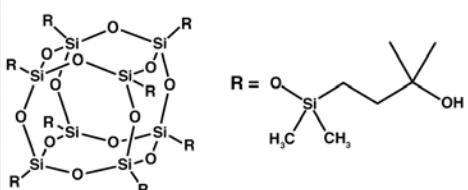
100g/\$624

Octa(3-hydroxy-3-methylbutyldimethylsiloxy) POSS®

AL0136

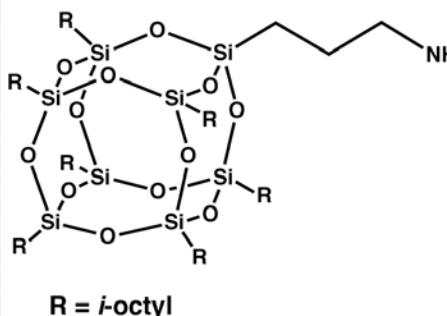


FW 1707.03



Solvent Solubility	toluene, THF, acetone
Solvent Insolubility	acetonitrile
Appearance	white powder
Uses	polyurethane crosslinker, adhesion promotion

100g/\$1,560

Custom Synthesis POSS®**Aminopropylsiloctyl POSS®****AM0270**

FW 1267.32

 D_4^{20} 0.99 n_D^{20} 1.46

Solvent Solubility
Solvent Insolubility
Resin Solubility
Appearance
Uses
Refrigerate

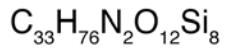
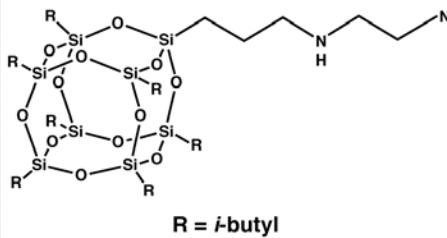
THF, chloroform, hexane
acetonitrile, methanol

aliphatic resins and aromatic resins
(epoxy, isocyanate)

oil

grafting agent, chain terminator,
improves hydrophobicity and processing

100g/\$234

Aminoethylaminopropylsobutyl POSS®**AM0275**

FW 917.65

 D_4^{20} 1.17 n_D^{20} 1.50

Solvent Solubility
Solvent Insolubility
Resin Solubility
Appearance
Uses
Refrigerate

THF, chloroform
acetonitrile, methanol

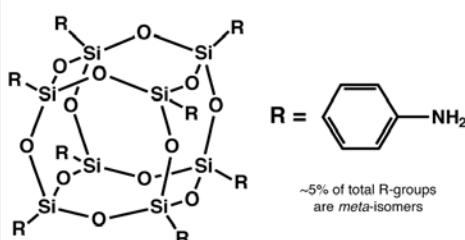
aliphatic resins

white powder

grafting agent, chain terminator to
improve processing

CAS [444315-16-6]

100g/\$260

OctaAminophenyl POSS®**AM0280**

FW 1153.63

Solvent Solubility
Solvent Insolubility
Appearance
Uses
Refrigerate

THF, chloroform, hexane
acetonitrile, methanol

light brown solid

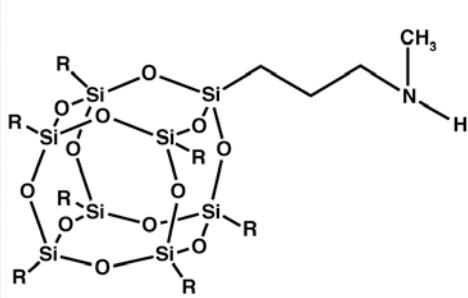
crosslinker, bioscaffold

100g/\$9,282

Custom Synthesis POSS®

N-Methylaminopropylsobutyl POSS®

AM0282



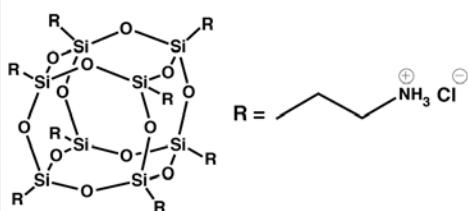
FW 888.61

Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile, methanol
Appearance	white solid
Uses	antioxidant for metals
<i>Refrigerate</i>	

100g/\$442

OctaAmmonium POSS®

AM0285



FW 1173.18

 D_4^{20} 1.40

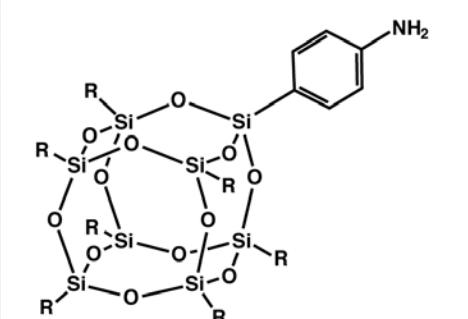
Solvent Solubility	water
Solvent Insolubility	hexane
Appearance	white powder
Uses	cation for surface modification, dendrimer core

CAS [150380-11-3]

100g/\$546

p-AminophenylCyclohexyl POSS®

AM0290



FW 1090.86

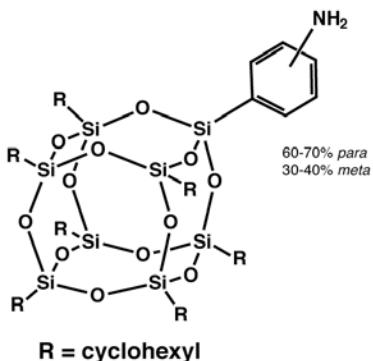
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Appearance	white to off-white solid
Uses	grafting agent, chain terminator
<i>Refrigerate</i>	

100g/\$4,108

Custom Synthesis POSS®

m-AminophenylCyclohexyl POSS®

AM0291



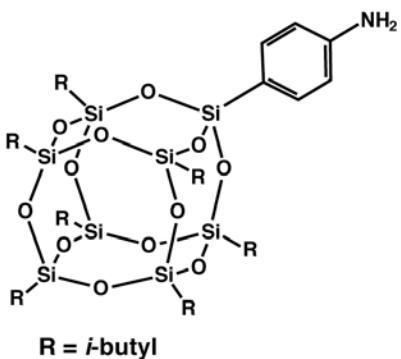
FW 1090.86

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Appearance	white to off-white solid
Uses	grafting agent, chain terminator
<i>Refrigerate</i>	

100g/\$3,276

p-Aminophenylsobutyl POSS®

AM0292



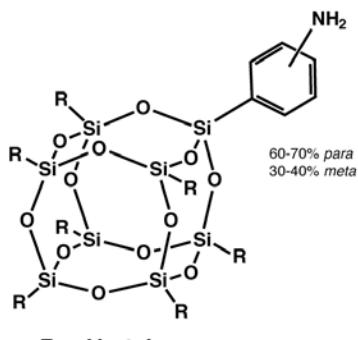
FW 908.6

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Appearance	white to off-white solid
Uses	grafting agent, chain terminator
<i>Refrigerate</i>	

100g/\$2,886

m-Aminophenylsobutyl POSS®

AM0293



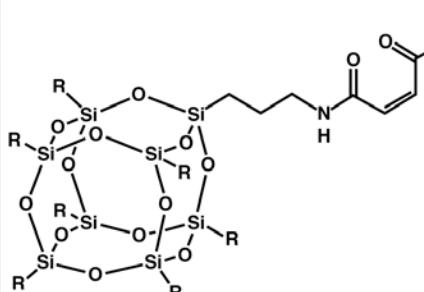
FW 908.6

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Appearance	white to off-white solid
Uses	grafting agent, chain terminator
<i>Refrigerate</i>	

100g/\$1,820

Custom Synthesis POSS®**Maleamic Acid-Cyclohexyl POSS®**

CA0295

**R = cyclohexyl** $C_{49}H_{87}NO_{15}Si_8$

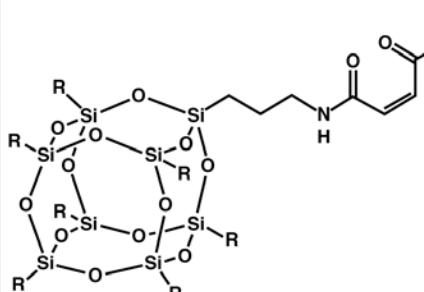
FW 1154.9

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Resin Solubility	polyamides, epoxy, polyester
Appearance	white to off-white solid
Uses	peptides, amino acids, dispersion aids

100g/\$2,184

Maleamic Acid-Isobutyl POSS®

CA0296

**R = *i*-butyl** $C_{35}H_{73}NO_{15}Si_8$

FW 972.64

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Resin Solubility	polyamides, epoxy, polyester
Appearance	white to off-white solid
Uses	peptides, amino acids, dispersion aids

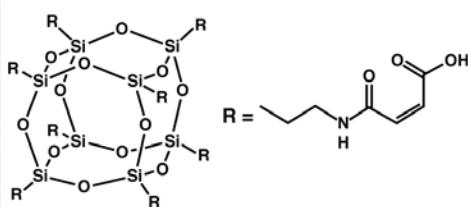
100g/\$338

OctaMaleamic Acid POSS®

CA0298

 $C_{56}H_{72}N_8O_{36}Si_8$

FW 1657.89



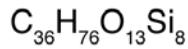
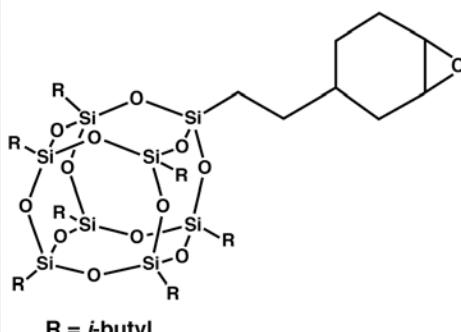
Solvent Solubility	DMF, DMSO
Solvent Insolubility	THF chloroform, hexane
Slightly Soluble	methanol, water
Resin Solubility	less soluble than monofunctional POSS® Amic Acids
Appearance	white to off-white solid
Uses	peptides, amino acids, dispersion aids

100g/\$1,326

Custom Synthesis POSS®

EpoxyCyclohexylsobutyl POSS®

EP0402



FW 941.66

D_4^{20} 1.17

n_D^{20} 1.50

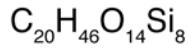
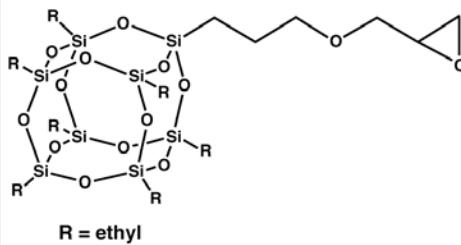
Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic resins, aromatic amines
Appearance	white powder
Uses	impact modifier, hydrophobic epoxide grafting agent

CAS [445379-56-6]

100g/\$260

GlycidylEthyl POSS®

EP0417



FW 735.25

D_4^{20} 1.25

n_D^{20} 1.47

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic and aromatic resins
Appearance	white powder
Uses	grafting agent, chain terminator

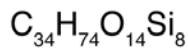
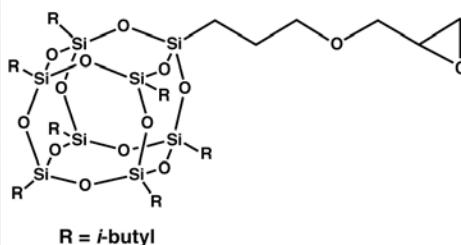
Refrigerate

* Only available at 90% purity

100g/\$962

GlycidylIsobutyl POSS®

EP0418



FW 931.63

D_4^{20} 1.14

n_D^{20} 1.47

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic and aromatic resins
Appearance	white powder
Uses	grafting agent, chain terminator, improved toughness

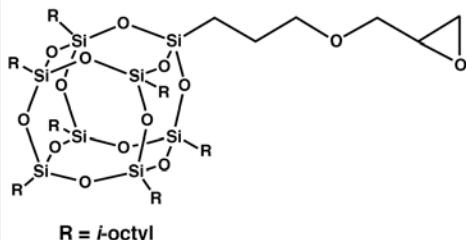
CAS [444315-17-7]

100g/\$312

Custom Synthesis POSS®

GlycidylSooctyl POSS®

EP0419

 $C_{62}H_{130}O_{14}Si_8$

FW 1324.37

 D_4^{20} 0.99 n_D^{20} 1.45

Solvent Solubility	THF chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic and aromatic resins
Appearance	white powder
Uses	grafting agent, chain terminator, hydrophobic modification

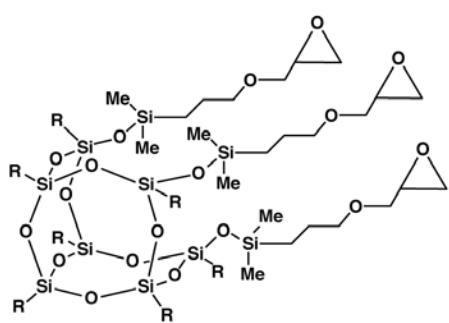
Refrigerate

* Only available at 90-95% purity

100g/\$624

TriglycidylCyclohexyl POSS®

EP0421

 $C_{66}H_{128}O_{18}Si_{10}$

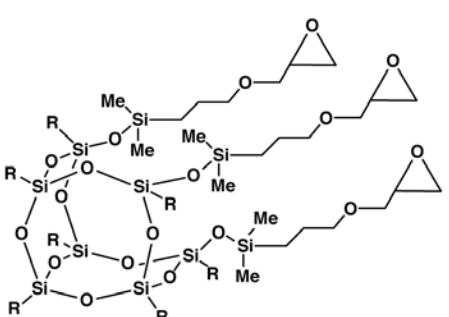
FW 1490.58

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic and aromatic resins
Appearance	viscous liquid
Uses	crosslinker, toughening agent

100g/\$962

TriglycidylIsobutyl POSS®

EP0423

 $C_{52}H_{114}O_{18}Si_{10}$

FW 1308.31

 D_4^{20} 1.08 n_D^{20} 1.47

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic and aromatic resins
Appearance	viscous liquid
Uses	crosslinker, toughening agent

100g/\$754

Custom Synthesis POSS®

OctaEpoxyCyclohexyldimethylsilyl POSS®

EP0430



The diagram shows a silsesquioxane molecule with three silicons at the vertices of a triangle, each bonded to two oxygens. The oxygens are also bonded to other silicon atoms. The R groups are shown as methyl groups (Me) attached to a silanol-like group. To the right, a detailed view of the R group shows a central silicon atom bonded to three methyl groups (Me) and one oxygen atom, which is further bonded to a carbon atom.

Solvent Solubility	THF, chloroform, toluene
Solvent Insolubility	water
Resin Solubility	aliphatic and aromatic epoxies
Appearance	waxy solid
Uses	cure accelerator

100g/\$1,378

OctaGlycidylmethoxymethyl POSS®

EP0435



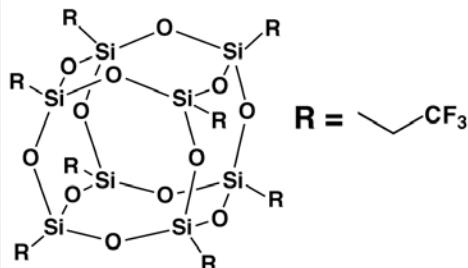
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	water
Resin Solubility	aliphatic and aromatic epoxies
Appearance	clear, viscous liquid
Uses	cure accelerator

100g/\$1,430

Custom Synthesis POSS®

Trifluoropropyl POSS® Cage Mixture

FL0578

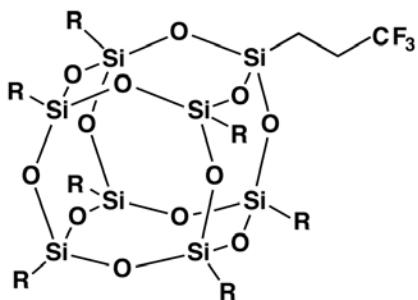

 $(C_3H_4F_3)_n(SiO_{1.5})_n$
n = 8, 10, 12 (n=8 shown)

Solvent Solubility	THF
Solvent Insolubility	acetonitrile
Resin Solubility	thermoplastics, fluorinated thermoplastics
Appearance	white powder
Uses	reduction of surface energy

100g/\$728

Trifluoropropylsobutyl POSS®

FL0583

 $C_{31}H_{67}F_3O_{12}Si_8$

FW 913.54

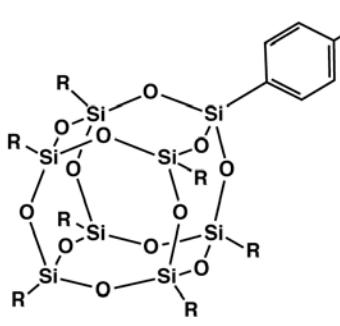
Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile
Resin Solubility	aliphatic resins
Appearance	white powder
Uses	reduction of surface energy, improved toughness
<i>Refrigerate</i>	

100g/\$832

Custom Synthesis POSS®

Chlorobenzylsobutyl POSS®

HA0605

 $R = i\text{-butyl}$ 

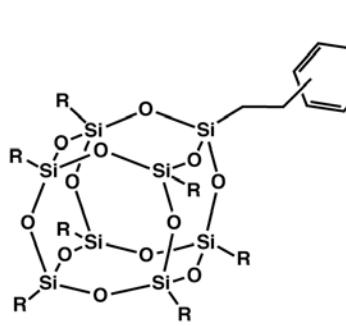
FW 942.05

Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile
Resin Solubility	aromatic monomers
Appearance	white powder
Uses	graftable agent, chain terminator, improved toughness and hydrophobicity

100g/\$702

Chlorobenzylethylsobutyl POSS®

HA0615

 $R = i\text{-butyl}$ 

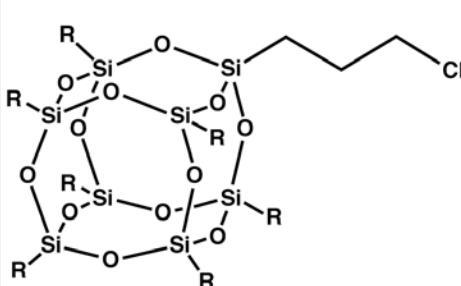
FW 970.11

Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile
Resin Solubility	aromatic monomers
Appearance	white powder
Uses	surface energy reduction, improved toughness and hydrophobicity

100g/\$702

Chloropropylsobutyl POSS®

HA0635

 $R = i\text{-butyl}$ 

FW 894.01

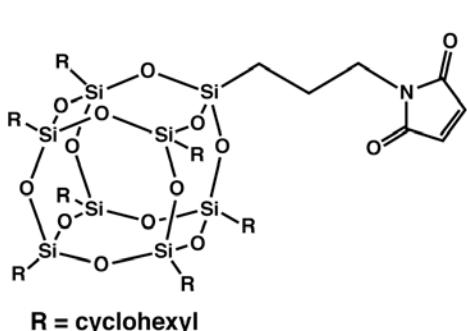
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Resin Solubility	aliphatic resins
Appearance	white powder
Uses	reagent and chain terminator, improved hydrophobicity

100g/\$624

Custom Synthesis POSS®

POSS® Maleimide Cyclohexyl

IM0670



R = cyclohexyl

C₁₆H₅₈NO₁₄Si₈

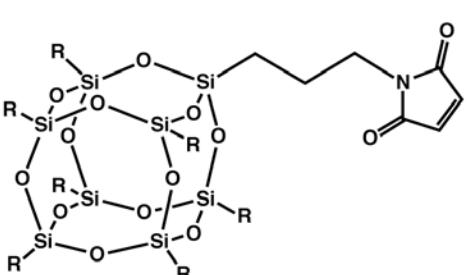
FW 1136.88

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	methanol, acetonitrile
Appearance	white to off-white solid
Uses	monomer maleimide modification, increases oxidative stability

100g/\$1,976

POSS® Maleimide Isobutyl

IM0673



R = *i*-butyl

C₃₅H₇₁NO₁₄Si₈

FW 954.62

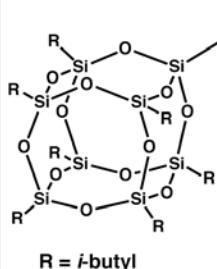
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	methanol, acetonitrile
Appearance	white to off-white solid
Uses	monomer maleimide modification, increases oxidative stability

100g/\$281

Custom Synthesis POSS®

Acrylolsobutyl POSS®

MA0701

 $C_{34}H_{72}O_{14}Si_8$

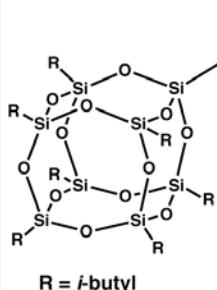
FW 929.61

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	methanol, acetonitrile
Resin Solubility	acrylic monomers and oligomers
Appearance	white powder
Uses	comonomer for increased hydrophobicity and toughness
<i>Refrigerate</i>	

100g/\$195

Methacrylolsobutyl POSS®

MA0702

 $C_{35}H_{74}O_{14}Si_8$

FW 943.64

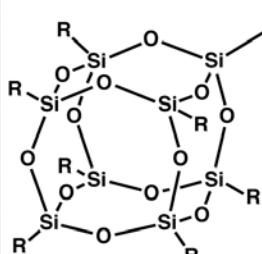
Solvent Solubility	THF, hexane, acetone
Solvent Insolubility	acetonitrile
Resin Solubility	acrylic monomers and oligomers
Appearance	white powder
Uses	comonomer for increased hydrophobicity and toughness

CAS [307531-94-8]

100g/\$280

Methacrylate Cyclohexyl POSS®

MA0703

 $C_{47}H_{84}O_{14}Si_8$

FW 1097.85

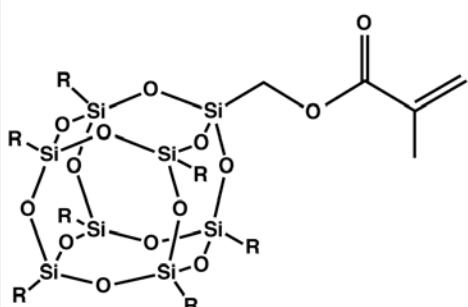
Solvent Solubility	THF, chloroform, ethyl acetate
Solvent Insolubility	acetonitrile
Appearance	white solid
Uses	highly reactive comonomer, increased T_g

100g/\$1,040

Custom Synthesis POSS®

Methacrylate Isobutyl POSS®

MA0706

 $C_{33}H_{70}O_{14}Si_8$

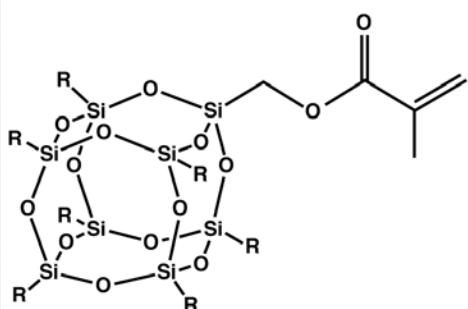
FW 915.58

Solvent Solubility	THF, chloroform, ethyl acetate
Solvent Insolubility	acetonitrile, methanol
Appearance	white solid
Uses	highly reactive comonomer, increased T_g

100g/\$624

Methacrylate Ethyl POSS®

MA0716

 $C_{19}H_{42}O_{14}Si_8$

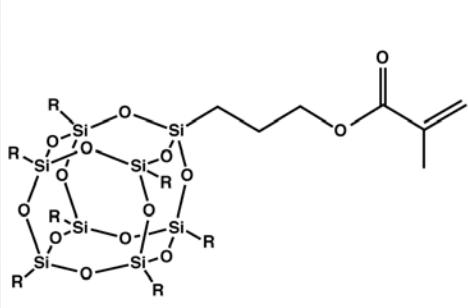
FW 719.21

Solvent Solubility	THF, chloroform, ethanol acetate
Solvent Insolubility	acetonitrile, methanol
Appearance	white solid
Uses	highly reactive comonomer, increased T_g

100g/\$676

MethacrylEthyl POSS®

MA0717

 $C_{21}H_{46}O_{14}Si_8$

FW 747.27

Solvent Solubility	THF, hexane, acetone
Solvent Insolubility	acetonitrile
Resin Solubility	acrylic monomers and oligomers
Appearance	white powder
Uses	comonomer for increased hydrophobicity and toughness
<i>Refrigerate</i>	

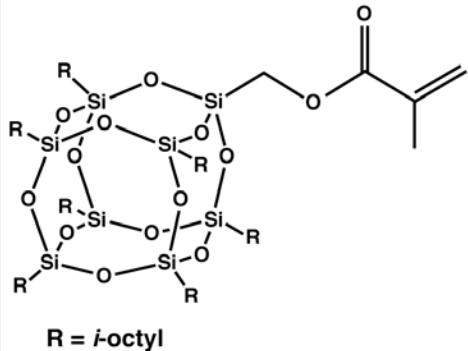
CAS [509106-74-5]

100g/\$962

Custom Synthesis POSS®

Methacrylate Isooctyl POSS®

MA0718



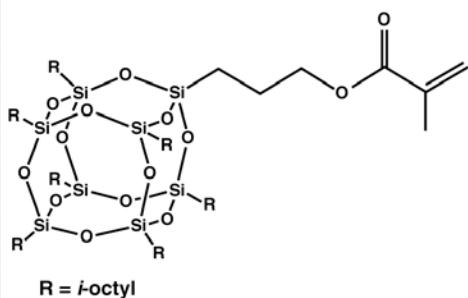
FW 1308.33

Solvent Solubility	THF, chloroform, ethyl acetate
Solvent Insolubility	acetonitrile, methanol
Appearance	clear, colorless oil
Uses	highly reactive comonomer, increased T_g
<i>Refrigerate</i>	

100g/\$312

MethacrylIsooctyl POSS®

MA0719



FW 1336.38

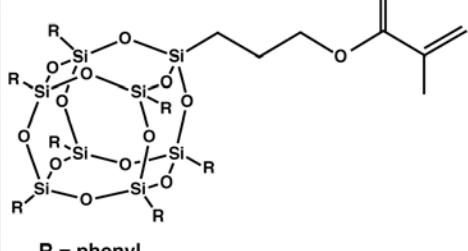
 D_4^{20} 0.995 n_D^{20} 1.45

Solvent Solubility	THF, hexane, acetone
Solvent Insolubility	acetonitrile
Resin Solubility	acrylic monomers and oligomers
Appearance	liquid
Uses	comonomer for increased hydrophobicity and toughness
<i>Refrigerate</i>	
* Only available at 85-90% purity	

100g/\$650

MethacrylPhenyl POSS®

MA0734



FW 1083.57

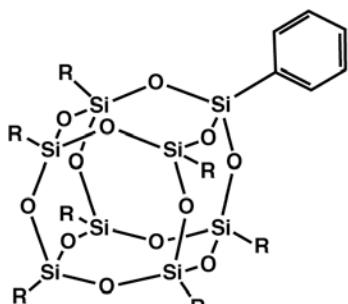
Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile, methanol
Appearance	white powder
Uses	comonomer in polymerizations
<i>Refrigerate</i>	

100g/\$1,066

Custom Synthesis POSS®

Phenylsobutyl POSS®

MS0813

 $R = i\text{-butyl}$ $C_{34}H_{68}O_{12}Si_8$

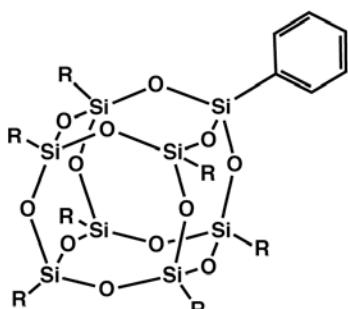
FW 893.59

Solvent Solubility	THF, cyclohexane, dichloromethane
Solvent Insolubility	acetonitrile, methanol, water
Resin Solubility	thermoplastic resins
Appearance	white solid
Uses	hydrophobicity aid for aromatic thermoplastics

100g/\$624

Phenylsooctyl POSS®

MS0814

 $R = i\text{-octyl}$ $C_{62}H_{124}O_{12}Si_8$

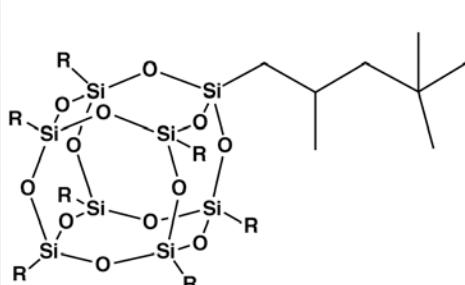
FW 1286.32

Solvent Solubility	THF, hexane, dichloromethane
Solvent Insolubility	methanol, water
Resin Solubility	most thermoplastic resins
Appearance	colorless to yellow oil
Uses	toughening agent, processing aid, hydrophobicity aid

100g/\$364

IsooctylPhenyl POSS®

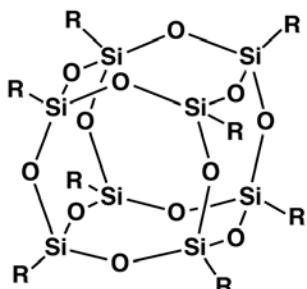
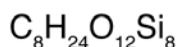
MS0815

 $R = \text{phenyl}$ $C_{50}H_{52}O_{12}Si_8$

FW 1069.62

Solvent Solubility	THF, hexane, dichloromethane
Solvent Insolubility	methanol, water
Resin Solubility	most thermoplastic resins
Appearance	white solid
Uses	toughening agent, processing aid, hydrophobicity aid

100g/\$624

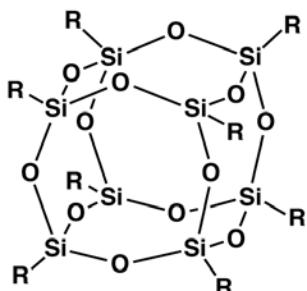
Custom Synthesis POSS®**OctaMethyl POSS®****MS0830****R = methyl**

FW 536.96

Solvent Solubility	very slightly soluble, THF, chloroform
Solvent Insolubility	benzene, acetone, acetonitrile, methanol
Resin Solubility	most thermoplastic resins (PA, PE, PP, PU)
Appearance	white powder
Uses	improves hydrophobicity, printability, processing

CAS [17865-85-9]

100g/\$104

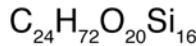
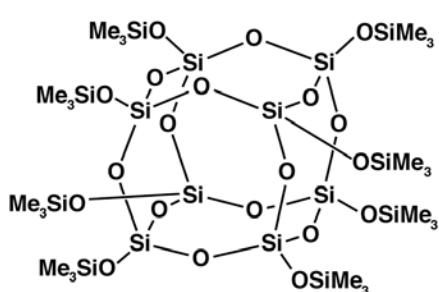
OctaPhenyl POSS®**MS0840****R = phenyl**

FW 1033.53

Solvent Solubility	very slightly soluble, THF, chloroform
Solvent Insolubility	benzene, acetone, acetonitrile, methanol
Resin Solubility	high temperature thermoplastic resins
Appearance	white powder
Uses	improves printability, modulus retention

CAS [5256-79-1]

100g/\$130

OctaTrimethylsiloxy POSS®**MS0865**

FW 1130.18

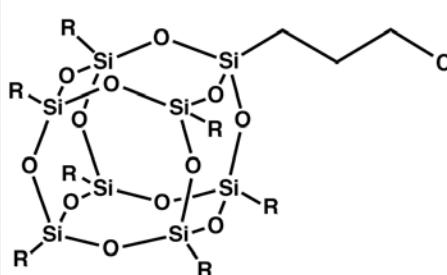
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	water, methanol
Resin Solubility	most aliphatic thermoplastic resins
Appearance	white powder
Uses	NMR standard

100g/\$546

Custom Synthesis POSS®

Cyanopropylsobutyl POSS®

NI0914



$C_{32}H_{69}NO_{12}Si_8$

FW 884.57

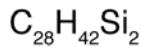
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile, methanol
Resin Solubility	aliphatic monomers and oligomers
Appearance	white powder
Uses	graftable agent, chain terminator

R = *i*-butyl

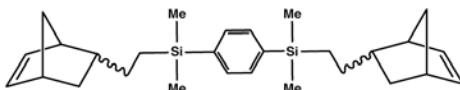
100g/\$1,170

HYBRID PLASTICS

NITRILES

Custom Synthesis POSS®**1,4-Bis(Norbornenylethyldimethylsilyl)benzene****NB1000**

FW 434.81



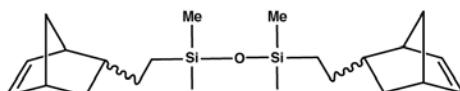
Solvent Solubility	THF, chloroform
Solvent Insolubility	methanol
Resin Solubility	most silicone and diene monomers and oligomers
Appearance	colorless to pale-yellow liquid
Uses	toughening agent, modulus increase, crosslinker

CAS [307496-40-8]

100g/\$546

1,3-Bis(Norbornenylethyl)-1,1,3,3-tetramethyldisiloxane**NB1010**

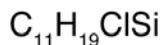
FW 374.71



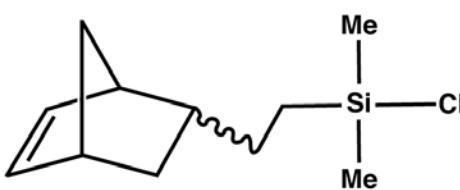
Solvent Solubility	THF, chloroform
Solvent Insolubility	methanol
Resin Solubility	most silicone and diene monomers and oligomers
Appearance	colorless to pale-yellow liquid
Uses	toughening agent, modulus increase, crosslinker

CAS [198570-37-7]

100g/\$338

Norbornenylethyldimethylchlorosilane**NB1017**

FW 214.81



Solvent Solubility	THF, chloroform
Solvent Insolubility	water, methanol
Resin Solubility	most silicone and diene monomers and oligomers
Appearance	colorless to pale-yellow liquid
Uses	coupling agent

Haz-Mat

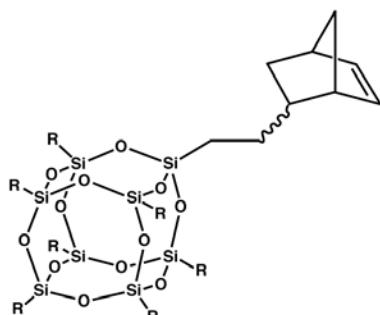
CAS [120543-78-4]

100g/\$234

Custom Synthesis POSS®

NorbornenylethylEthyl POSS®

NB1021

*R* = ethyl

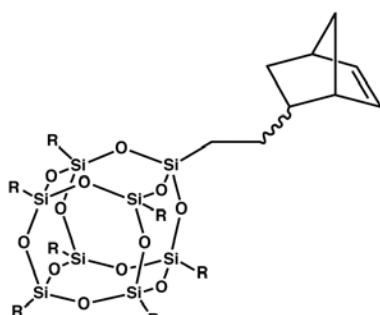
FW 741.41

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	most dienes
	19wt% in cyclopentadiene monomer
Appearance	26wt% in dicyclopentadiene monomer
Uses	white powder comonomer, toughening agent, processing aid

100g/\$1,092

NorbornenylethylIsobutyl POSS®

NB1022

*R* = *i*-butyl

FW 937.68

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	most dienes
	19wt% in cyclopentadiene monomer
Appearance	26wt% in dicyclopentadiene monomer
Uses	white powder comonomer, toughening agent, processing aid

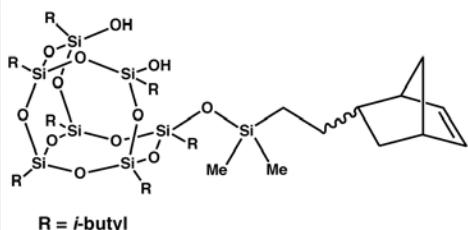
100g/\$702

NorbornenylethyDiSilanollsobutyl POSS®

NB1038



FW 969.76

*R* = *i*-butyl

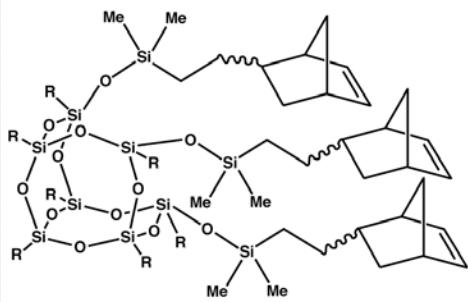
Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	acetonitrile
Resin Solubility	most dienes
	19wt% in cyclopentadiene monomer
Appearance	26wt% in dicyclopentadiene monomer
Uses	white powder comonomer, toughening agent, processing aid

100g/\$780

Custom Synthesis POSS®

Trisnorbornenylsobutyl POSS®

NB1070



R = *i*-butyl

C₆₁H₁₂₀O₁₂Si₁₀

FW 1326.45

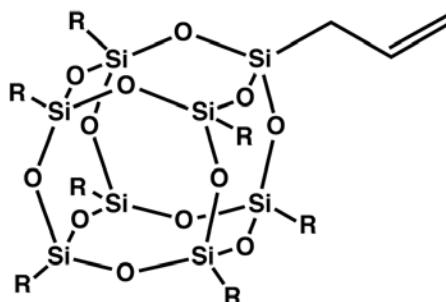
Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile, methanol, water
Resin Solubility	silicone, polyolefins
Appearance	colorless liquid
Uses	crosslinker, toughening agent, glassification agent

100g/\$962

Custom Synthesis POSS®

Allyllsobutyl POSS®

OL1118

*R* = *i*-butyl

FW 857.55

Solvent Solubility THF, chloroform, hexane

Solvent Insolubility acetonitrile

Resin Solubility most thermoplastics (PP, PE, PA)

Appearance white powder

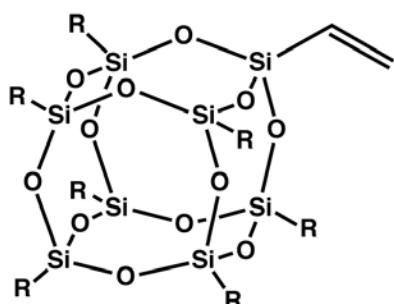
Uses graftable, toughening, hydrophobic agent

CAS [351003-00-4]

100g/\$286

VinylIsobutyl POSS®

OL1123

*R* = *i*-butyl

FW 843.52

Solvent Solubility THF, chloroform, hexane

Solvent Insolubility acetonitrile

Resin Solubility most thermoplastics (PP, PE, PA)

Appearance white powder

Uses graftable, toughening, hydrophobic agent

CAS [444315-18-8]

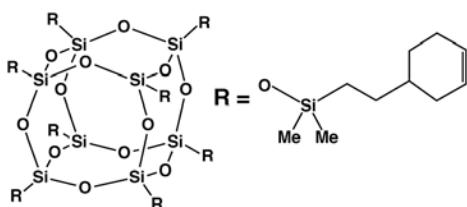
100g/\$624

OctaCyclohexenyldimethylsilyl POSS®

OL1159



FW 1883.42



Solvent Solubility THF, chloroform, toluene

Solvent Insolubility water

Appearance waxy solid

Refrigerate

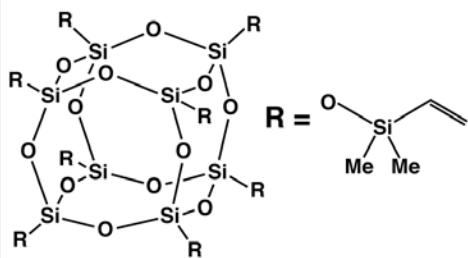
CAS [136849-03-1]

100g/\$1,300

Custom Synthesis POSS®

OctaVinyldimethylsilyl POSS®

OL1163

 $C_{32}H_{72}O_{20}Si_{16}$

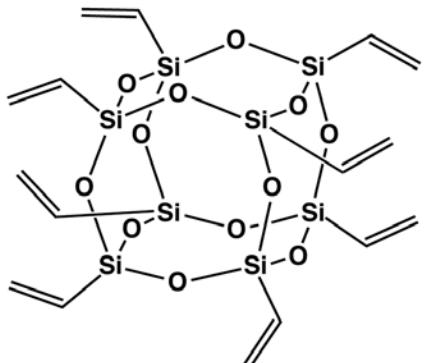
FW 1226.27

Solvent Solubility	THF, chloroform, hexane
Solvent Insolubility	water, methanol
Resin Solubility	most diene oligomers
Appearance	white powder
Uses	crosslinker in rubber, glassification agent

100g/\$1,300

Vinyl POSS® Cage Mixture

OL1170

 $(CH_2CH)_n(SiO_{1.5})_n$

FW 632.31

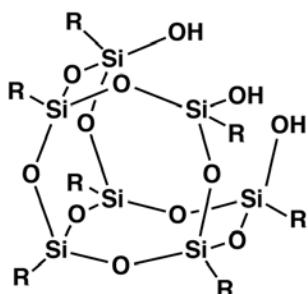
Solvent Solubility	THF, chloroform
Solvent Insolubility	methanol
Resin Solubility	7wt% in cyclopentadiene monomer
Appearance	white powder
Uses	crosslinking agent

100g/\$182

Custom Synthesis POSS®

TriSilanolCyclohexyl POSS®

SO1400

 $R = \text{cyclohexyl}$ $C_{42}H_{80}O_{12}Si_7$

FW 973.69

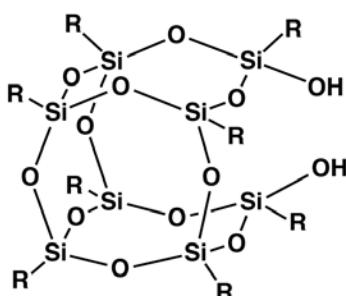
Solvent Solubility	THF, chloroform (slightly soluble)
Solvent Insolubility	water, acetonitrile
Appearance	white powder
Uses	surface modification, additive to thermoplastics and thermoset polymers for improving moisture resistance and processability

CAS [4115-83-7]

100g/\$702

DiSilanollsobutyl POSS®

SO1440

 $R = i\text{-butyl}$ $C_{32}H_{74}O_{13}Si_8$

FW 891.72

Solvent Solubility	THF, chloroform, acetone, ethanol, hexane
Solvent Insolubility	acetonitrile
Appearance	white powder
Uses	surface modification, additive to thermoplastics and thermoset polymers for improving moisture resistance and processability

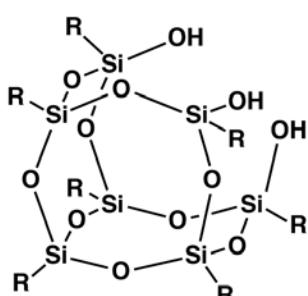
Refrigerate

CAS [307531-90-4]

100g/\$910

TriSilanolEthyl POSS®

SO1444

 $R = \text{ethyl}$ $C_{14}H_{38}O_{12}Si_7$

FW 595.04

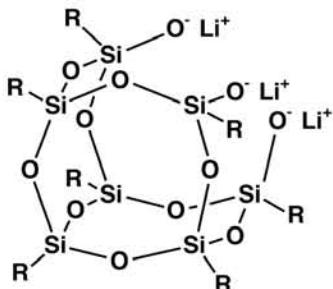
Solvent Solubility	THF, chloroform
Solvent Insolubility	water, acetonitrile
Appearance	white powder
Uses	surface modification, additive to thermoplastics and thermoset polymers for improving moisture resistance and processability

100g/\$910

Custom Synthesis POSS®

TriSilanolPhenyl POSS® Lithium Salt

SO1457

 $R = \text{phenyl}$ $C_{42}H_{35}Li_3O_{12}Si_7$

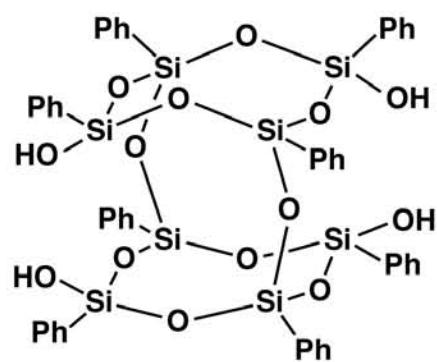
FW 949.15

Solvent Solubility	methylene chloride
Solvent Insolubility	water, THF, acetone, hexane
Appearance	white powder
Uses	Fire retardant synergist

100g/\$104

TetraSilanolPhenyl POSS®

SO1460

 $C_{48}H_{44}O_{14}Si_8$

FW 1069.54

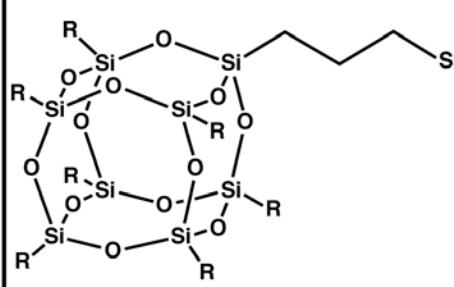
Solvent Solubility	THF, acetone, ethylacetate
Solvent Insolubility	methanol, ethanol, water, acetonitrile, chloroform
Resin Solubility	most aliphatic and aromatic monomers, oligomers, polymers, PP, PE, PA, PET, PC
Appearance	white crystalline solid
Uses	processing aid, surface modification, modulus retention, cure promotion in epoxy, BMI
<i>Refrigerate</i>	

100g/\$286

Custom Synthesis POSS®

Mercaptopropylsobutyl POSS®

TH1550

 $R = i\text{-butyl}$ $C_{31}H_{70}O_{12}SSi_8$ FW 891.63

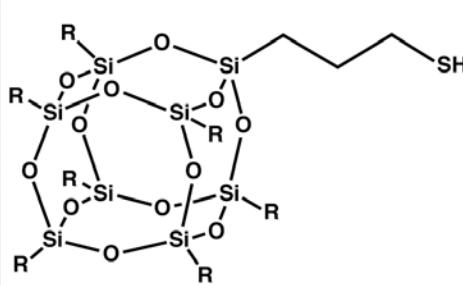
Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile
Resin Solubility	most aliphatic alkenes, rubber
Appearance	white solid
Uses	graftable agent and surface modification, hydrophobicity improvement

CAS [480438-85-5]

100g/\$624

Mercaptopropylsooctyl POSS®

TH1555

 $R = i\text{-octyl}$ $C_{59}H_{126}O_{12}SSi_8$ FW 1284.37

Solvent Solubility	THF, chloroform
Solvent Insolubility	acetonitrile
Resin Solubility	most aliphatic alkenes, rubber, silicones
Appearance	oil
Uses	graftable agent and surface modification, hydrophobicity, plasticization

Refrigerate

100g/\$676

Bulk POSS® Price List
prices shown in \$/kg

POSS® Chemical	10kg	100kg
AL0125	\$2,025	
AM0265	\$415	\$375
AM0281	\$255	
EP0408	\$221	\$168
EP0409	\$165	\$155
MA0735	\$189	\$147
MA0736	\$949	
MS0802	\$258	\$221
MS0805	\$111	\$89
MS0825	\$111	\$93
MS0860	\$263	
PG1190	\$189	\$176
SH1310	\$3,255	
SO1450	\$190	\$125
SO1455	\$100	\$74
SO1458	\$240	\$210