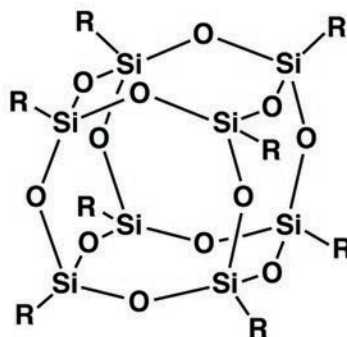


Isooctyl POSS® Cage Mixture

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

$(C_8H_{17})_n(SiO_{1.5})_n$
n = 8, 10, 12 (n=8 shown)

FW 1322.46

D_4^{20} 1.01 n_D^{20} 1.45

* Cage content ≥ 90%

Key Properties

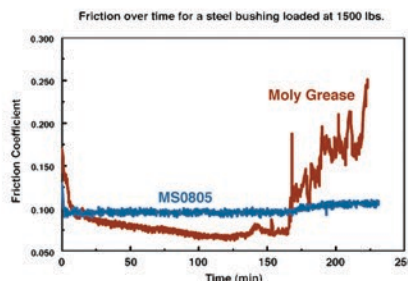
Appearance: colorless to pale-yellow viscous liquid

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



Comparison of lubricating properties of MS0805 vs. Moly Grease

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 1472635-27-0 Authorizations: INCI

\$150/100g \$350/kg