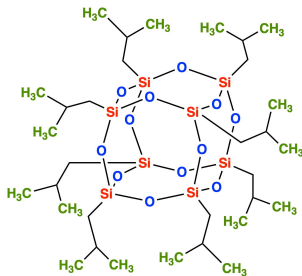


Octalsobutyl POSS®

INCI NAME: Isobutyl Polysilsesquioxane



Characteristic	Value	Characteristic	Value
Micro-Powder	100-200 micron	Surface Free Energy	17.1 $mJ m^{-2}$
Composition	$[C_4H_9SiO_{1.5}]_8 \Sigma_8$	UV absorption	200 - 300 nm
Molecular Weight	873.60	Solvent Solubility	20% cyclohexane
Viscosity @ 305 °C	2000-100 Pa s	Water Solubility	Insoluble
Relative Density	1.13 g/ml	Taste	None
Bulk Density	0.63 g/ml	Oral toxicity	$LD_{50} > 5g/kg$
Refractive index	1.47	Skin contact	Non-irritant
Melting Point (DSC)	264 °C	CASRN	221326-46-1
Melt Enthalpy	37.9 J/g	US FDA 21 CFR 177.1520	Pass
Hazardous	No	Volatile	No

DESCRIPTION

MS0825 is a hybrid molecule with an inorganic silsesquioxane core and organic isobutyl groups attached at the corners of the cage. It is a white, crystalline powder. Disperses to cage dimensions at ppm loading levels during polyolefin compounding.

BENEFITS

Improved processability, melt strength, film toughness and dispersion at ppm loadings.

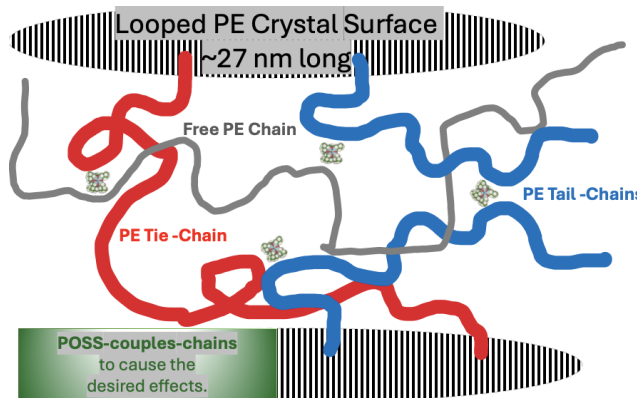
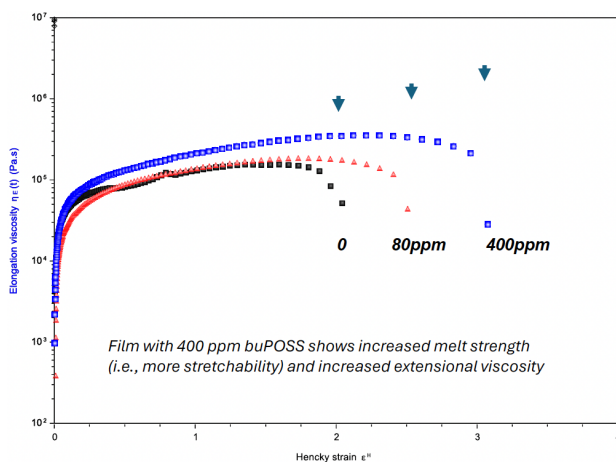
APPLICATIONS

MS0825 can be used as a processing aid in plastics to improve flow in textile, packaging, film and fiber applications.

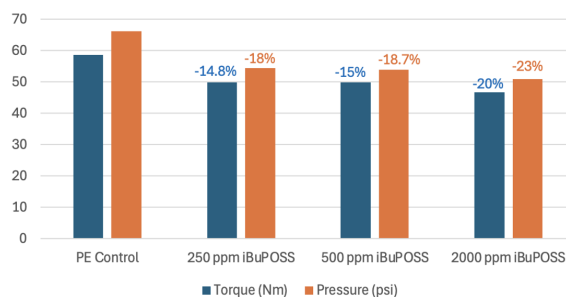
FASTER PROCESSING

The lubricity effect of MS0825 increases melt flow and decreases the screw torque/pressure during compounding.

Enhanced Melt Strength POSS builds melt strength by increasing stress transfer using "noncovalent coupling"



Torque and Barrel Pressure @ ppm Loadings



Related Literature

- Polyolefin Melt Strength Recovery @ ppm POSS® Levels.** A. Romo-Urbe, G. Moody, J.D. Lichtenhan, S. Hait, J. Morrison, 2025 SPE Polyolefin Proceedings
- Melt extrusion and blow molding parts-per-million POSS interspersed the macromolecular network and simultaneously enhanced thermomechanical and barrier properties of polyolefin films,** Polym Eng Sci. 2020, e25572. <https://doi.org/10.1002/pen.25572>
- POSS driven chain disentanglements, decreased the melt viscosity and reduced O2 transmission in polyethylene,** Polymer 165 (2019) 61–71, <https://doi.org/10.1016/j.polymer.2019.01.024>



HANDLING Product safety information required for safe use is not included in this document. Before handling, read product and material safety data sheets and container labels for safe use, physical health and hazard information. For material safety data information, contact Hybrid.