

Product Information - AM0281

N-Phenylaminopropyl POSS Cage Mixture

AM0281 POSS is a low melting solid polyamine.

APPEARANCE

AM0281 POSS is an easily handled solid when cold, yet a high viscosity and highly adhesive resin at room temperature.

DESCRIPTION

AM0281 POSS is a hybrid molecule with an inorganic silsesquioxane core and organic N-phenylaminopropyl groups attached to the silicon vertices of the cage.

APPLICATIONS

AM0281 POSS is reactive with epoxy and isocyanate ingredients. It provides enhanced impact resistance and dispersion capability. It is easily used as a high temperature adhesion promoter.

In general, AM0281 POSS provides increased use temperature as well as excellent water and solvent resistance. AM0281 POSS provides chemical and thermal stability to coatings. It can also be surface glassified to a silica-like composition. Surface glassification allows for mar resistance or for use as a bondable tie layer.

AM0281 CHARACTERISTICS

Appearance	Clear, amber low melting solid
Viscosity (@25°C)	71,763 Pa s
Viscosity (@37°C)	4,192 Pa s
Viscosity (@50°C)	370 Pa s
Density	1.20 g/ml
Refractive Index	1.57 (octamer)
Formula Weight	1490.28 (octamer)
AEW for AM0281	186.28
Resin Solubility	aromatic and aliphatic resins

REGULATORY STATUS

INCI, AM0281 CAS: 1708993-28-5

AM0281 is not a primary dermal irritant.

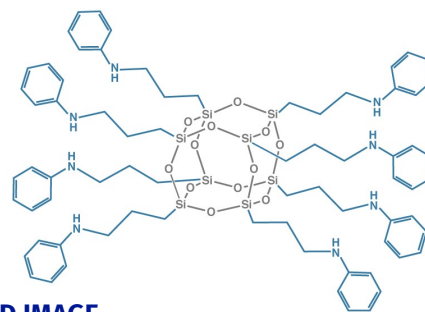
HANDLING PRECAUTIONS

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



PRODUCT BENEFITS

AM0281 POSS is an excellent compatibilizer and dispersant for particles, ingredients, and effects. It provides high temperature stability. It has a robust resistance to environmental degradation such as moisture or oxidation and provides UV C/B absorption.



FEATURED IMAGE

The AM0281 POSS octamer structure is shown.

EP0408 STRUCTURE AND FUNCTION

Compositionally, AM0281 POSS is a mixture of cages having 8, 10, and 12 silicon atoms, along with cage-like oligomers. The AM0281 POSS octamer is a hybrid, 1.5 nm molecule with an inorganic silsesquioxane core and organic N-phenylaminopropyl groups attached at the corners of the cage, which act as multifunctional reactive and dispersant arms. AM0281 POSS shows high compatibility and diluent properties in urethane, epoxy, and acrylic resins. As a cross-linker, AM0281 POSS retains modulus above glass transition and increases hardness.

RELATED LITERATURE

1. Polyurethane crosslinker for modulus retainment at extended use temperature: DOI: 10.1021/ma101825j
2. Silica dispersion agent and interfacial compatibilizer: DOI 10.1039/c4ra01419G
3. Additive for dyeable PP fiber: DOI 10.1007/s12221-014-2370-6
4. Additive for TPU increased viscosity and Tg, thermal stability enhancement: 10.1590/S1516-14392012005000085
5. Additive for degradation stability of epoxy resin: DOI 10.1002/pc.22271
6. Ballistic enhancement of Line X XS350 coating. DOI 10.1016/j.ijimpeng.2014.06.015
7. Explosive blast enhancement of Line X XS350 coating. DOI 10.1061/(ASCE)ST.1943-541X.0000361



www.hybridplastics.com