

Hybrid Plastics MS0825 Nanoreinforced[®] POSS[®] Polyamide 6

Category : Polymer , Thermoplastic , Nylon , Nylon 6

Material Notes:

Nanoreinforced[®] polyamide 6 (PA6) utilizes POSS[®] technology to achieve increased hydrophobicity, increased oil resistance, improved toughness and easier processability through structural control at the nanometer level. POSS[®]'s nanoscopic size, dispersion, and chemical structure lead to these enhancements which can be realized in any grade of polyamide. Mechanism of Modification: The hydrophobic properties of POSS[®] synergistically combines with polyamide morphology to create a nano-rough surface that is both hydrophobic and low friction. The technique is ideally suited to masterbatching. Enhanced hydrophobicity is observed by water contact angle differences for PA6 and Nanoreinforced[®] PA6. Water contact angle increases with POSS[®] content, and follows standard rules of mixing when let down from a masterbatch. Lower water uptake results from the enhanced hydrophobicity and durability increases by reducing hydrolytic degradation. Faster processing results from a lubricity effect that is imparted by the POSS and increases melt flow and decreases the screw torque required during compounding and during masterbatch let down. Increased toughness is observed at low loadings of POSS[®]. Other mechanical characteristics are maintained or improved compared to that of the base polyamide resin grade.

Suggested Applications textiles, packaging, film and fiber applications

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hybrid-Plastics-MS0825-Nanoreinforced-POSS-Polyamide-6.php

Physical Properties	Metric	English	Comments
Water Absorption at Saturation	6.7 %	6.7 %	15% POSS [®] loading (vs. 8% water absorption for neat nylon 6)
	6.9 %	6.9 %	3% POSS [®] loading (vs. 8% water absorption for neat nylon 6)

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	45.0 MPa	6530 psi	3% MS0825 addition (vs. 30 MPa for neat Nylon 6)
	50.0 MPa	7250 psi	5% MS0825 addition (vs. 30 MPa for neat Nylon 6)
	60.0 MPa	8700 psi	10% MS0825 addition (vs. 30 MPa for neat Nylon 6)
Elongation at Break	190 %	190 %	3% MS0825 addition (vs. 80% for neat Nylon 6)
	210 %	210 %	5% MS0825 addition (vs. 80% for neat Nylon 6)
	240 %	240 %	10% MS0825 addition (vs. 80% for neat Nylon 6)

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