Nanomed® Polyamide Compounds

Foster Nanomed® compounds are custom formulated to improve structural performance of medical grade polymers, while minimizing the effect on flexibility, ductility and surface finish. These unique formulations incorporate clay fillers that are less than one nanometer in thickness, with aspect ratios ranging from 300:1 to 1,500:1. At low loadings, Nanomed® additives interact at the molecular level to immobilize portions of the polymer chain; this phenomenon creates a reinforcing effect that increases stiffness, enhances dimensional stability, and improves gas barrier of materials. Foster Nanomed® Compounds are suitable for injection molding and extrusion applications. These compounds provide medical device design engineers with expanded performance of familiar polymers like Polyamides, Polyamide elastomers, Polyesters, etc.

In a study conducted by Foster Corporation, the effect of various loading levels of Nanomed® fillers on the physical properties of Rilsamid® AESNO MED polyamide was evaluated. Results concluded that polyamide resins containing Nanomed® fillers experience a significant improvement in tensile modulus and flexural modulus compared to unmodified materials.

Table 1. Mechanical properties for Rilsamid® AESNO MED polyamide compounds with Foster's Nanomed® technology.

LOADING	FLEXURAL STRENGTH (PSI)	FLEXURAL MODULUS (PSI)	TENSILE STRENGTH	TENSILE MODULUS(PSI)	NOTCHED IZOD FT-LB/IN
CONTROL	3,528	146,359	9,543	191,534	6.9
LOW	4,610	208,911	9,832	252,367	5.7
MEDIUM	5,336	239,768	9,955	298,813	4.2
HIGH	5,905	299,118	10,642	328,776	2.7

Figure 1. Flexural modulus of Rilsamid® AESNO MED polyamide compounds with Foster's Nanomed® technology.

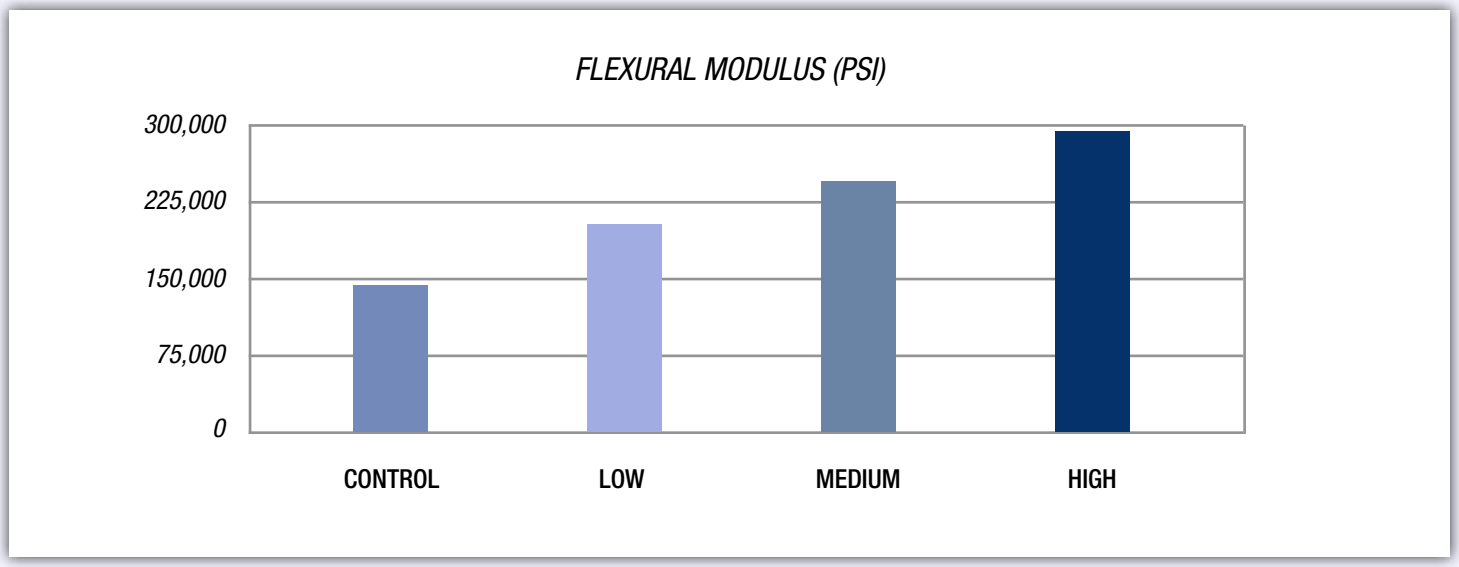
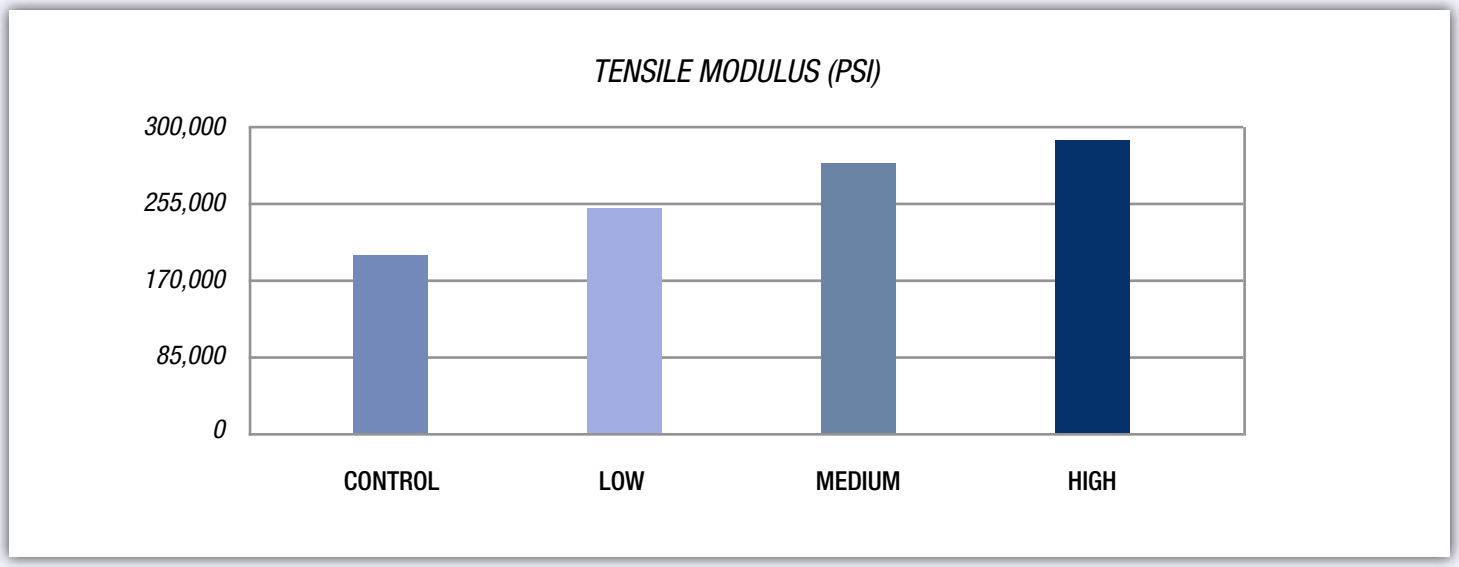


Figure 2. Tensile modulus of Rilsamid® AESNO MED polyamide compounds with Foster's Nanomed® technology.



*Rilsamid® is a registered trademarks of Arkema Inc.

***Properties reported here are expected characteristics based on trial. Foster cannot guarantee that the material in any particular shipment will conform exactly to the values provided. Before using this product the user is advised to make its own determination and assessment of the safety and suitability of the product for the specific use in question. No liability whatsoever can be accepted by Foster Corporation with regard to the handling, processing or use of the product or products concerned which must in all cases be employed in accordance with all relevant laws and/or regulations in force in the country or countries concerned.

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