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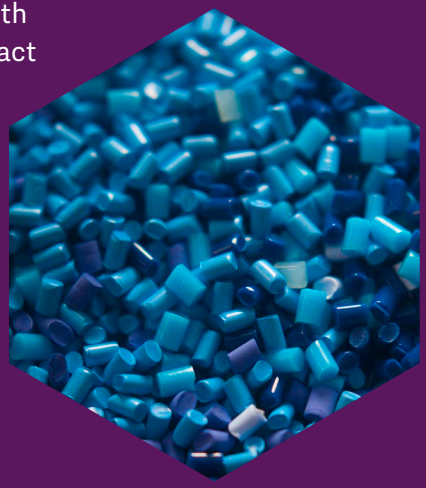
Nanomed® Compounds

Specialty Reinforced Polymers for Thin Wall Catheters and Structural Components



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, 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

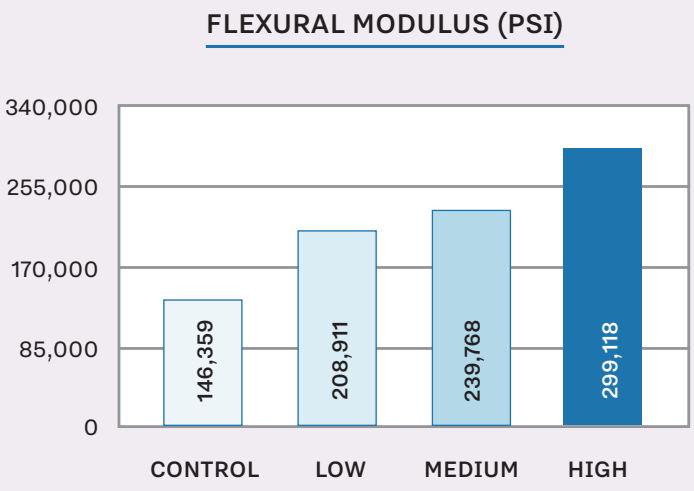


Figure 1. Flexural modulus of Rilsamid AESNO MED polyamide compounds with Foster's Nanomed technology.

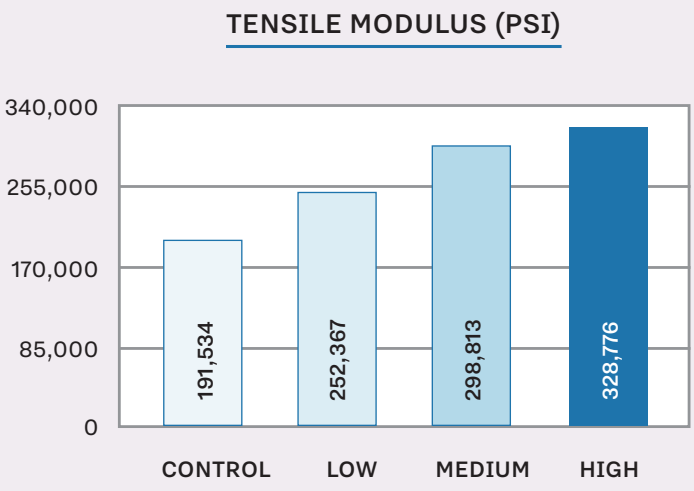


Figure 2. Tensile modulus of Rilsamid AESNO MED polyamide compounds with Foster's Nanomed technology.

*Rilsamid® is a registered trademark of Arkema Inc.

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