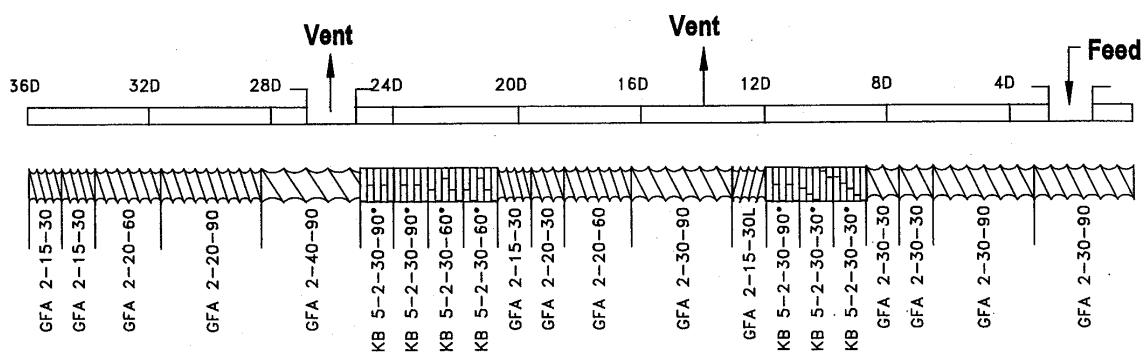


Lit. N-662 (10/04) Guidelines & Setup Parameters For Nylon 6,6 Nanocomposites

Nanomer® nanoclays are surface modified montmorillonite minerals intended for use in extrusion compounded plastics. When properly dispersed, Nanomer® products create a nanocomposite with enhanced barrier and mechanical properties. Choosing the suitable Nanomer grade for nylon 6,6 depends on the desired property set. Your Nanocor Sales Representative can assist with Nanomer selection.

Nanomer nanoclays disperse when sufficiently sheared in the melt phase. Twin screw compounders, mixers such as high shearing continuous mixers or internal mixers are recommended for this processing. Nanocor suggests the following screw configuration and compounding parameters as a guide to achieving optimal performance.

**FIGURE 1
SCREW ELEMENTS**



CONFIGURATION FOR NANOCLAY DISPERSION

<u>ZONE</u>	<u>TEMPERATURE (°C)</u>	<u>FUNCTION</u>
4D	Unheated	Conveying
8D	260	Conveying
12D	260	Melting / Dispersion
16D	270	Atmospheric Venting
20D	275	Conveying
24D	275	Kneading/Dispersion
28D	275	Vacuum Devolatilization (26in. Hg)
32D	275	Conveying
36D	280	Conveying and Building Pressure
Die	290	Strand Pelletizing

EXTRUSION SET-UP PARAMETERS

Materials Preconditioning

- * Nylon pellets dried to < 0.2% moisture
- * Nanomer powder dried 4 hours @ 80°C

Equipment Set-up

- * Recommended L/D = 36:1
- * Recommended Screw Speed = 400 rpm

Lit. N-662 (10/04) Guidelines & Setup Parameters For Nylon 6,6 Nanocomposites

Materials Feed

- * Nylon and Nanomer co-fed into compounder throat
- * Nylon and Nanomer fed with calibrated volumetric feeders

Nanocomposite films may be cast using high shearing single screw or twin screw compounders. Screw elements can be identical to those used for compounding the nanocomposite, but temperatures are higher.

CONFIGURATION FOR NANOCOMPOSITE FILMS

<u>ZONE</u>	<u>TEMPERATURE (°C)</u>	<u>FUNCTION</u>
4D	Unheated	Conveying
8D	260	Conveying
12D	260	Melting / Dispersion
16D	270	Atmospheric Venting
20D	275	Conveying
24D	275	Kneading/Dispersion
28D	275	Vacuum Devolatilization (26in. Hg)
32D	280	Conveying
36D	290	Conveying and Building Pressure
Die	290	12 in. Wide Film Die
Chill Roll	140	Cooling Extruded Film Unoriented Mono-layer

FILM SET-UP PARAMETERS

Materials Preconditioning

- * Nanocomposite pellets dried to < 0.1% moisture

Equipment Set-up

- * Recommended L/D = 36:1
- * Recommended Screw Speed = 150 rpm

Materials Feed

- * Nanocomposite fed by calibrated volumetric feeder
- * Nanocomposite fed into compounder throat

For more information on how Nanomer® nanoclays can work for you, contact Nanocor's Technical Service Group.

® Nanomer is a registered trademark of Nanocor, Inc