VESTAMID®

Product Information

VESTAMID® NRG 5901 BK

PA 12 FOR LINE PIPES AND FITTINGS

VESTAMID® NRG 5901 BK is a high molecular weight PA 12 material developed by Evonik. The superior performance characteristics make it an ideal choice for expanding the use of thermoplastic piping systems at higher operating pressures and larger diameters to replace metallic piping systems in a safe and cost effective manner. Besides extending the operating pressure limits of thermoplastic piping systems, VESTAMID® NRG 5901 BK offers many of the same benefits, and in most instances more superior performance, as conventional PE piping systems.

- Tough and durable
- Corrosion resistant
- Resistant to heavy hydrocarbons
- High resistance to Slow Crack Growth
- Increased installation efficiencies
- Reliable performance
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These characteristics make the VESTAMID® NRG 5901 BK material an ideal choice when selecting appropriate thermoplastic piping materials in extending your gathering and flow lines infrastructure. Besides extending the operating pressure limits of thermoplastic piping systems, VESTAMID® NRG 5901 BK offers many of the same benefits, and in most instances more superior performance, as conventional PE piping systems. We recommend a processing temperature between 230°C (446°F) and 260°C (500°F) - in some cases up to 280°C (536°F) - during the injection molding and extrusion process. The mold temperature should be within a range of 60°C (140°F) to 100°C (212°F). Drying at 80°C (176°F) for 2 hours to 4 hours before processing is recommended. Polyamide 12 is a high performance thermo-plastic polymer with increased performance characteristics that translates into safe operations over the life of the installed line pipe. It has a considerable record of safe and proven experience in many demanding applications, including fuel lines in passenger cars, air brake tubing in trucks and off-shore applications.

With its excellent UV resistance properties, NRG 5901 BK is well suited for long term outdoor applications.

Inside the original and undamaged packaging, the product has a shelf life of at least 2 years when stored in dry rooms at temperatures not exceeding 30°C.

Key Features

Industrial Sector
Energy, Oil and Gas

Resistance to
Heat (thermal stability), Hydrolysis / hot water, UV / light / weathering, Wear / abrasion, Fatigue resistance, Oil / fuels

VESTAMID®

Processing
Injection molding, Extrusion

Additives
Unfilled

Delivery form
Pellets, Granules

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	**181000 / -**	psi	ISO 527
Tensile strength	**5800 / -**	psi	ISO 527
Yield stress	**5800 / -**	psi	ISO 527
Yield strain	**11 / -**	%	ISO 527
Stress at 50% strain	**5370 / -**	psi	ISO 527
Stress at break	**6530 / -**	psi	ISO 527
Nominal strain at break, tB	**127 / -**	%	ISO 527
Charpy notched impact strength, +23°C	**28.5 / -**	ftlb/in^2	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -30°C	**10.9 / -**	ftlb/in^2	ISO 179/1eA
Type of failure	**C / -**	-	-
Charpy notched impact strength, -40°C	**8.56 / -**	ftlb/in^2	ISO 179/1eA
Type of failure	**C / -**	-	-

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	**349 / ***	°F	ISO 11357-1/-3
Glass transition temperature, DSC	**96.8 / ***	°F	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	**109 / ***	°F	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	**270 / ***	°F	ISO 306
Melting Temperature	**349**	°F	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	**1.01 / -**	g/cm^3	ISO 1183

Density	**1.01**	g/cm³	ASTM D 792

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	**5620 / ***	in³/lb	ISO 307, 1157, 1628

Characteristics

Applications
Corrosion protection, Tube and hose, Fittings

Processing
Profile extrusion, Pipe/Tube extrusion

Special Characteristics
U.V. stabilized, High viscosity

Features
Barrier properties, Low coefficient of friction, Lightweight, Weldable

Color
Black

Chemical Resistance
General chemical resistance