

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
-

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

Processing
Injection molding, Extrusion

Additives
Unfilled

Delivery form
Pellets, Granules

Mechanical properties ISO	dry / cond	Unit	Test Standard
Tensile modulus	1250 / -	MPa	ISO 527
Tensile strength	40 / -	MPa	ISO 527
Yield stress	40 / -	MPa	ISO 527
Yield strain	11 / -	%	ISO 527
Stress at 50% strain	37 / -	MPa	ISO 527
Stress at break	45 / -	MPa	ISO 527
Nominal strain at break, tB	127 / -	%	ISO 527
Charpy notched impact strength, +23°C	60 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -30°C	23 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-
Charpy notched impact strength, -40°C	18 / -	kJ/m ²	ISO 179/1eA
Type of failure	C / -	-	-

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature	176 / *	°C	ISO 11357-1/-3
Glass transition temperature, DSC	36 / *	°C	ISO 11357-1/-2
Temp. of deflection under load A, 1.80 MPa	43 / *	°C	ISO 75-1/-2
Vicat softening temperature A, 10 N, 50 K/h	132 / *	°C	ISO 306
Melting Temperature	176	°C	ASTM D 3418

Physical properties	dry / cond	Unit	Test Standard
Density	1010 / -	kg/m ³	ISO 1183

VESTAMID®

Density	1010	kg/m ³	ASTM D 792
---------	-------------	-------------------	------------

Polymer analytics	dry / cond	Unit	Test Standard
Viscosity number	203 / *	cm ³ /g	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