

MATERIAL PROPERTIES

MARKEL POLYAMIDE (nylon) THERMOPLASTIC RESINS

NYLON 6

Markel GP general purpose resin offers excellent strength, toughness, ductility and abrasion resistance. It provides good resistance to a wide range of chemicals, solvents, oils and greases. Its range of properties makes it particularly suitable in the manufacture of flexible tubing for automotive and industrial applications such as air conditioning tubes, corrugated tubing, paint spray hoses and solid mandrels used in the production of rubber hose. The maximum long term usage temperature is 100°C. Short term is 140°C.

NYLON 66

Markel High Pressure grade a heat stabilized, high molecular weight resin that offers a higher maximum operating temperature compared to Markel GP. The specific gravity of HG is 10% higher than other nylon grades. This translates to higher weight per length of tubing. The maximum long term usage temperature is 110°C. Short term is 150°C. The cost per pound is about 2x the cost of GP. Additional information can be found on the Markel data sheet HP-1000™ / HP-2500™.

NYLON 11

Markel Special Purpose grade has a slightly higher specific gravity and melt point, but is essentially the same as Markel FN except that it is created from grains as opposed to fossil fuels. The cost is about 20% higher than FN.

NYLON 12

Markel flexible grade resin has high flexibility and toughness. It is designed for direct food contact and is available in a transparent grade for use in liquid level gauges. Nylon 12 has extremely high cold impact strength. It is recognized for lower water absorption compared to GP and HP. FN has the lowest specific gravity of all grades. This yields weight savings which are so important to the automotive industry. Tubing made from this material will meet the requirements of SAE J844d, ISO 7628, and DIN 733378 / 74324 type PA12-HIPHL. It is specially suited for air brake tubing, fuel, vent and lubrication lines, and industrial pneumatic and hydraulic tubing. The non-toxic grade is ideally suited for food and beverage transfer. The maximum long term use temperature is 80°C. Short term is 110°C. The cost is more than 2.5 x the cost of GP. Additional information can be found on Markel data sheet FN-1000™ / FN-2000™.

GENERAL NOTES ON MARKEL POLYAMIDE RESINS

Polyamide is a versatile extrusion material that offers the most economic solution to many automotive and industrial applications. It can be clear, natural (cloudy), colored as extruded or colored after extrusion with dye. Tubing can be formed with the application of heat.

PROPERTIES COMPARISON CHART

Mechanical and thermal properties for these materials are shown on page two.

AVAILABILITY

Markel manufactures on demand to meet customer requirements.