Acetal Products:

Acetal provides high strength and stiffness coupled with enhanced dimensional stability and ease of machining. As a semi-crystalline material, it's also characterized by a low coefficient of friction and good wear properties, especially in wet environments.

Because acetal absorbs minimal amounts of moisture, its physical properties remain constant in a variety of environments. Low moisture absorption results in excellent dimensional stability for close-tolerance machined parts. In high moisture or submerged applications, acetal bearings outperform nylon 4 to 1. It's ideally suited for close tolerance mechanical parts and electrical insulators which require strength and stiffness. It also offers resistance to a wide range of chemicals including many solvents.

Power Plastics has both homopolymer and copolymer grades of acetal including enhanced bearing grade materials. Acetron® GP acetal is porosity-free and offered as our standard general purpose grade. For slightly higher mechanical properties, we offer a broad size range of the homopolymer acetal (Delrin*) products. For improved frictional properties PTFE-enhanced Delrin AF products are available.

Applications Include:

- Bearings and Bushings- Acetal offer excellent stability and good wear resistance in a variety of moist environments.
- Rollers- Guide rollers machined from Acetron® GP rod operate smoothly and reliably in lift gate systems used to load cargo onto truck beds. (Prior materials: Cast Iron, Cast Aluminum)
- Gears- Acetron® GP maintains tight tolerances despite environmental and clean in place chemical exposure on dairy equipment. (Prior materials: Bronze, Stainless Steel)

Nylon Products:

Nylon's toughness, low coefficient of friction and good abrasion resistance make it an ideal replacement for a wide variety of materials from metal to rubber. It weighs only 1/8 as much as bronze. Using nylon reduces lubrication requirements, eliminates galling, corrosion and pilferage problems, and improves wear resistance and sound dampening characteristics. Nylon has a proven record of outstanding service in a multitude of parts for such diverse fields as paper, textiles, electronics, construction, mining, metalworking, aircraft, food and material handling.

Nylon is easily fabricated into precision parts using standard metalworking equipment. It's good property profile combined with a broad size range availability have made the material very popular. Today, a variety of extruded and cast nylon grades are available to match specific application demands.

Applications Include:

- Bearings- Nylatron® NSM Nylon offers up to 10 times longer part life than standard type 6 nylon. (Prior material: Bronze)
- Rollers, Wheels, Wear Components- Nylon offers better wear resistance than other materials in a variety of wear applications. (Prior materials: Steel, Aluminum, UHMW-PE, Injection Molded Nylon)
- Wear Pads- Wear pads made of Nylatron® NSM nylon are lightweight, able to support heavy loads, and are non-abrasive to mating surfaces. (Prior material: Bronze and cast iron covered with UHMW-PE)
- Gears- Gears made of Nylatron® NSM nylon run quieter and wear longer without the need for lubrication on processing equipment. (Prior materials: Bronze and steel)

UHMW Products:

The excellent abrasion resistance of UHMW polymer is due to its ultra-high molecular weight. The abrasion resistance allows UHMW to be used as a bearing surface or sprocket contact point, reducing associated wear to mating components. UHMW outwears polished stainless steel by a factor of 5:1. This fact makes it ideal for conveyor wear points such as; chain guide, belt slider beds, dump truck liners, and general power transmission equipment. The durability is high, no particles will wear off or leave a residue...meaning it is approved by the FDA for contact with food. UHMW is very corrosion resistant. One form of corrosion is the continuous presence of water on a material. UHMW will NOT absorb any water over time. It is also very abrasion resistant. Some other beneficial aspects of this material are the good flow characteristics and its ability to absorb shock.

UHMW has a very low co-efficient of friction and even ice will not stick to its surface. Another outstanding property is its high impact strength which is maintained down to very low temperatures. The impact performance under multi-axial shock stress and high stress rate is remarkable. UHMW is available in sheet form or rod stock and is quickly machined. Unconventional machining techniques, allow parts to be fabricated far quicker than steel components.

Applications Include:

- Rollers
- Marine Environments
- Wear Pads
- Bushings
- Sprockets