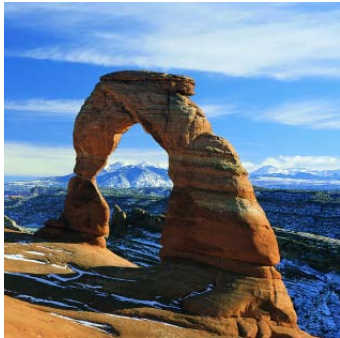


Stanyl®



Properties only matched by nature.



[Intro]

[There's no more room for modesty]

It's hard to be modest when you're as unique as Stanyl®. Since 1990 this superior performance material has been delivering results that have amazed some of the world's most critical manufacturers in the automotive and E&E industries as well as in many other high-tech applications. Wherever innovation is key, the properties of Stanyl exceed the highest expectations, time and time again.

This series of brochures demonstrate the heat resistance, mechanical durability, and excellent molding characteristics of Stanyl, its many applications, and the benefits for product developers, production planners, and injection molding companies. No other advanced performance material combines such high design freedom, productivity improvement, and opportunities for innovation.



Whether it's replacing metal in new-generation automotive components or meeting the fast-changing specifications for electronic components: Stanyl provides OEMs and suppliers with the technical support they need to turn their innovations into successes delivering added value through knowledge, performance, and confidence.



Properties only
matched by nature.



[The ultimate injection molding material]

Innovation starts where new solutions are needed. And as far as that's concerned, Stanyl has a proven track record. Improving comfort in cars by noise insulation and reducing vibrations in transmission systems... Increasing productivity by more reliable molding, assembly and finishing... Higher durability through wear-resistant, maintenance-free components... The inherently high performance of Stanyl is a constant inspiration for ideas that appeared unachievable yesterday, but that can be a trendsetting reality tomorrow.

Virtually every design concept, however complex, is a challenge that can be met by Stanyl, with no significant technical constraints. Higher machine productivity through shorter processing cycles and maximum utilization result in measurably lower production costs. Lower weight, chemical stability and scrap and reject reduction, save energy and minimize the environmental burden.

Compared to other heat-resistant PPA/PPS materials, as well as with numerous existing metal applications, Stanyl is in many respects the ultimate injection molding material for innovation, process optimization, and performance improvement. Even in completely new application areas, such as components for aircraft engines or automotive drivelines in which the use of durable, heat-resistant engineering thermoplastics has never before been considered, Stanyl offers solutions that until recently were unthinkable.



For manufacturers who are seeking competitive advantage, Stanyl is the only brand that combines both economic benefits and superior application performance. After years of research and development, and with a whole range of significant achievements, the characteristic modesty of the people behind Stanyl — people who have dedicated all their knowledge and experience to their customers' success — is no longer appropriate to the Stanyl brand. If we list all the existing materials, there's only one supplier that outperforms Stanyl... and that's nature itself.

But if you don't have time for millions of years of evolution, and you'd like — ideally — to be on the market tomorrow with a product that only nature can beat, then reading this brochure is the first step.



Astonishing **Stanyl®**

[Automotive]

[Engine]



Replacing the aluminum structural support with Stanyl in timing chain tensioners reduces weight, lowers system cost and helps reduce noise.



Excellent wear resistance coupled with fatigue and creep resistance delivers part performance, extended lifetimes, and higher reliability for belt tensioner components made from Stanyl.

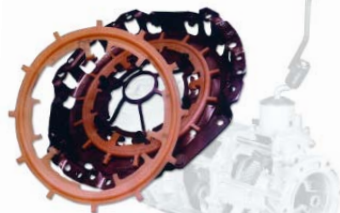


Replacing metal with Stanyl in valve lifter guides significantly lowers costs by as much as 60%. The wear resistance of Stanyl in high temperature engine environments enables longer part life-time in high PV conditions than with other materials.

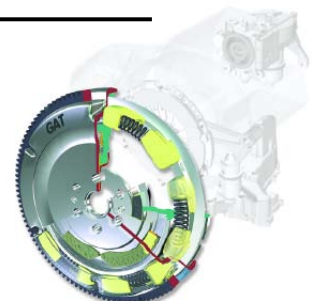


Recyclable filters made from Stanyl are replacing traditional metal oil filters, saving weight and cost. The new filters retain torque and prevent oil leaks in the housing through Stanyl's excellent heat and creep resistance.

[Transmission]



Metal replacement in clutch rings is possible with the high stiffness and excellent high temperature wear resistance of Stanyl.



Only Stanyl has the wear resistance to make plastic sliders possible. Stanyl lowers the frictional resistance and lubrication requirements compared to metals.



Bearing cage performance is improved and system costs reduced through the excellent oil, abrasion, and fatigue resistance of Stanyl.



[Air-fuel]



Replacing metal with Stanyl in air intake manifolds operating at higher temperatures and pressures, cuts production costs by up to 30% and reduces part weight by up to 50%.



Stanyl gives easier molding and reduced cycle times for intercooler end caps compared to other high temperature polyamides. Its superior combination of stiffness and strength at high temperatures provides for more reliable sealing and substantially better performance in dynamic fatigue testing.

[Electrical Components]



Easier encapsulation, excellent resistance to engine and transmission oils, and good creep resistance give more secure fixing and sealing of engine mounted automotive sensors.

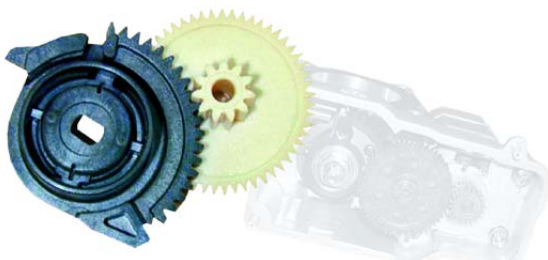


Shorter cycle times and better processing are the benefits that Stanyl brings to ignition connectors. In use, Stanyl's heat and fuel and oil resistance and better mechanical properties ensure greater durability and reliability.



Compared to other high temperature materials like PES & PPS, alternator parts made with Stanyl achieve better processing, shorter cycle times, and lower overall cost.

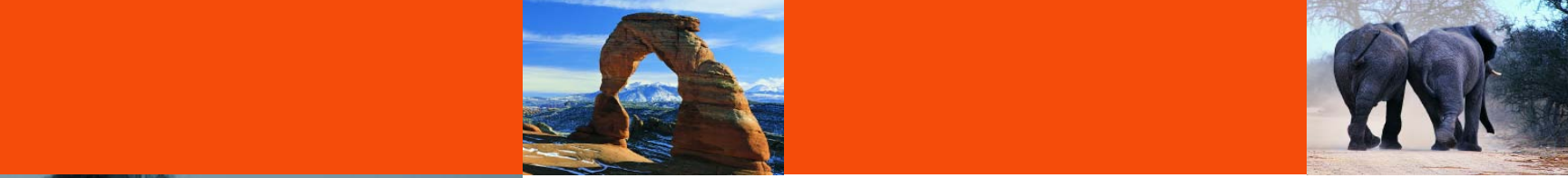
[Gears]



Stanyl actuator gears are more cost effective, lighter and maintain a higher product reliability over the application life cycle than metal. Compared to other plastics, Stanyl allows for higher torques and smaller form factors.

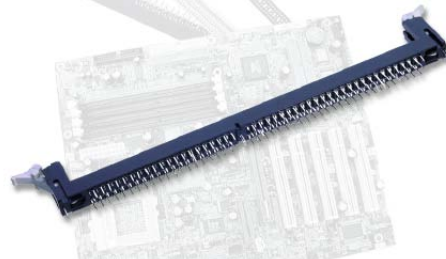


Lawn mower starter gears made with Stanyl achieve higher torques than other plastics through Stanyl's dimensional stability and wear & friction resistance.

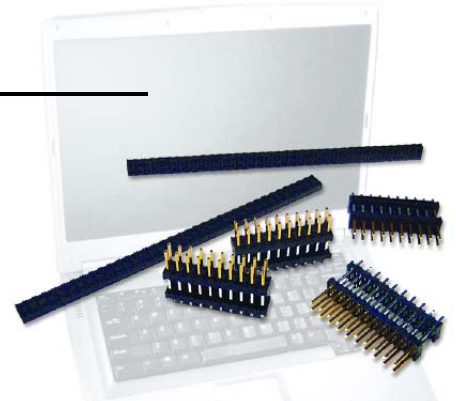


[Electrical and Electronics]

[Connectors]



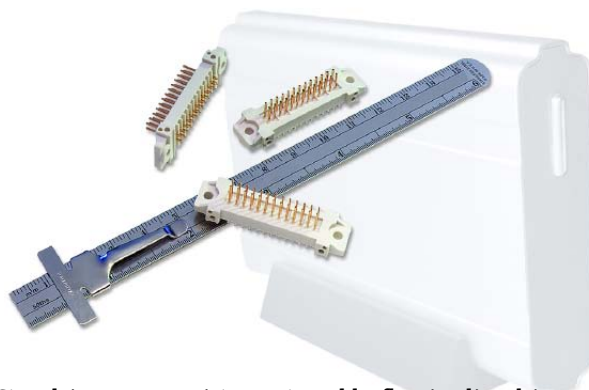
An excellent balance of melt flow ("LCP-like") with the highest weld-line strength allows thinner walls, fine pitches (to 0.8mm) for memory connectors and better performance than other materials on quality criteria.



Stanyl reduces flash and provides for better pin insertion than LCP, allowing for processing consistency of 2 mm connector part dimensions.



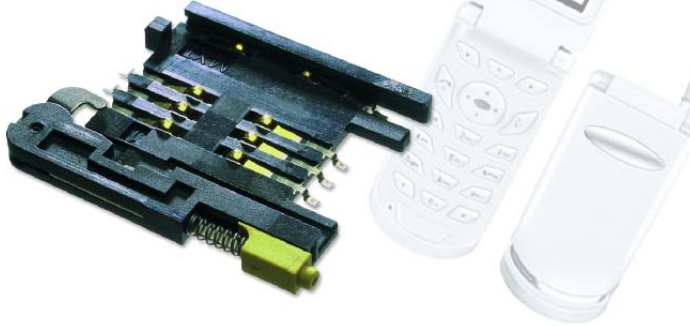
As FPC and BTB connectors get smaller, Stanyl ensures the highest reliability to end-users through Stanyl's excellent latch fatigue and strength and the highest pin retention for repeated plug-in/plug-out resistance.



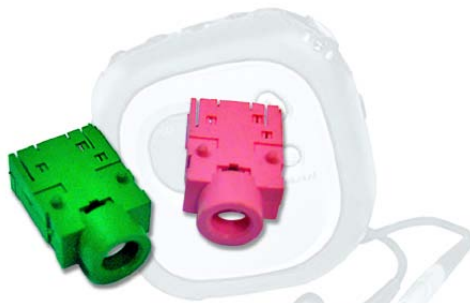
Stanyl improves resistance to cable flex in disc drive connectors through its toughness, mechanical resistance and superior pin retention, leading to better productivity than with LCP or other high temperature polyamides.



[Connectors]



For maximum reliability and lowest end-customer complaints on parts subject to multiple slide-in card operations Stanyl lends toughness to SIMM connectors better than LCP and PPA.



Stanyl is easier to color with better, cleaner and more stable colors, for surface-mount connectors used in attractive, designer styled consumer electronics.



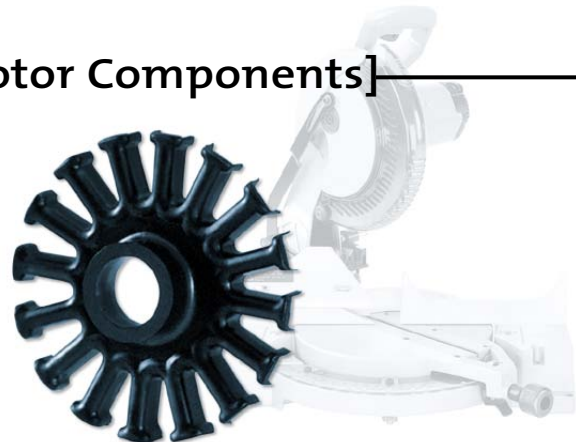
I/O connectors can meet the environmental trend to lead-free soldering at high temperatures with Stanyl's retention of stiffness at soldering temperatures, greatest reliability and high pin retention.

[Bobbins]



Stanyl allows for miniaturization, (lead-free) SMT soldering and remains cost-effective with UL class H performance giving the lowest reject rates and highest manufacturing productivity for wire-wound components.

[Motor Components]



Stanyl allows thinner designs and higher winding speeds, with lowest reject rates for end laminates up to UL class F.

Astonishing **Stanyl®**



[Other Applications]

[House and Garden]



Stanyl improves the performance of housings at higher temperatures and reduces costs through significant improvements in cycle times.



Replacing metal end-plates with Stanyl on iron boards increases the design flexibility and reduces the weight of the board.



Stanyl extends the performance reliability of safety switch components. Its low creep at high temperatures prevents part deformation, maintaining essential design characteristics.

[Other Transportation]



Noise from aircraft engines is reduced by infill panels that control the airflow. Stanyl's strength, stiffness, toughness and moldability from high flow grades, allows complex geometry part production, replacing thermoset with significant weight and cost savings.



Replacing die cast aluminum with Stanyl leads to cost savings for ATV transmission covers through single step production and the elimination of separate finishing operations.



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