



Stanyl®

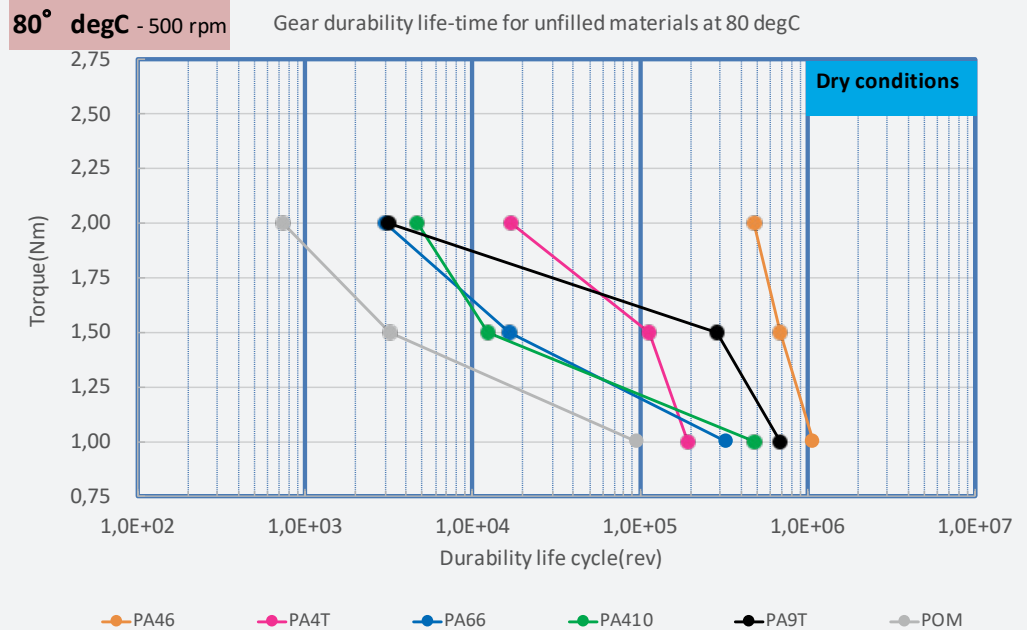
The durable, space saving solution for small appliance gears

Stanyl® PA46 is the material of choice for high demand wear and friction applications, especially gears. Stanyl has a proven track record for durability and reliability. Stanyl gears meet high-load requirements using compact designs in low to moderate temperature environments.

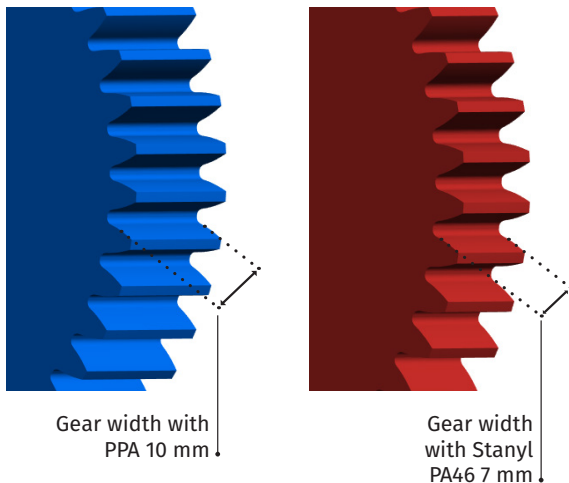
Small household appliances — blenders, juicers, food processors, robot vacuum cleaners, etc. — can all utilize gears that operate in low to moderate temperatures. Engineers and designers of small appliance gear applications need a material that fulfills the challenges of a compact design space and lifetime requirements, along with noise reduction.

For small appliance gears, requirements such as operating loads, temperature, rotation speed, and available design space govern the choice of the polymer gear material.

The graph shows the performance of PA46 gears compared to PPA, PA66, PA410 and POM gears at moderate temperatures (80 deg. C).



Shown below, a smaller gear width does not compromise performance. The gear width with Stanyl PA46 uses 30% less material, which translates to a savings of 30% weight and design space.



DSM – Bright Science. Brighter Living.™

Royal DSM is a global, purpose-led, science-based company active in Nutrition, Health and Sustainable Living. DSM's purpose is to create brighter lives for all. DSM addresses with its products and solutions some of the world's biggest challenges while simultaneously creating economic, environmental and societal value for all its stakeholders – customers, employees, shareholders, and society at large. DSM delivers innovative solutions for human nutrition, animal nutrition, personal care and aroma, medical devices, green products and applications, and new mobility and connectivity. DSM and its associated companies deliver annual net sales of about €10 billion with approximately 23,000 employees. The company was founded in 1902 and is listed on Euronext Amsterdam.

Stanyl PA46 can deliver to application designers and engineers in this gear application vs. PPA, PA66, PA410 and POM:

- Twenty times (20x) longer lifetime minimum at 2Nm torque
- 60% more torque capability
- 30% space savings by reducing the gear width without compromising on performance
- Up to 30% lower weight depending on gear flange thickness

Stanyl 30 years strong

Stanyl has led the pack for 30 years – it is a symmetric polymer with highest amide density of all polyamides, resulting in fast and high crystallization levels, up to 70%.

This high crystallinity in combination with the high amount of hydrogen bonds result in three unique benefits of Stanyl:

- Excellent mechanical properties above the glass transition temperature
- Excellent wear and friction performance
- Extremely good flow behavior in combination with mechanical performance

We keep innovating and adding new unique materials to the Stanyl Portfolio to meet our customers' needs. This portfolio offers materials that manage heat, friction, and loads, making gears for the automotive industry more durable.

Some example grades for high demand gear applications include:

- TW341(-FC) – unfilled (with food contact option)
- TE200F6(-FC) – 30% glass-filled (with food contact option)
- TW241F8, F10 – 40%, 50% glass-filled
- TW241F12 – high-flow, high glass loading material for optimum load and lifetime performance

To learn more visit www.stanyl.com or plasticsfinder.com for related products and application data sheets. For product inquiries or sample requests, visit dsm.com/contactdem.