LNP™ COMPOUNDS
WEAR AND FRICTION SOLUTIONS
THERMOPLASTIC GEARING

At the push of a button, windows move, doors lock, copies get made, and HVAC comes to life. These electromotive actions require gears, bearings, bushings and other wear surfaces to provide smooth, reliable, actuation forces. LUBRICOMP™ and LUBRILOY™ compounds can help deliver the high quality performance required.

THERMOPLASTIC GEARING

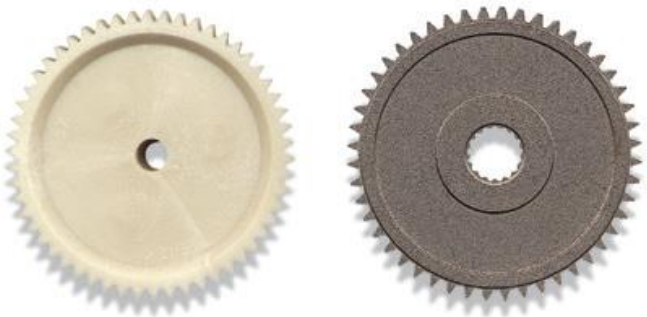
Injection molded thermoplastic gears can replace die cast, machined and sintered metal gears in a variety of applications. They are attractive to part designers not only because of their low weight and design flexibility, but because they generally cost less to manufacture in mid to high volume applications.

INTERNALLY LUBRICATED COMPOUNDS

The addition of an internal lubricant to a thermoplastic can improve the wear resistance and reduce friction in plastic parts. Traditional lubricants like PTFE and PTFE/Si blends are common, with reinforcements like glass and carbon fiber adding strength and modulus. The use of high temperature resins like PEEK, PPS and PPA can give performance at elevated temperatures.

SAVE UP TO **80%**

Plastic gear
$0.55*



Metal gear
$0.99–$2.80*

* Typical price comparison for plastic vs. metal gears: Sintered metal gear cost $2.33 = powder metal $1.10 + sintering $1.00 + secondary operations $0.23 or machined metal gear $2.80 = metal blank $0.60 + machining $2.20 vs. plastic gear $0.55 = resin $0.25 + injection molding $0.30. Prices may be subject to change.

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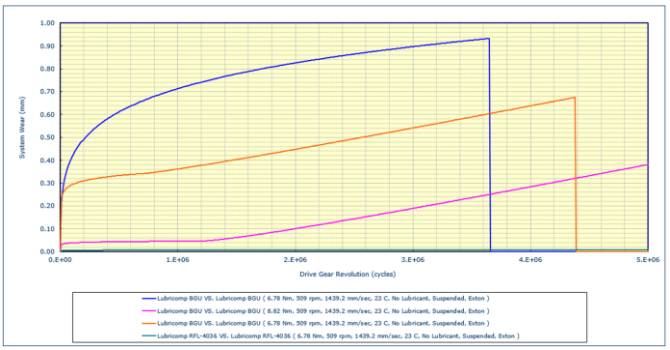
When selecting materials for gear applications, data sheets reporting attributes tested to ASTM or ISO standards help by providing single-point data like tensile strength, flexural modulus and impact strength. But single-point data are often insufficient for gear designs because the physical and mechanical properties of thermoplastics vary with temperature and environmental changes.

Multivariate data is needed to effectively compare materials, evaluate performance in specific application, and select the best material for the product. To meet this need, LNP has developed an extensive database of multi-variate data on its specialty compounds for gear applications. This information compliments single-point data and includes actual gear-on-gear wear testing.

MULTIVARITE DATA

- Tensile Stress-strain
- Tensile Fatigue
- Tensile Creep
- Low Shear Viscosity (DMA)
- Coef. Of Thermal Expansion
- PVT
- High Shear Viscosity
- Specific Heat
- Thermal Conductivity

GEAR WEAR CHARTS



Thermoplastic Gearing solutions

Grade	Description	Features
LUBRICOMP OCL36	PPS, 30% carbon fiber, 15% PTFE	FM: 21.3 GPa, CUT 200-220°C, good wear performance at high PV and high temperatures
LUBRICOMP UCL36ASP	PPA, 30% carbon fiber, 15% PTFE	FM: 19.9 GPa, HDT 270°C, CUT 140- 160°C. Improved plastic- plastic wear and friction performance
LUBRICOMP UFL36S	PPA, 30% glass fiber, 15% PTFE	FM: 11.2 GPa, HDT: 255C, Good balance of cost and performance, low wear and COF
LUBRICOMP EFL36	PEI, 30% glass fiber, 15% PTFE	FM: 11.4 GPa, HDT: 204C, tight dimensional tolerance, low wear and COF, UL94-V0@0.75mm
LUBRICOMP RFL36S	PA66, 30% glass fiber, 15% PTFE	FM: 9.7 GPa, Baseline grade for structural applications, low wear and COF
LUBRICOMP KL004	POM, 20% PTFE	Reference grade for lubricated POM. Low wear and COF, good chemical resistance.
LUBRICOMP KA000M	POM, non-hal lubricant, aramid	Halogen free lubricant. Excellent plastic- plastic wear and friction, dimensional stability