SOLVAY

asking more from chemistry®

TRANSFORM

TECHNYL 60 YEARS OF PERFORMANCE

METAL REPLACEMENT by TECHNYL®

METAL REPLACEMENT by TECHNYL®

TRANSFORMING TODAY INTO TOMORROW

Innovation in recent years has enabled manufacturers to substitute metals with plastics for countless numbers of applications without giving up on performance.

With its Technyl® line, Solvay Engineering Plastics provides a complete range of high-performance solutions that offer customers worldwide a robust and effective alternative to metal in many situations. Technyl® metal replacement materials propose technical properties that are equivalent or superior to metal parts, with the advantages of lighter weight, lower cost, and nearly limitless design potential.

THE TRIUMPH OF LIGHTNESS

Many industrial and leisure markets are challenged to find new ways to reduce the weight of mechanical parts while providing optimal quality and aesthetics.

Thanks to their low density and design flexibility, technical materials from Solvay Engineering Plastics provide a real alternative to metal, with reduced weight and excellent mechanical performance, as well as ecological benefits. Lighter weight parts cost less and leave a smaller ecological footprint thanks to reduced CO_2 emissions. In addition, using Technyl® optimizes integration and reduces tooling costs while extending equipment life and speeding up time to market, rather than metal.

Every day we help our customers transform ideas into materials with assistance worldwide, from early design and process phases to part validation and life cycle analysis, all of which are integral benefits of our approach.

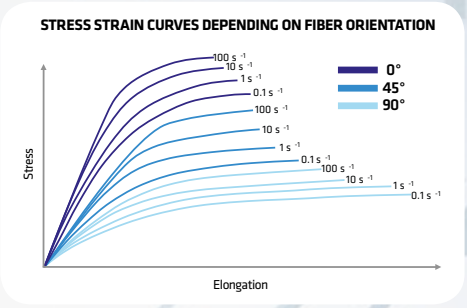
FOUR STEPS FOR SUCCESS

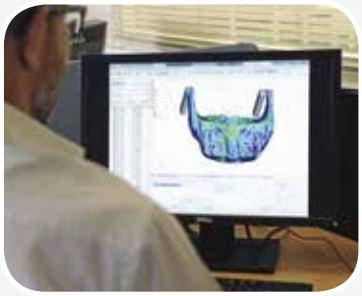
PRELIMINARY MATERIALS SELECTION

01

Customer Technical Service assists you in the pre-study phase of your new designs and concepts. This team of experts gives you the benefit of:

- A large materials database
- High-end material characterization and modeling services
- Expertise in assembly





DESIGN SIMULATION

02

Our Technyl Application Center teams elaborate the best-adapted solution for your project, leveraging topological optimization, design expertise and predictive simulation with MMI Technyl Design™,
an advanced service that enables:

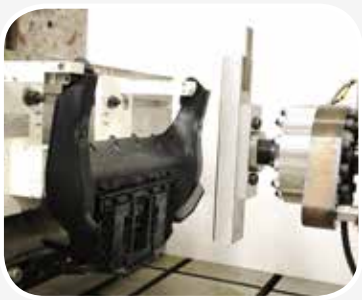
- Microstructure prediction and process optimization for injection and WIT/GIT[1]
- Mechanical analysis, including static, NVH [2], crash and fatigue

[1] *Water/Gas Injection Technology* - [2] *Noise, Vibration and Harshness*

PROTOTYPING

03

- Our Technyl Innovation Center offers expertise in transformation processes for injection, blow molding and extrusion.
- In addition, Sinterline™ Technyl® Powders for your 3D prototyping needs achieve cost efficiency and optimizes development time.



PART TESTING

04

Solvay Engineering Plastics leverages an advanced application laboratory equipped with a best-in-class hydraulic bench tester and many other general and customized testing devices to:

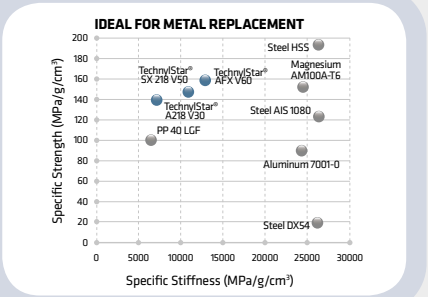
- Validate customer applications while respecting OEM specifications.
- Develop customized bench testers for emerging applications, with equipment such as a hydro-fatigue machine, mid-size shaker, and hydraulic test.
- Correlate between Computer-Aided Engineering (CAE) methods and parts testing to improve behavioral simulation.

REASONS TO CALL THE TECHNYL® FORCE

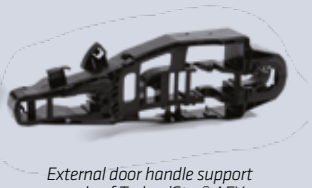
REDUCE WEIGHT

Engine mount made of Technyl®

Thanks to their exceptional mechanical rigidity, Technyl® materials are ideal for replacing metal and reducing end-product weight. A wide range of grades enables us to design just the right material for your application, with reinforcing fibers adapted to each particular case.
The possibilities are endless!

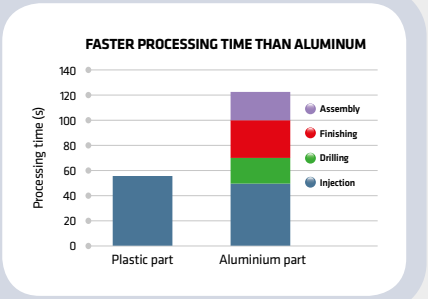


PROCESS EASILY



External door handle support made of TechnylStar® AFX

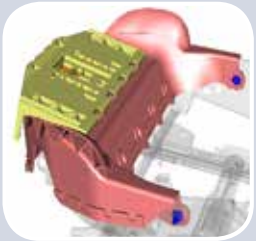
With its low viscosity Technyl® grades, Solvay Engineering Plastics provides plastic solutions that customers can use to create parts in complex forms, obtaining an excellent surface aspect without post processing. Transformation technologies include injection molding, 2D and 3D blow molding, and laser sintering using Sinterline™ Technyl® Powders.



OPTIMIZE FUNCTIONAL INTEGRATION

Metal seat cushion module

Technyl allows the production of complex shapes in one-shot operations. Using Technyl to replace metal enables manufacturers to reduce the number of tools and components required, thus streamlining assembly operations, reducing cost and improving quality.

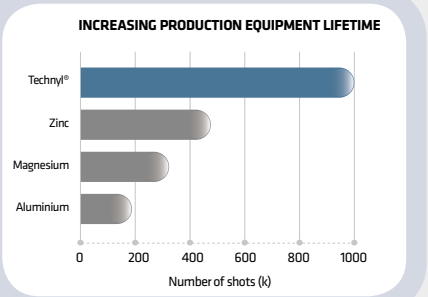


Technyl® seat cushion module
= Number of parts reduced by half

LOWER COSTS

Washing machine door hinge made of TechnylStar® AFX

Replacing metal with Technyl plastics keeps costs down at every step. Plastic transformation tools cost less and last longer, lowering equipment investment significantly. Optimizing design means fewer raw materials are required. Function integration reduces the number of overall parts and simplifies supply and logistical constraints, decreases cycle time, while requiring fewer tools and facilitating quality inspection.



DEVELOP SUSTAINABLY

Air duct made of Technyl®

By designing solutions that enable customers to consume less energy for production, along with increasing the use of recycled products in raw materials, Solvay Engineering Plastics continues to demonstrate its commitment to a sustainable approach.

BETTER CO_2 FOOTPRINT FOR AIR DUCT APPLICATION

	FOR ONESTAINLESS STEEL AIR DUCT	FOR ONE TECHNYL® AIR DUCT
Part weight	0.9 kg	0.62 kg
CO_2 for material production	3.9kg	3.5kg
CO_2 from fuel Consumption (140,000 km)	4.8kg	3.3kg
TOTAL	8.7kg of CO_2/DUCT	**6.8kg of CO_2/DUCT**

-22% of CO_2 emission

INNOVATION IN ACTION

TECHNYL STAR®

TechnylStar® is a complete range of advanced high-fluidity technology that offers you unlimited possibilities:

- Medium-reinforced TechnylStar® S and AF, ideal for processing and molding, while saving cost, time, and energy.
- Highly-reinforced TechnylStar® SX and AFX, the ultimate solution for reducing weight through metal substitution thanks to its considerable rigidity.

Our 10-year track record of excellence for TechnylStar® has demonstrated:

- Unprecedented mechanical performance
- Excellent surface aspect
- Easy processability
- High productivity

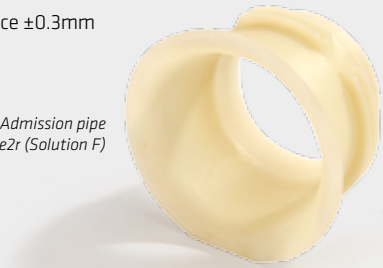
Forklift made of TechnylStar® S: 65% weight reduction over steel

SINTER LINE™ TECHNYL POWDERS

Sinterline™ is the first polyamide 6 powder range for Selective Laser Sintering (SLS). The Sinterline range is designed for rapid functional prototypes and small-series components requiring thermal and mechanical resistance in various markets such as automotive & motorsports, consumer & industrial goods, electrical & electronics, medical, and aeronautics.

Solvay Engineering Plastics now provides glass-filled Sinterline™ Technyl® Powders, a mimic of mineral-filled compounds with high stiffness, additionally offering:

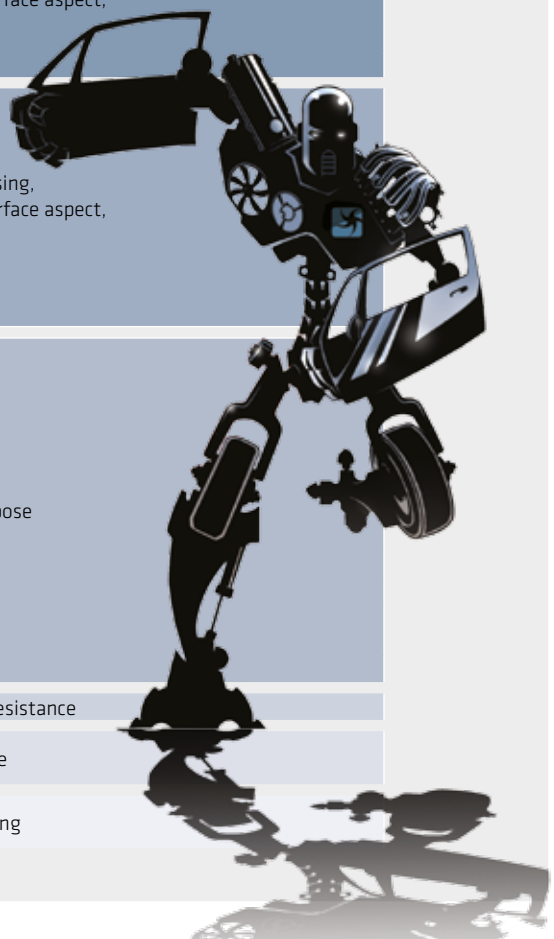
- Dimensional stability
- Excellent surface aspect
- Easy processability
- Accuracy: standard tolerance ±0.3mm



Admission pipe made by e2r (Solution F)

STRENGTH FROM THE INSIDE

PRODUCT NAME	DESCRIPTION	KEY FEATURES
TechnylStar AFX 218 V50	PA 6.6 AFX series	High stiffness, Excellent surface aspect, High flow
TechnylStar AFX 218 V60		
TechnylStar SX 216 V50	PA 6 SX series	
TechnylStar SX 218 V50		
TechnylStar SX 216 V60		
TechnylStar SX 218 V60		
TechnylStar S 216 V30	PA 6 S series	Easy processing, Excellent surface aspect, High flow
TechnylStar S 218 V30		
TechnylStar S 216 V35		
TechnylStar S 218 V35		
TechnylStar AF 218 V25	PA 6.6 AF series	
TechnylStar AF 218 V30		
TechnylStar AF 218 V35		
TechnylStar AF 218 V40		
TechnylStar AF 219 V30		
Technyl A 218 V25	PA 6.6 series	General purpose
Technyl A 216 V30		
Technyl A 218 V30		
Technyl A 218 V35		
Technyl A 218 V40		
Technyl A 218 V50		
Technyl C 216 V30	PA 6 series	
Technyl C 218 V30		
Technyl C 216 V35		
Technyl C 218 V35		
Technyl C 216 V40		
Technyl C 218 V40		
Technyl C 218 V50		
Technyl C 246 SI V30	PA 6 series	High crash resistance
Technyl A 218 MZ15 V25	PA 6.6 series	Low warpage
TechnylStar S 218 MZ20 V10	PA 6 S series	
Sinterline XP 1501/F	PA 6 unfilled	Laser sintering
Sinterline XP 1537/A	PA 6 glass-filled	



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