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

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\(^\text{(1)}\)
- Mechanical analysis, including static, NVH\(^\text{(2)}\), crash and fatigue

\(^\text{(1)}\) Water/Gas Injection Technology - \(^\text{(2)}\) Noise, Vibration and Harshness

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.

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.
METAL REPLACEMENT by 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 CO₂ 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.
**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.

**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.

**IDEAL FOR METAL REPLACEMENT**

- Technyl®
- Zinc
- Magnesium
- Aluminium

**FASTER PROCESSING TIME THAN ALUMINUM**

- Assembly
- Drilling
- Injection

**INCENDING PRODUCTION EQUIPMENT LIFETIME**

- Technyl®
- Zinc
- Magnesium
- Aluminium

**BETTER CO2 FOOTPRINT FOR AIR DUCT APPLICATION**

- ONESTAINLESS STEEL AIR DUCT
- ONE TECHNYL® AIR DUCT

<table>
<thead>
<tr>
<th>Description</th>
<th>ONESTAINLESS STEEL AIR DUCT</th>
<th>ONE TECHNYL® AIR DUCT</th>
<th>CO2 Emission Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part weight</td>
<td>0.9 kg</td>
<td>0.62 kg</td>
<td>-22%</td>
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<tr>
<td>CO2 from material production</td>
<td>3.56 kg</td>
<td>3.36 kg</td>
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</tr>
<tr>
<td>CO2 from fuel consumption (140,000 km)</td>
<td>4.86 kg</td>
<td>3.18 kg</td>
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<tr>
<td>TOTAL</td>
<td>8.79 kg</td>
<td>6.81 kg</td>
<td>-22% of CO2 emission</td>
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</table>
**INNOVATION IN ACTION**

**TECHNYL® STAR**

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

- Medium-reinforced Technyl® S and AF, ideal for processing and molding, while saving cost, time, and energy.
- Highly-reinforced Technyl® 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 Technyl® Star® has demonstrated:**

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

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**SINTERLINE®**

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

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**STRENGTH FROM THE INSIDE**

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>DESCRIPTION</th>
<th>KEY FEATURES</th>
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<tbody>
<tr>
<td>TechnylStar AFX 218 V50</td>
<td>PA 6.6 AFX series</td>
<td>High stiffness, Excellent surface aspect, High flow</td>
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<tr>
<td>TechnylStar AFX 218 V60</td>
<td>PA 6 SX series</td>
<td>Easy processability, Excellent surface aspect, High flow</td>
</tr>
<tr>
<td>TechnylStar SX 216 V50</td>
<td>PA 6 S series</td>
<td>General purpose</td>
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<tr>
<td>TechnylStar SX 216 V60</td>
<td>PA 6.6 AF series</td>
<td>High crash resistance</td>
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<tr>
<td>TechnylStar SX 218 V50</td>
<td>PA 6.6 AF series</td>
<td>Low warpage</td>
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<tr>
<td>TechnylStar SX 218 V60</td>
<td>PA 6.6 AF series</td>
<td>Laser sintering</td>
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*Forklift made of Technyl® Star® S: 65% weight reduction over steel*

*Admission pipe made by e2r (Solution F)*
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