

# SINTERLINE™

Beyond the limits of rapid manufacturing

Polyamide 6 powder for Selective Laser Sintering - CASE STUDIES



**SOLVAY**  
asking more from chemistry™

## On board with SOLAR IMPULSE

**Solar Impulse** is the first airplane designed to fly on solar power, without any fuel or emissions. It also is a strong symbol, demonstrating the power of mankind's collective ingenuity and what's possible when we apply our innovative and technical talents toward achieving the impossible. The gigantic dimensions of this ultra-lightweight revolutionary airplane is its trademark feature. To build it, the whole team had to push back the frontiers of knowledge in materials science, energy management and the man-machine interface. In 2010 Solar Impulse made the first night flight in the history of solar aviation, then in 2012 the plane flew across the Mediterranean and currently in 2013, is flying across America.



**Solvay**, main partner of Solar Impulse, has collaborated with **Sinterline™** polyamide 6 powders, to produce two parts for the next aircraft, which is now under construction and will be used for the 2015 flight around the world. Those parts have been created using **Selective Laser Sintering**, an industrial 3D Printing technology that allows the rapid creation of complex parts with a high degree of design flexibility.

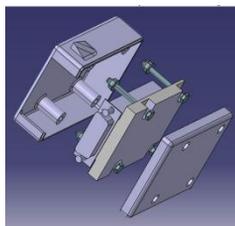
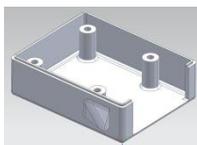


Pictures courtesy of Solar Impulse

An **Air Data Computer (ADC) house**, an essential avionics component for modern glass cockpits and **lighting clips** integrated in the wings for the lights (used in landings and promotions), were designed and produced **in order to save 78% of weight compared to aluminium**.



Lighting clips made with e2r – Solution F

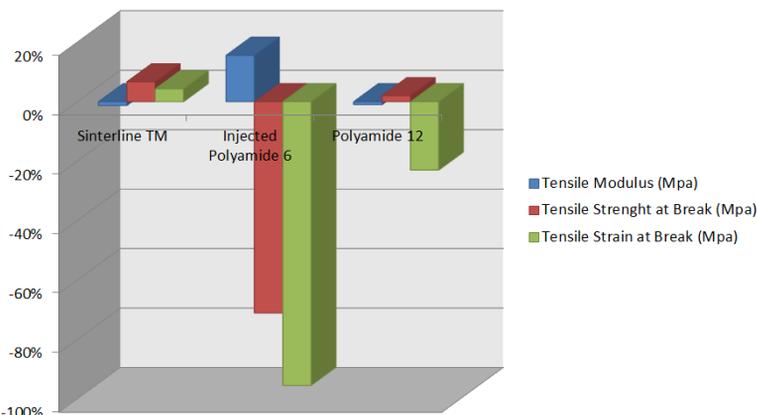


ADC Housing made with e2r – Solution F

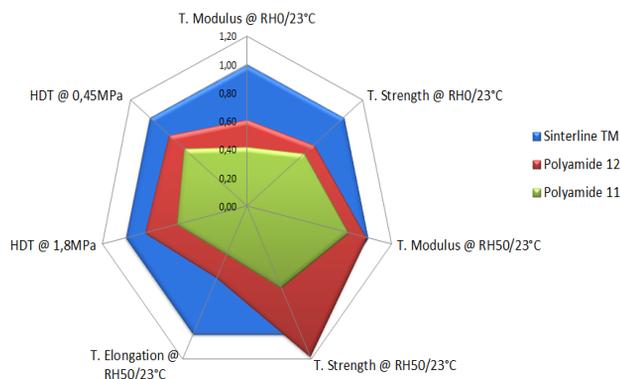
## Sinterline™ Benefits

Excellent balance of **mechanical and thermal** properties for the **production of functional prototypes and small series components**.

**Thermal Aging**  
**Sinterline™** Maintains all the mechanical properties after 504h at 130°C in air.



**Sinterline™ Benchmark vs PA 11 and PA 12**  
Opening up the market to the higher properties that PA6 provides



To know more  
[Sinterline™ webpage](#)  
[Solution F / e2r website](#)  
[SOLAR IMPULSE website](#)

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