**SOLUTION FOR LASER SINTERING /**

**Invent polyamide powders for additive manufacturing**

Laser sintering (LS) is a technology that enables the manufacturing of complex parts through layer-by-layer fusion of thermoplastic powders. It offers design freedom and cost saving versus injection moulding and exhibits the highest throughput among the other Additive manufacturing (AM) techniques.

To push further the possibilities of laser sintering, Arkema has designed Invent, a specific range of polyamide powders resulting from the synergy of exclusive chemistries and decades of powder expertise. The unique benefits of the new Rilsan® Invent range opens a new world of design possibilities to your creativity.

**Rilsan® Invent Natural and Black**

**PA11 Powders**
- > 100% renewable organic carbon

**Benefits**
- > Excellent processability
- > Superior mechanical properties
- > Higher elongation at break and impact resistance
- > Better elasticity and ductility
- > USP Class VI compliant (natural)
- > Deep mat finish (mass-coloration for black)

**Applications**
- > Automotive
- > Aerospace/aeronautics
- > Medical (dental and foot orthoses, dental models, surgical guides)
- > Tooling
- > Functional prototypes

**Charpy Test Results**

<table>
<thead>
<tr>
<th>Resilience (kJ/m)</th>
<th>PA11 unnotched samples do not break (both LS and IM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress (MPa)</td>
<td>Polyamide12</td>
</tr>
<tr>
<td>Strain (%)</td>
<td>Polyamide11</td>
</tr>
</tbody>
</table>

**Tensile Test Results**

<table>
<thead>
<tr>
<th>Stress (MPa)</th>
<th>Polyamide12</th>
</tr>
</thead>
</table>
| Strain (%)   | Polyamide11  

**Orgasol® Invent Smooth (PA12)**  
**Rilsan® Invent Natural (PA11)**  
**Rilsan® Invent Black (PA11)**
NATURAL PA12 POWDER

BENEFITS
> Incomparable smooth finish (no post-treatment)
> Very low refresh rate
> Excellent colour stability

APPLICATIONS
> Consumer goods
> Functional prototypes
> Lifestyle products
> Industry
> Production series

SURFACE COMPARISON AT MICROSCOPIC LEVEL

Orgasol® Invent Smooth

STANDARD PA12 (SAME PART, SAME SPOT)

ORGASOL® INVENT SMOOTH

SUPPLIER FOR MULTIPLE AM TECHNOLOGIES
> PA powders from Arkema have been used in Laser Sintering for more than 10 years
> Arkema also serves the 3D Printing and Stereolithography markets with UV curable Specialty Acrylates (Sartomer)

ACTIVE STANDARDIZATION PLAYER
> ASTM F42 (USA), UNM 920 (France) with follow up of ISO TC 261

MEMBER OF AFPR
(FRENCH RAPID PROTOTYPING ASSOCIATION)