

Toyol Scalmalloy® Powder

Production since 2017

"Scalmalloy" is a registered trademark of APWORKS in Japan and other countries. APWORKS and TOYAL announced a strategic partnership in the further development, production and distribution of Scalmalloy®.

General Properties of Scalmalloy®

Composition: AlMg4.5Sc0.7Zr0.3

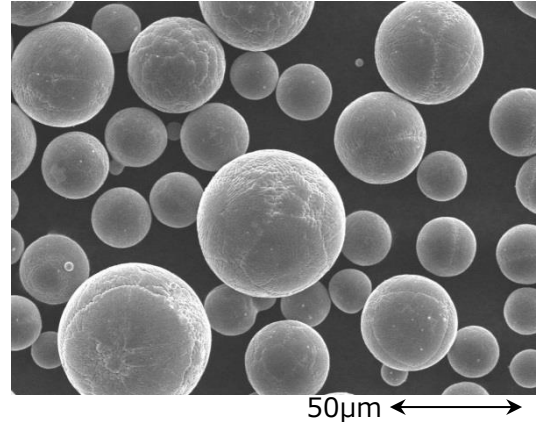
Density: 2.67[g/cm³]

Toyol Powders Optimized for AM

Ultra-sphericity

No satellites

Low oxygen content

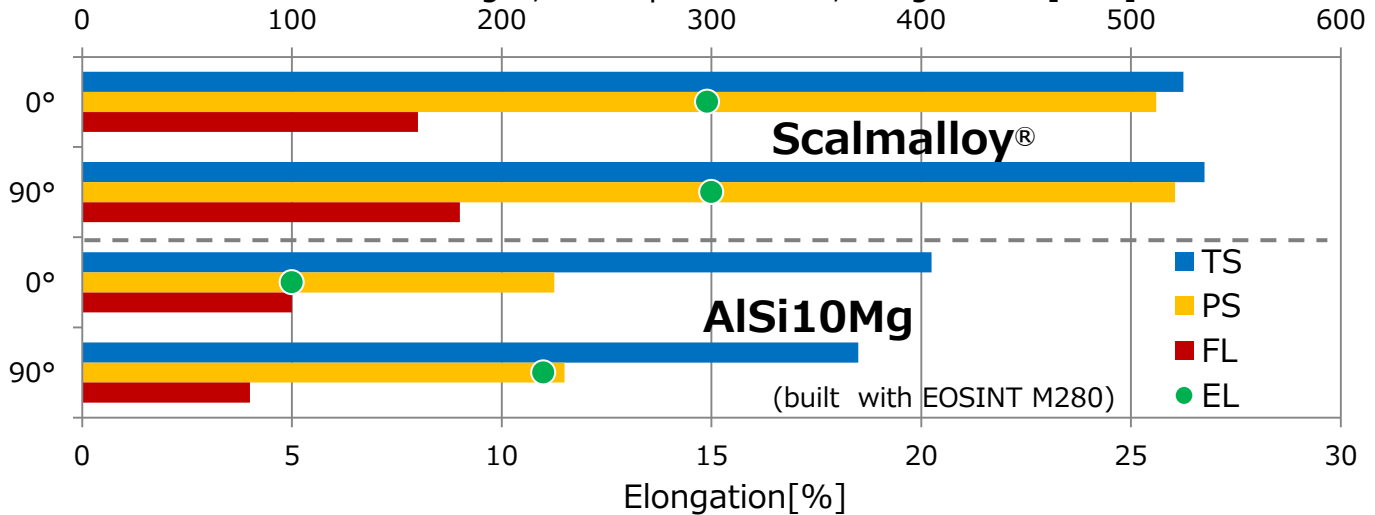


Mechanical Properties from Toyol Scalmalloy® Powder

- Relative density: 99.98-99.99%
- No anisotropy: @0°≒@90°
- High tensile strength (TS) and proof stress (PS) over 500MPa
- Elongation (EL) over 10%
- Reliable fatigue resistance over 160MPa in fatigue limit (FL)

Tensile Test and Rotating Bending Fatigue Test Results

Tensile strength, 0.2% proof stress, Fatigue limit[MPa]



※ Collaborative Work with Osaka Research Institute of Industrial Science and Technology

Scalmalloy® Offers Excellent Material Properties

- Very good weldability
- Very good corrosion resistance
- Low coefficient of thermal expansion
- Stable microstructure even at high temperature up to 250°C
- Excellent machinability for conventional processes
- Applicable to various conventional anodizing processes