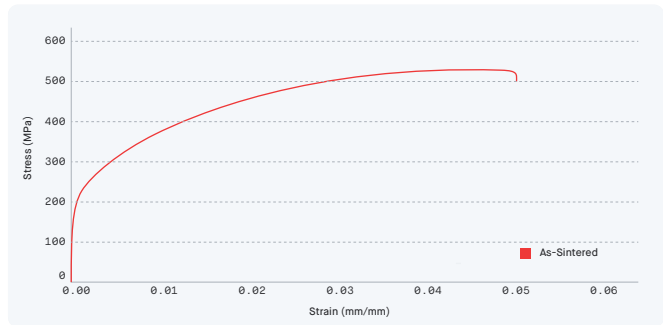


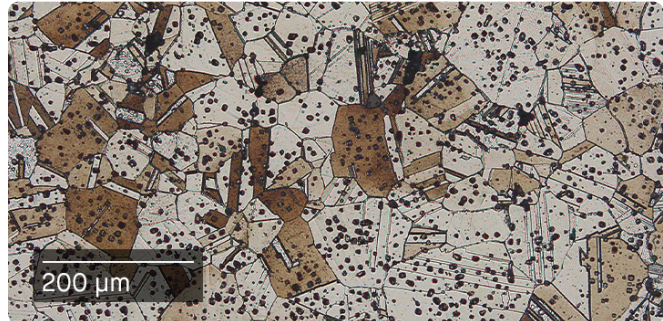
[Material Data Sheet]

# 316L v.2 Stainless Steel



**COMPOSITION %**

|    |            |
|----|------------|
| Fe | balance    |
| Ni | 10 - 14    |
| Cr | 16 - 18    |
| Mo | 2 - 3      |
| Mn | 2.0 (max)  |
| Si | 1.0 (max)  |
| C  | 0.03 (max) |



**MECHANICAL PROPERTIES**

|                                 | Standard  | Studio System™ 2<br>As-Sintered | MIM - MPIF 35 Min <sup>1</sup><br>As-Sintered | Wrought <sup>2</sup><br>For reference |
|---------------------------------|-----------|---------------------------------|---|---------------------------------------|
| Ultimate tensile strength (MPa) | ASTM E8M  | <b>533</b>                      | 450   | 425                                   |
| Yield strength (MPa)            | ASTM E8M  | <b>169</b>                      | 140   | 170                                   |
| Elongation (%)                  | ASTM E8M  | <b>66</b>                       | 40  | 40                                    |
| Hardness (HRB)                  | ASTM E18  | <b>66</b>                       | 67 (typ)                                      | 95 (max)                              |
| Density (relative)              | ASTM B311 | <b>97%</b>                      | 95%   | 100%                                  |

**PERFORMANCE<sup>3</sup>**

|                                 | Standard   | Studio System™ 2<br>As-Sintered |
|---------------------------------|------------|---------------------------------|
| Boil test (corrosion)           | ASTM F1089 | <b>Pass</b>                     |
| Copper sulfate test (corrosion) | ASTM F1089 | <b>Pass</b>                     |

**OTHER STANDARD DESIGNATIONS<sup>4</sup>**

UNS S31603  
EN 1.4404

1. Per MPIF Standard 35, Materials Standards for Metal Injection Molded Parts (MPIF 35-MIM, 2018).  
 2. Wrought values based on ASTM A240 standards.  
 3. Prior to corrosion resistance testing, all test samples were machined and passivated in accordance with ASTM F1089.  
 4. Listed designations are for reference purposes only. Composition and mechanical properties may vary.

End-use material performance is impacted (+/-) by certain factors including but not limited to part geometry and design, application and evaluation conditions, etc. Tensile properties and density data reported are mean values minus 1 sigma.

Due to the material's high elongation, strain values were obtained from crosshead displacement. In conformance with ASTM E8M, total elongation was obtained from scribed marks on the gage length and yield strength was calculated from extensometer measurements.