AMDAP™ Series

AMDAP™ SUS420J2

The metal powder with high flowability suitable for additive manufacturing by SLM

Characteristics

Martensitic stainless steel powder with high strength and hardness obtained by quenching and tempering.

Major applications

Plastic injection molds

Typical chemical composition and hardness

Typical Chemical composition(mass%)				Hardness(HRC)
C	Si	Mn	Cr	Annealing：32-35HRC
0.33	0.6	0.4	13	Tempering after quenching：51-53HRC

Particle size

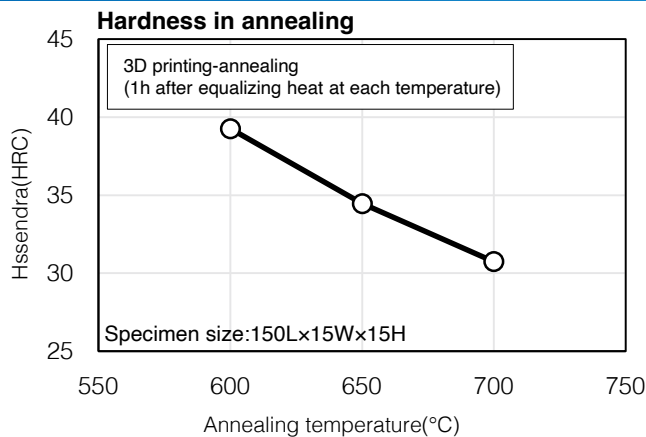| Particle size(µm) |
|---|
| -53/+25 |

Characteristics

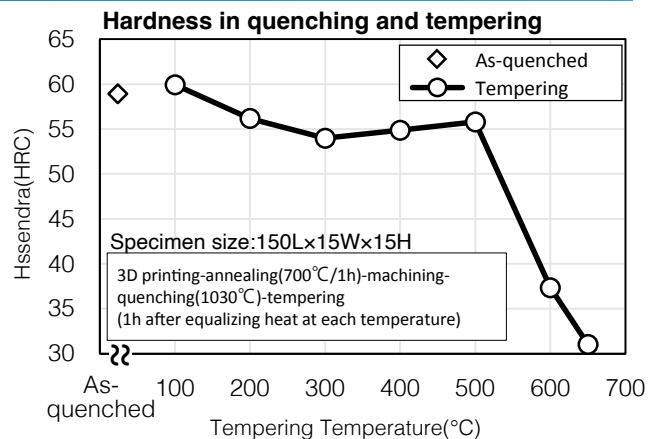Fig.1 Relationship between annealing temperature and hardness of a 3D-printed sample

Fig.2 Relationship between tempering temperature and hardness of a 3D-printed sample

Tensile properties and Charpy impact value

Heat treatment	Hardness (HRC)	YS [1] (MPa)	TS [1] (MPa)	Elongation [1] (%)	Reduction [1] of area (%)	Charpy [2] impact value (J/cm²)
Annealing[3]	34	901	1142	17	52	65
Tempering[4]	53	1637	1963	10	24	30

[1] Tested temperature : RT, Tested specimen : JIS No.14A, Gauge length : 25mm, Parallel area diameter : φ5mm,Testing method : JIS Z 2241-2011 Standard
[2] Tested specimen: JIS No.3 (2mm U-notch)
[3] Detail process : 3D printing-Removing from base plate-annealing-Precision machining
[4] Detail process : 3D printing-Removing from base plate-annealing-Machining-Quenching(1030℃)-Tempering-Precision machining

DAIDO STEEL CO., LTD.

Tokyo Head Office
(Metal Powder Marketing & Sales Sect. Metal Powder Dept.)
Daido Shinagawa Building, 6-35, Konan 1-chome, Minato-ku, Tokyo, 108-8478　　TEL +81-3-5495-1284

Nagoya Office
10, Ryugu-cho, Minato-ku, Nagoya, Aichi, 455-0022　　TEL +81-52-694-0776

Web site: https://www.daido.co.jp/en/products/powder/index.html　Email address: funmatsu@ask.daido.co.jp

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WC2302 22.0,3（DDD）