

DAP™-AM Series

Daido Alloy Powder – for Additive Manufacturing

SUS630

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

Characteristics

- SUS630, equivalent to AISI 630, is a precipitation hardening martensitic stainless steel with excellent strength.
- Heat resistance and corrosion resistance are equivalent to AISI 304.
- Strength and toughness can be well balanced by aging treatment between 480°C and 620°C.

Major applications

General machinery parts

Typical chemical composition and hardness range

Typical chemical composition (mass%)							Hardness (HRC)
C	Si	Mn	Ni	Cr	Cu	Other	
0.04	0.5	0.5	4	17	4	Nb	
							30~43

Particle size

Particle size (μm)
-53/+25

Physical properties*¹

Density (g/cm ³)	Specific heat (J/(kg · K)) [cal/g · K]				Linear expansion coefficient (×10 ⁻⁶ /K)				Thermal conductivity (W/(m · K))			
	28°C	100°C	200°C	300°C	28~100°C	28~200°C	28~300°C	28~400°C	24°C	100°C	200°C	300°C
7.66	499 [0.119]	565 [0.135]	578 [0.138]	633 [0.151]	10.0	10.8	11.2	11.6	17.9	20.9	22.2	24.5

*¹ Specimen heat treatment ST:1040°C/0.5h, WQ AG:480°C/4h, AC

Mechanical properties*²

	Heat treatment	Aging temp. (°C)	YS* ³ (MPa)	TS* ³ (MPa)	Elongation* ³ (%)	Reduction of area* ³ (%)	Hardness (HRC)
SUS630	—	As build	747	1149	14	69	36
	H900	480	1270	1394	13	49	43
	H1025	550	1121	1178	15	57	38
	H1150	620	984	1057	18	61	35
ATSM A693	H900	480	≥1170	≥1310	≥10	≥30	40-48
	H1025	550	≥1000	≥1070	≥12	≥35	33-42
	H1150	620	≥725	≥930	≥16	≥40	26-36

*² Additive manufacturing-Removing from base plate-ST(1040°C/0.5h, WQ)-AG(Each temperature/4h, AC)-Machining-tensile test

*³ Tested temperature : RT, Tested specimen : JIS No.14A, Gauge length : 25mm, Parallel area diameter : 5mm, Testing method : JIS Z 2241-2011 Standard



DAIDO STEEL CO., LTD.

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

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

DAP is a trademark or a registered trademark of Daido Steel Co., Ltd.

■Disclaimer and copyright

The figures in this document are typical values based on the results of our tests and there is no guarantee that the figures presented will be achieved when the products are used. The information in this document is subject to change without notice. Please contact us for the latest information. Any unauthorized distribution or reproduction of the content of this document is prohibited.

WC2102 22.0,3(DDD)