www.silicolloy.co.jp

Silicolloy® Metal Powder

Precipitation Hardened Stainless Steel

Silicolloy Lab

Silicolloy A2 Metal Powder

Higher strength,hardness,corrosion resistance and high grade

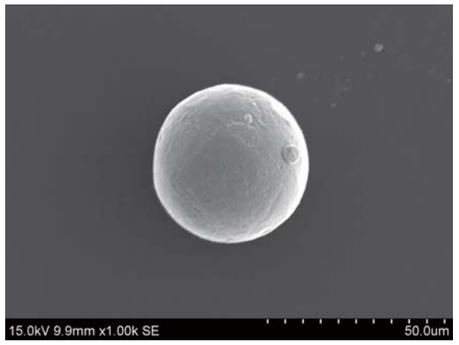


Photo1 - Silicolloy A2 metal powder (1000magnifications)

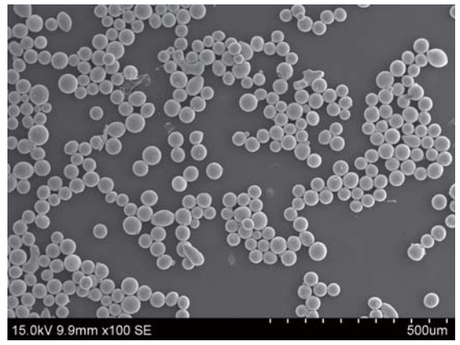


Photo2 - Silicolloy A2 metal powder (100magnifications)

Photo3 - 5 kg bottles of Silicolloy powder

Photo4 - Silicolloy powder

Characteristics of Silicolloy A2 powder

1.Higher strength	Tensile strength:1700N/㎟ (Age hardening treatment)
2.Corrosion resistance	Silicolloy is equivalent to AISI304.
3.Heat resistance	Silicolloy is superior in high-temperature oxidation resistance due to high silicon content.
4.Hardness	48-52HRC
5.Powder manufacturing technology	We produce high-purity metal powders with low oxygen content using combinations of vacuum melting and inert gas atomization.
6.Chemical requirements	C 0.02 / Si 3.5 / Mn 1.0 / P 0.006 / S 0.003 / Ni 6.5 / Cr 11.0 / Fe Bal. (mas %) — Special elements
7.Applications	Selective laser sintering,Plasma transferred arc welding Thermal spraying,Metal injection molding
8.Example of the particle size	-32μm , -53/+32μm , -106/+63μm

Silicolloy XVI metal powder is under development now.

PHOENIX INTERNATIONAL CORPORATION
& SI TECHNO CORPORATION

Selective laser sintering

Silicolloy A2 has the strength that is equal to Maraging steel.

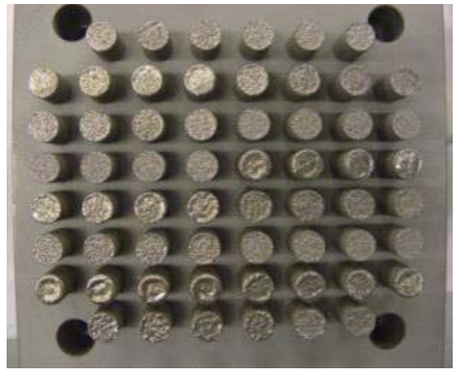


Photo5 - Selective laser sintering
Molding to a baseplate

Photo6 - Selective laser sintering
Molding to portrait orientation and landscape orientation

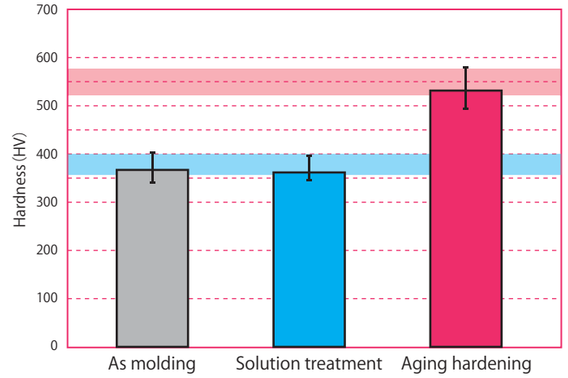


Figure 1 - Hardness test

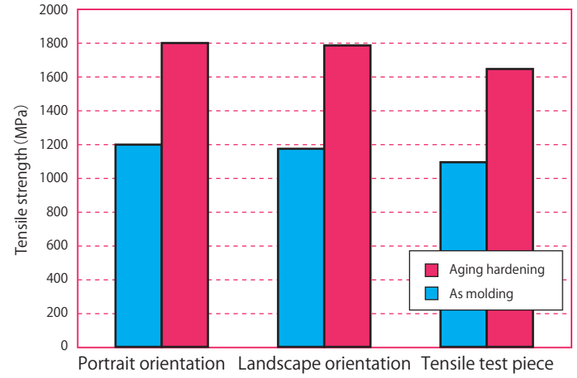
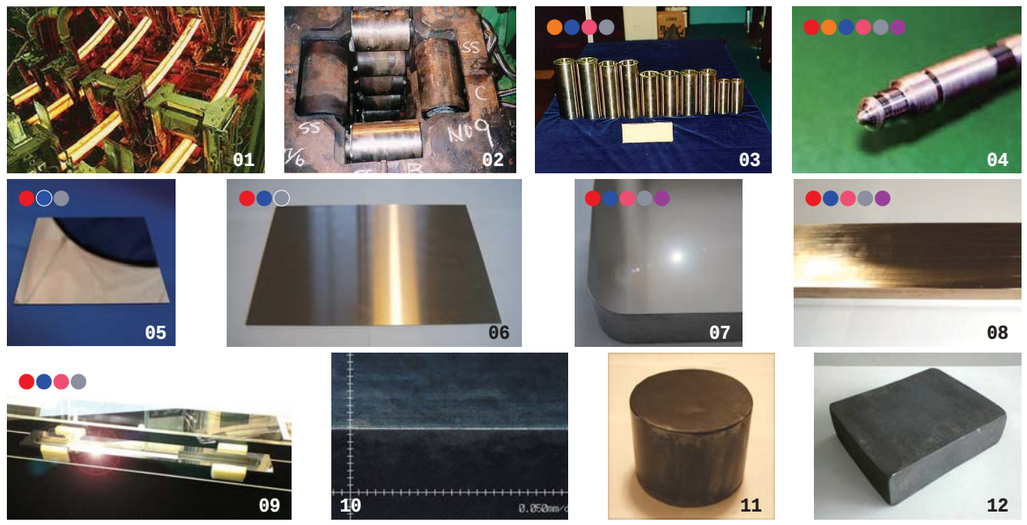


Figure 2 - Tensile testing

The Application of Silicolloy

Round bar,Plate and Forging

Necessary function
Higher strength / Heat resistance / Corrosion Resistance
Wear Resistance / Higher hardness / Seizure Resistance



01:Continuous casting machine , 02:Continuous casting roller , 03:Silicolloy A2 Roller , 04: Shaft for steam relief safty valve (Silicolloy A2)
05:Harden plate (Silicolloy XVI) , 06:Harden plate (Silicolloy XVI) , 07:Mold for pharmaceutical (Silicolloy XVI)
08: Plate for corrosive wear (Silicolloy XVI) , 09: Nozzle for slit die coater , 10:Enlarged picture of 09 (175magnifications,Ry0.10μm,Ra0.02μm)
11:Forging materials (round bar,Silicolloy XVI) , 12:Forging materials (plate,Silicolloy XVI)