

DELROME

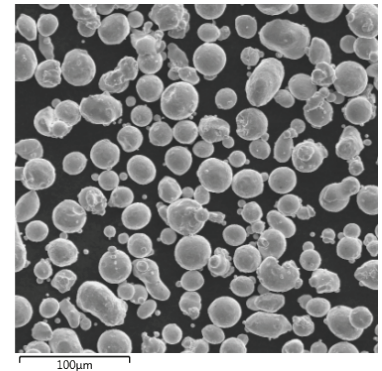
DELROME 316L AM™

NOMINAL COMPOSITION

Alloy	Fe	Cr	Ni	Mo	Cu	Si	C	Mn	All Others
Delcrome 316L AM	Bal.	18	14	3	0.5 max	0.75 max	0.03 max	1	0.2 max

POWDER CHARACTERISTICS

	Scott Density (g/cc)	Tap Density (g/cc)	Hall Flow (s, 50g)	Melting Range (C)
Delcrome 316L AM	4.5	5.0	15	1375–1450



PRODUCT DESCRIPTION

The iron-based **Delcrome** alloys have been developed as a wear- and corrosion-resistant family of alloys analogous to many stainless steels. When compared to our Stellite alloys, their wear and corrosion resistance is relatively low.

Our **Delcrome 316L AM** powder is a common austenitic stainless steel which has been qualified for printing on L-PBF type 3D platforms. **Delcrome 316L AM** is analogous to UNS S31603 type materials which is used across a wide variety of applications and environments. The alloy has a long history of use in industries such as: Marine, Automotive, Chemical Processing, Medical, Pulp & Paper, Petrochemical and Oil & Gas.

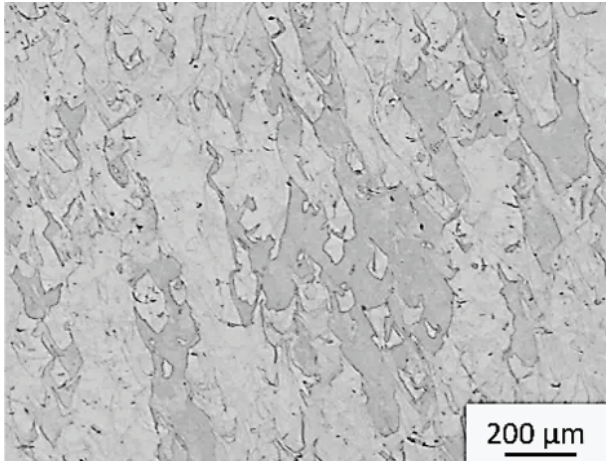
WEAR & CORROSION RESISTANCE

Delcrome 316L AM is a common molybdenum containing austenitic stainless steel. It has good corrosion resistance in a variety of environments and is commonly substituted in place of 304 stainless. The higher molybdenum content of 316L generally improves crevice corrosion (pitting) resistance in chloride environments.

Delcrome 316L AM is similar to other 316L type materials in its excellent toughness and higher creep, stress-to-rupture and tensile strengths at elevated temperatures.



DELCROME 316L AM™



Micrograph As Printed Delcrome 316L AM

PHYSICAL PROPERTIES

DELCROME 316L AM	
Hardness (HRB), As Printed and HT*	78-90
Density (g/cc), As Printed and HT*	7.96
Porosity (%), As Printed and HT*	<0.1
Thermal Conductivity (W/m/°C) Room Temperature, As Printed	14.3
Specific heat (J/g°C) Room Temperature, As Printed	0.5
Coeff. of Thermal Expansion (10 ⁻⁶ /°C) 0-200°C, As Printed	18

*AMS 2759: Anneal @ 2000°F in argon with a water quench

NOMINAL TENSILE PROPERTIES AT ROOM TEMPERATURE

		UTS		Yield Stress (0.2%)		Elongation	Elastic Modulus	
		ksi	MPa	ksi	MPa	A(%)	Psi x 10 ⁶	GPa
Delcrome 316L AM As Printed	Horizontal	87	602	69	477	64	27	184
	Vertical	77	532	60	413	93	25	173
Delcrome 316L AM Post HT*	Horizontal	85	585	46	320	60	27	185
	Vertical	76	525	42	290	80	28	190

*AMS 2759: Anneal @ 2000°F in argon with a water quench

CORROSION RESISTANCE

Reagent	Temp	As Printed
5%HCl	100° F	N
10%H ₂ SO ₄	150° F	N
10%HNO ₃	150° F	E
10%NaCl	100° F	E

E = Excellent, Less than 10mdd (2mpy),
N = Not Recommended, >250mdd (50mpy)

WEAR RESISTANCE

		As Printed
Wear Volume Loss (mm ³)	ASTM G65 @ 2000revs	110
Erosion Rate (mm ³ /kg)	ASTM G76	32
	Modified G76**	9

* AMS 2759: 2000°F in argon with a water quench

**Slurry erosion test utilizing silica sand at 1000psi

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