

# DELROME

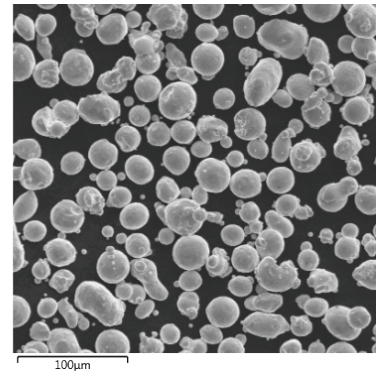
## DELROME 316L AM™

### 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.

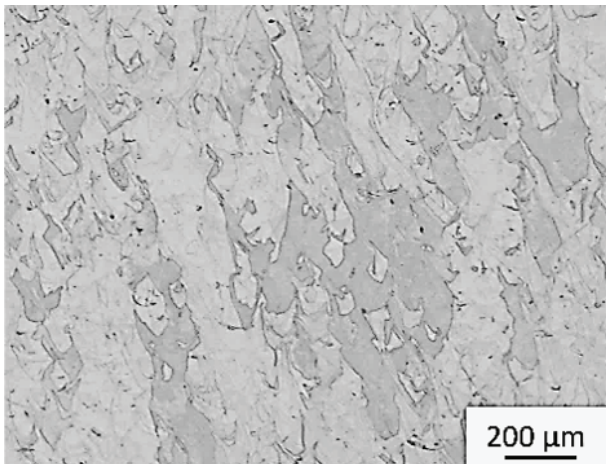
### WEAR & CORROSION RESISTANCE

**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 <sup>-6</sup> /°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 <sup>6</sup>	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 <sub>2</sub> SO <sub>4</sub>	150° F	N
10%HNO <sub>3</sub>	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 <sup>3</sup> )	ASTM G65 @ 2000revs	110
Erosion Rate (mm <sup>3</sup> /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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