TECHNICAL DATA

Ultimet™ ALLOY

Solid-solution Strengthened COBALT-BASED ALLOYS are typical characterized by low-carbon, and hence better corrosion resistance than the carbide strengthened alloys. Available in a variety of wrought forms, castings, and weld overlays. This category was designed to provide superb corrosion resistance, good elevated-temperature properties, and moderate wear resistance.

Ultimet™ Alloy (UNS R31233) provides a unique set of properties. It behaves like the STELLITE™alloys with lower carbon contents against wear. On the other side, it possesses many of the attributes of nickel-based alloys, in particular outstanding resistance to chloride-induced pitting and crevice corrosion against corrosion.
Ultimet™ alloy is an ideal welding material with exceptional ductility and resistance to weld cracking. It is very easy to apply compared to the traditional wear-resistant cobalt-based alloys, and multiple layers may be applied with little or no preheat. Besides being available as a wrought and cast product, Ultimet™ alloy is also available for welding surfacing applications. One key feature of Ultimet™ alloy, when compared to other hardfacing materials, is its exceptional ductility and resistance to cracking.

CORROSION & WEAR RESISTANCE

Ultimet™ resists wet chlorine at ambient temperatures and is resistant to nitric and hydrochloric acids under certain conditions. Moreover, possesses Ultimet™ very good corrosion resistance to localized corrosion (pitting and crevice corrosion), resists many aggressive environments, and exhibits excellent wear properties, particularly against slurry erosion, cavitation erosion, and galling.

NOMINAL CHEMICAL COMPOSITION (MASS%)

ALLOY	Co	Cr	W	Ni	Fe	Mo	Others
Ultimet™	Bal.	26,0	2,0	9,0	3,0	5,0	C, Mn, Si, N

PHYSICAL PROPERTIES

ALLOY	Hardness	Density	Melting Range
Ultimet™	~ 96 HRB	~ 8,47 g/cm³	~ 1330 – 1350°C

EXAMPLE FOR TENSILE PROPERTIES AT ROOM TEMPERATURE*

PRODUCT FORM	Ultimate Tensile Strength Rm	Yield Stress Rp (0,2%)	Elongation A
Casting, As cast (investment-Casting)	~ 770 MPa	~ 390 MPa	~30%

*mechanical properties are highly affected by the manufacturing process and the heat treatment

PRODUCT FORMS

Components				
Castings	Cladded / Hardfaced	PM / HIP parts*	AM parts*	Wrought*

* On special request.

Consumables for Cladding / Hardfacing and Additive Manufacturing (AM)				
Rods	TIG-Welding		Oxy-Acetylene Welding	
Electrode	MMA Welding			
Cored Wire	MIG Welding		Submerged Arc Welding	
Powder	PTA Cladding	Laser Cladding	HVOF Spraying	AM

Deloro Wear Solutions GmbH | Zur Bergpflege 51 – 53 | 56070 Koblenz | Germany
T +49 (0) 261 8088 0 | F +49 (0) 261 8088 35
Email us at: info@deloro.com | Visit us at: www.deloro.com