Stainless Steel for Implants

ALLOY UNS No.	Werk-stoffe	Chemical Analysis %										Density		Temper	Tensile Rm (min)		Yield Rp 0.2% (min)		Elong. % min	Hardness HV	Application
		C	Mn	Ni	Cr	Fe	Mo	Ti	Nb	N	Other	g/cm³	lb/in³		ksi	MPa	ksi	MPa			
316LVM S31673	1.4441	0.030 max	2.0 max	11.0-14.0	17.0-19.0	bal	2.0-3.0					7.93	0.286	ANN	70	485	25	170	35	200 max	Vacuum remelt or ESR to achieve highest microcleanliness levels and structural homogenity.
Rex 734 S31675		0.080 max	2.0-4.3	9.0-11.0	19.5-22.0	bal	2.0-3.0			0.25-0.50	Cu 0.25 max	7.89	0.285	ANN	107	740	62	430	35	300 max	Medical implant grade.
N50 S20910	1.3964	0.060 max	4.0-6.0	11.5-13.5	20.5-23.5	bal	1.5-3.0		0.1-0.3	0.2-0.4	V 0.1-0.3	7.880	0.285	ANN	100	690	55	380	35	285 max	Nitrogen strengthened austenitic grade with exceptional strength in the cold worked condition.
												7.450	0.270	CW	170	1170	150	1034	20	528 max	
MP35N R30035		0.03 max	0.2 max	33.0-37.0	19.0-21.0	1.0 max	9.0-10.5	1.0 max			Co bal	8.43	0.304	HT	220	1514	200	1380	10	528 max	Nickel cobalt alloy with very high strength, toughness and outstanding corrosion resistance.

Stainless Steel for Surgical Instruments

ALLOY UNS No.	Werk-stoffe	Chemical Analysis %								Density		Temper	Tensile Rm (min)		Yield Rp 0.2% (min)		Elong. % min	Hardness HV	Application
		C	Mn	Ni	Cr	Fe	Mo	Nb	Other	g/cm³	lb/in³		ksi	MPa	ksi	MPa			
304L S30403	1.4306	0.035 max	2.0 max	8.0-11.0	18.0-20.0	bal				7.93	0.286	ANN	70	485	25	170	35	200 max	Lower carbon of 304 with good weldability.
316L S31603	1.4404	0.035 max	2.0 max	10.0-13.0	16.0-18.0	bal	2.0-2.5			7.93	0.286	ANN	70	485	25	170	35	200 max	Standard AOD melt austenitic stainless steel grade.
	1.4435						2.5-3												316L with minimum molybdenum content of 2.5%.
17/4PH S17400	1.4542	0.070 max	2.0 max	3.0-5.0	15.0-17.5	bal		0.15-0.45	Cu 3.0-5.0	7.9	0.286	HT	155	1070	145	1000	5	300 min	Capable of developing high mechanical properties by solution treatment & age hardening.
15/5PH S15500 630A	1.4545	0.070 max	1.0 max	3.50-5.5	14.5-15.5	bal		0.15-0.45	Cu 2.5-4.5	7.8	0.282	HT	155	1070	145	1000	12	331-401	Capable of developing high mechanical properties by solution treatment and age hardening.

Titanium Alloys

ALLOY UNS No.	Werk-stoffe	Chemical Analysis %						Density		Temper	Tensile Rm (min)		Yield Rp 0.2% (min)		Elong. % min	Application
		C	Fe	Ti	N	Al	Other	g/cm³	lb/in³		ksi	MPa	ksi	MPa		
CP Grade 2 R50400	3.7035	0.08 max	0.30 max	bal	0.03 max		O 0.25 max	4.51	0.163	ANN	50	345	40-65	275-450	20	Very high strength to weight ratio combined with excellent seawater corrosion resistance.
Ti 3Al/2.5V Grade 9 R56320	3.7194	0.08 max	0.25 max	bal	0.03 max	2.5-3.50	V 2.0-2.5	4.48	0.162	CWSR	125	860	105	725	10	High strength to weight ratio. Excellent corrosion resistance.
Ti 6Al/4V Grade 5 R56400	3.7165	0.10 max	0.40 max	bal	0.05 max	5.5-6.75	V 3.5-4.5	4.43	0.160	ANN	50	345	40	275	20	Very high strength to weight ratio.
Ti 6Al/4V Grade 5 ELI R56401	3.7165			bal		6.0	V 4.0	4.33	0.156	CWSR	159	1100	141	980	8	ELI grade, very high strength to weight ratio.
Ti 425 Ti 4Al/2.5V			1.5	bal		4.0	V 2.5			CWSR	146	1006	129	890	14	Very high strength to weight ratio with improved ductility.