

DURAHETE 950 T31

Cr-Mo-V ALLOY

BOLTING MATERIAL FOR HIGH TEMPERATURE SERVICE

DURAHETE 950 T31 most commonly known as 42CrMoV4-6 has good mechanical properties & resistance to wear most commonly used for applications in compressor Discs, Mechanical Parts, fasteners for aerospace applications & shafts in all aspects of aviation, aerospace, shipbuilding, military industry, nuclear power and transportation, machine, petrochemical, medical instruments, Air Bag Components, Oil Field Products, Aerospace, Defense, Forgers, Light & Heavy Equipment, Industrial Machinery, Post Tensioning Fasteners, Bolts, Medium & Heavy Duty Electric Motors, Power Transmissions, Bearings, Suspension Parts, Turbine Blades, Hand Tools, Automotive Parts and Fasteners, Marine Outboard Engines, etc.

Chemical Properties

C	Mn	P	S	Si	Cr	Mo	V	Al
0.36-0.47	0.45-0.70	0.04 Max	0.04 Max	0.15-0.35	0.80-1.15	0.5-0.65	0.50-0.65	0.015

Mechanical Properties

Size	Yield strength	Tensile strength	Elongation	Reduction	Hardness		
	Mpa	Mpa	%	%	BHN	HRB	HRC
	min	min	min	min			
Up to 2-1/2	725	860	18	50		321 Max	35 Max
2-5/8 - 4	655	760	17	45		302 Max	33 Max
4-1/8 - 7	585	690	16	45		227 Max	29 Max

Mechanical, Oxidation & Embrittlement Properties

Temperature (°C)	Stress to produce Rupture (N/MM ²)			Temp (°C)	Stress to produce Rupture (N/MM ²)			Temp (°C)	Residual Stress (N/MM ²)		
	10,000 h	100,000 h	200,000 h		1,000 h	10,000 h	100,000 h		1,000 h	10,000 h	30,000 h
450	513	463	446	450	-	578	452	400	234	215	192
500	321	210	187	500	510	360	221	450	188	157	141
550	137	-	-	550	295	143	-	500	136	83	47

Physical Properties

	Temperature (°C)							
	20	100	200	300	400	500	600	700
Density (kg/m ³)	7810	-	-	-	-	-	-	-
Electrical Resistivity (nom)	273	320	390	465	560	660	785	955
Thermal Expansion (K ⁻¹ x 10 ⁻⁵)	-	11.1	12.1	12.9	13.5	13.9	14.1	-
Thermal conductivity (w/mk)	42	41	40	39	36	34	-	-
specific Heat (J/kgK)	420	449	487	525	546	567	621	651
Heat Content (kJ/kg)	0	33.6	86.1	147	107	273	349	441
Modules of Elasticity (kN/mm ²)	211	207	198	190	183	174	165	-

Heat Treatment

Quenched @ 925°C & Tempered @ 650°C

Equivalent Designation

UNS No. K14675
 EN No. 40CrMoV4.6
 BS1506 671-850
 W.Nr. 1.7711
 EN10269
 Din 17240 En 1515-1
 Astm A193 Gr.B16

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