

# ROD & BAR ALLOY 6040

## ALLOY DESCRIPTION

6040 is a RoHS compliant, lead-free alternative to 6262. The alloy offers very good machinability along with good corrosion resistance. It also has excellent coating acceptance (anodize response). It can be used in place of 6262. Physical and mechanical properties are equivalent to 6262.

## TYPICAL MECHANICAL PROPERTIES

Temper	Tensile (.500" Dia. Specimen)					Hardness Rockwell "B" 100 kg 1/16" Ball	Shear		Fatigue*	
	Ultimate		Yield		Elongation/4D %		Ultimate Shearing Strength		Endurance Limit – R.R. Moore Type	
	KSI	MPa	KSI	MPa			KSI	MPa	KSI	MPa
T6, T651	47.0	324	43.0	296	15					
T8	47.0	324	44.0	303	14	62	30	207		

\*5 x 10E4 cycles of reversed stress

## COMPARATIVE CHARACTERISTICS

Temper	Corrosion Resistance		Cold Workability <sup>3</sup>	Machinability <sup>3</sup>	Anodize Response <sup>3</sup>	Brazeability <sup>4</sup>	Weldability <sup>4</sup>		
	General <sup>1</sup>	Stress <sup>2</sup>					Gas	Arc	Spot
T6, T651	B	A	C	B	A				
T8	B	A	D	B	A				

- Ratings A through E are relative ratings in decreasing order of merit, based on exposures to sodium chloride solution by intermittent spraying or immersion. Alloys with A and B ratings can be used in industrial and seacoast atmospheres without protection. Alloys with C, D and E ratings generally should be protected at least on faying surfaces.
- Stress-corrosion cracking ratings are based on service experience and on laboratory tests of specimens exposed to the 3.5% sodium chloride alternate immersion test.  
 A= No known instance of failure in service or in laboratory tests.  
 B= No known instance of failure in service; limited failures in laboratory tests of short transverse specimens.  
 C= Service failures with sustained tension stress acting in short transverse direction relative to grain structure; limited failures in laboratory tests of long transverse specimens.  
 D= Limited service failures with sustained longitudinal or long transverse areas.
- Ratings A through D for Workability (cold), A through E for Machinability and A through C for Anodize Response, are relative ratings in decreasing order of merit.
- Ratings A through D for Weldability and Brazeability are relative ratings defined as follows:  
 A= Generally weldable by all commercial procedures and methods.  
 B= Weldable with special techniques or for specific applications that justify preliminary trials or testing to develop welding procedure and weld performance.  
 C= Limited weldability because of crack sensitivity or loss in resistance to corrosion and mechanical properties.  
 D= No commonly used welding methods have been developed.

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## CHEMICAL COMPOSITION LIMITS

									Others <sup>1</sup>	
Weight %	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Each	Total
Minimum	0.40		0.20		0.80					
Maximum	0.80	0.70	0.80	0.15	1.20	0.15	0.25	0.15	0.05	0.15

<sup>1</sup> Also contains 0.30 - 1.20 wt. % each of Sn and 0.15 - 0.70 % Bi