



5154

Aluminium Alloy Data sheet

Material NOTE: The following data is for general reference only and NOT FOR DESIGN.

Description

Alloy 5154 is a Magnesium bearing alloy suitable for higher strength than 5052 alloys and combines strength with excellent formability and corrosion resistance.

Favoured as a preferred alloy for cold forging of fasteners in particular rivets, pins and clips.

Hardness range from H0 Annealed to H38 Tensile strength of 270Mpa.

Alloy designations

5154-0, UNS A95154, AA5154-0, ISO AlMg3.5

Applications

- Cold heading/forged components
- Marine & chemical environments
- Food grade clips and bindings

Substitutable Alloys

Alloys that can be substituted for 5154 include 5052

Chemical Composition¹

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al(min)
5154	0.25	0.40	0.10	0.10	3.1-3.9	0.25	-	0.1	-	0.15	95.1 %

NB: Assays in % max.

Physical Properties

Property	Value
Density	2.66 g/ cc
Melting point	607-649 °C
Modulus if Elasticity	69 GPA
Resistivity	5.39e-006 ohm-cm
Electrical Conductivity	32 % IACS

¹ Complying with ASTM Aluminium Association

Mechanical properties #

AS1865 Aluminium & Alloys – drawn wire, rod bar & strip

Temper	Ultimate Tensile strength		Elongation
	Mpa	Ksi	%
5154-H0 (Annealed)	206	35	27
H32	248	39	15
H34	269	42	13
H36	290	45	12
H38 (Hard drawn)	>310	48	< 10%

#: Typical averages

Physical performance

Weldability	Readily weldable using commercial filler metals. Filler metals usually 5356 alloy
Machinability	Machinability of HO annealed metal is Poor. Harder tempers machinability considered acceptable
Corrosion	5xxx series aluminium has a wide range of resistance to corrosion in aggressive environment's. 5 series is particular resistant to caustic and marine /saline environments .
Appearance	Bright chrome like appearance in drawn condition. Annealed metal is dull in appearance.
Heat Treatment	5154 alloy is annealed at 345°C with controlled cooling required to stabilise temper. Alloy is not hardened by heat treatment.
Surface cleaning	Wire surface can be cleaned readily with mineral solvents. Heavily contaminated surfaces can be cleaned using hot +70°C diluted caustic solution

References

ASTMB209M-10 Standard Specification for Aluminium and Aluminium Alloy Sheet & plate