

NOMINAL COMPOSITION

Alloy UNS	Alloy AA	Description	Element, weight%				
			Mg	Mn	Cr	Cu	Al
A91100	1100	Aluminium - Low Strength					99.0 min
A91200	1200	Aluminium - Low Strength					99.0 min
A93003	3003	Manganese Aluminium - Medium Strength		1.2		0.12	Rem
A95005	5005	Magnesium Aluminium - Medium Strength	0.8				Rem
A95052	5052	Magnesium Aluminium - Medium Strength	2.5		0.25		Rem
A95251	5251	Magnesium Aluminium - Medium Strength	2.0	0.35			Rem
A95083	5083	Magnesium Aluminium - High Strength	4.5	0.7	0.15		Rem

ALLOY CHARACTERISTICS

Alloy	Standard Product				Corrosion Resistance	Machining	Anodising	Brazing
	Coil	Sheet	Plate	Treadplate				
1100	x	x			A	D	B	A
1200	x	x			A	C	B	A
3003	x	x	x		A	C	B	A
5005	x	x			A	C	B	B
5052	x	x	x	x	A	B	C	C
5251	x	x		x	A	B	C	C
5083			x		A	B	C	D

APPLICATIONS

Alloy	Applications
1100	Spinning, holloware, food handling & storage, general sheet metal work.
1200	Spinning, holloware, and general sheet metal work.
3003	Chemical equipment and sheet metal work.
5005	Architectural, sheet metal work, high strength foil.
5052	Boats, dinghies and other applications requiring resistance to marine corrosion.
5251	Boats, dinghies and other applications requiring resistance to marine corrosion.
5083	Marine, pressure vessels, cryogenics, and structure. Not be be used above 65°C.

Relative ratings in decreasing order of merit: A, B, C, D.
Data from Aluminium Development Council of Australia.

PRODUCT DATA SHEET

Aluminium 1100 UNS A91100

Aluminium Alloys

Aluminium alloy 1100 contains a minimum of 99.00% aluminium, and is sometimes known as 'commercially pure aluminium'. It has excellent electrical conductivity, good formability and high resistance to corrosion, and is used where high strength is not needed. It has the low density and excellent thermal conductivity common to all aluminium alloys.

Typical Applications General sheet metal work where moderate strength is adequate: lightly stressed panels, architectural flashings, name plates, heat exchangers, food and chemical handling and storage equipment, drawn or spun hollowware, light reflectors, welded assemblies.

Chemical Composition

AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.

Element	%	Element	%
Aluminium	99.00% min	Manganese	0.05 max
Copper	0.05 – 0.20	Zinc	0.10 max
Silicon + Iron	0.95 max	Others, each	0.05 max
		Others, total	0.15 max

Temper	0.2% Proof Stress, MPa min [†]	Tensile Strength, MPa	Elongation % min [‡]
O (annealed)	25	75 - 105	15 – 26
H12	75	95 - 130	3 – 10
H14	95	110 - 145	1 – 8
H24	95	110 max	1 – 8

Specified Mechanical Properties

AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.

[†] For information only, proof stress is not specified or measured except by prior agreement

[‡] Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

Equivalent Specifications:

USA: AA1100; Japan: JIS A1100P; France: NF 1100; ISO Al 99.0 Cu.

The properties in this data sheet meet Australian/New Zealand Standard AS/NZS 1734:1997 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate (equivalent to BS EN573-1). The material also meets other national standards.

Key to tempers:

Temper	Condition
O	Annealed (soft)
H1x	Strain hardened only
H2x	Strain hardened then partially annealed
H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)
Second digit: (x)	
8	full hard 4 half hard
6	three quarter hard 2 quarter hard

Description Aluminium 1100 is commercial purity aluminium with a controlled content of copper. It can be hardened by cold work: it is not heat treatable to higher strength. It has excellent ductility, up to 30% in annealed material of 1.3 to 6.0 mm thickness. The ductility is more limited in the H14 and H24 tempers.

Austral Wright Metals can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

Pressure Vessels AS1210 Pressure Vessels prequalifies alloy 1100 for pressure service for temperatures up to 200°C in the O, H12, H14 & H112 tempers.

The technical advice and recommendations made in this Product Data Sheet should not be relied or acted upon without conducting your own further investigations, including corrosion exposure tests where needed. Please consult current editions of standards for design properties. Austral Wright Metals assumes no liability in connection with the information in this Product Data Sheet.