

Alloy: **AC601**



Chemical Composition Limits:

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	AC601

Hayes Metals Internal	B7602
Product Code(s):	C7602

Element	Standard	
	Min %	Max %
Al	Remainder	
Si	6.5	7.5
Fe		0.20
Cu		0.05
Mn		0.05
Mg	0.30	0.40
Cr		
Ni		
Zn		0.05
Sn		
Pb		
Ti		0.20
Sr	0.02	0.04
Footnote: Strontium (Sr) added as a modifying agent to enhance mechanical properties. Ti not added as it is in AA601.		
Others - each		0.05
Total Others		0.15

Nearest Related Chemical Composition Specifications: (Guide only)

British Standard Alloy: **LM25**

Aluminium Association (US) Alloy Type: **A356**

German Alloy: **AlSi7Mg**

Japanese (JIS) Alloy: **AC4C**

ISO Alloy:

Mechanical Properties of Test Bars:

Temper	Casting Method	Tensile Strength (MPa)	
		Ult (min)	Ult (typ)
T1	Sand Cast	130	160
T6	Sand Cast	205	255
T1	Gravity Diecast	140	195
T6	Gravity Diecast	220	275

Yield (Mpa) (typ)	Elongation (% on 50 mm min)		Brinell Hardness (typ)
	(min)	(typ)	
90	2	5	55
185	3	5	70
95	3	6	
185	5	10	100

Recommended Heat Treatment Method:

T5: Age at 225°C for 8 hours. **T6:** 540°C for 8 hours, quench in hot water (not less than 60°C). Hold at room temperature for 8-16 hours. Age at 155°C for 4 hours.

- Footnotes:**
- Nominal metal temperature should be obtained as rapidly as possible and maintained within ± 5°C during the time at temperature.
 - For maximum effectiveness of solution heat treatment, quench water should be kept as low as possible consistent with a minimum of 60°C.

Typical Physical Properties:

Density	Thermal Conductivity	Freezing Range Approx. °C		Electrical Conductivity at 20°C	Average Coefficient of Thermal Expansion
		Solidus	Liquidus		
kg/m ³ x 10 ³	at 25°C W/m.K			%ACS Equal Volume	per °C
2.68	151	560	610	39	21.4

Relative Ratings: (Ratings: Excellent - Good - Fair - Unsuitable)

Corrosion Resistance	Weldability (see footnote 1)	Pressure Tightness	Machinability	Castability By Method of Casting		
				Sand Cast	Gravity Die	Pressure
Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent

- Footnotes:**
- Unsoundness in castings may adversely affect the weldability rating.
 - Corrosion Resistance ratings refer to atmospheric corrosion.

Typical Uses / General Comments:

Transmission cases, truck axle housings, wheel cylinders blocks, railway tank car fittings, marine hardware, valve bodies and bridge rail parts. Used in applications where corrosion resistance combined with high strength is required. Used in food, chemical and marine applications. It's potential is increased by heat treatment.

The alloy data given above has been prepared by Hayes Metals for use by its customers and associates as a guide to this alloy's typical properties. For editorial reasons the given specifications may not include all the minute details of the governing specification and therefore at any dispute or query, the relative original Specification should be consulted.