

Alloy: **AA601**



**Chemical Composition Limits:**

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	AA601

Hayes Metals Internal	B7601
Product Code(s):	C7601

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
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: **AlSi7Mg**

**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:**
1. Nominal metal temperature should be obtained as rapidly as possible and maintained within ± 5°C during the time at temperature.
  2. 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 kg/m <sup>3</sup> x 10 <sup>3</sup>	Thermal Conductivity at 25°C W/m.K	Freezing Range Approx. °C	
		Solidus	Liquidus
2.68	151	560	610

Electrical Conductivity at 20°C %IACS Equal Volume	Average Coefficient of Thermal Expansion per °C
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:**
1. Unsoundness in castings may adversely affect the weldability rating.
  2. 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. Its 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.