

Alloy: **CA401**



Chemical Composition Limits:

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	CA401

Hayes Metals Internal	B7401
Product Code(s):	C7401

Element	Standard	
	Min %	Max %
	Remainder	
Al		
Si	12.0	13.0
Fe		0.40
Cu		0.10
Mn		0.10
Mg		0.05
Cr		
Ni		0.05
Zn		0.10
Sn		
Pb		
Ti		0.20
Others - each		0.05
Total Others		0.15

Nearest Related Chemical Composition Specifications: (Guide only)

British Standard Alloy: **LM6**

Aluminium Association (US) **A413**
Alloy Type:

German Alloy: **AlSi12**

Japanese (JIS) Alloy: **AC3A**

ISO Alloy: **AlSi12**

Mechanical Properties of Test Bars:

Temper	Casting Method	Tensile Strength (MPa)	
		Ult (min)	Ult (typ)
F1	Sand Cast	160	180
F1	Gravity Diecast	190	205

Yield (Mpa) (typ)	Elongation (% on 50 mm min)		Brinell Hardness (typ)
	(min)	(typ)	
70	5	7	50
90	7	9	60

Recommended Heat Treatment Method:

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- Footnotes:**
1. Nominal metal temperature should be obtained as rapidly as possible and maintained within $\pm 5^{\circ}\text{C}$ 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	Thermal Conductivity	Freezing Range	
		Solidus	Liquidus
$\text{kg/m}^3 \times 10^3$	at 25°C W/m.K		
2.65	142	570	580

Electrical Conductivity at 20°C	Average Coefficient of Thermal Expansion
%IACS Equal Volume	per $^{\circ}\text{C}$
37	20.8

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	Fair	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:

Widely used in automotive, marine, chemical, furniture, food processing, domestic appliances and general engineering components.

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.