



ALLOY DATA SHEET

ALLOY GROUP ¹	NUMERICAL DESIGNATION ¹	CHEMICAL DESIGNATION ¹	S.A.V. ALLOY CODE
AISi7Mg	EN AB - 42100	EN AB-AI Si7Mg0,3	0101188

¹EN 1676:2020 Aluminium and aluminium alloys – Alloyed ingots for remelting – Specifications

INGOTS CHEMICAL COMPOSITION

Alloy	% wt	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other Each	Other Total
EN AB - 42100 ¹	Min.	6,5	-	-	-	0,30	-	-	-	-	-	-	-	-
	Max	7,5	0,15	0,03	0,10	0,45	-	-	0,07	-	-	0,18	0,03	0,10

¹EN 1676:2020 Aluminium and aluminium alloys – Alloyed ingots for remelting – Specifications

CASTINGS CHEMICAL COMPOSITION

Alloy	% wt	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other Each	Other Total
EN AC - 42100 ²	Min.	6,5	-	-	-	0,25	-	-	-	-	-	-	-	-
	Max	7,5	0,19	0,05	0,10	0,45	-	-	0,07	-	-	0,25	0,03	0,10

²EN 1706:2020 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties

MECHANICAL PROPERTIES²

Minimum mechanical properties for separately cast sample

Casting method	Temper designation	Tensile strength R _m [MPa] min.	Yield strength R _{p0,2} [MPa] min	Elongation A [%] min	Brinnell hardness HBW min
Sand Casting	T6	230	190	2	75
	T64	200	120	4	60
Chill Casting	T6	290	210	4	90
	T64	250	180	8	80
Low Pressure die Casting	T6	290	210	4	90
	T64	250	180	8	80
Investment Casting	T6	260	200	3	75
Pressure die Casting	-	-	-	-	-
Potential mechanical properties of test specimens from castings ³	.4	300	240	11	100

²EN 1706:2020 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties

³It cannot be assumed that the given values can be reached throughout the casting since mechanical properties strongly depend on the solidification rate, the heat treatment and the soundness of the casting. Therefore, the values and the position of the area where those values can be achieved shall be agreed between supplier and customer.

⁴ The heat treatment has to be defined according to the type of casting produced.

PHYSICAL PROPERTIES²

CASTING METHOD	SAND CASTING		OTHER PROPERTIES	MACHINABILITY IN THE AS CAST STATE	
				✓	
CASTABILITY	PERMANENT MOULD CASTING		✓	MACHINABILITY AFTER HEAT TREATMENT	
	PRESSURE DIE CASTING		-	B	
	INVESTMENT CASTING		✓	RESISTANCE TO CORROSION	
	FLUIDITY		B	DECORATIVE ANODIZING	
MECHANICAL PROPERTIES	RESISTANCE TO HOT TEARING		A	ABILITY TO BE WELDED	
	PRESSURE TIGHTNESS		B	ABILITY TO BE POLISHED	
	STRENGTH AT ROOM TEMPERATURE		A	LINEAR THERMAL EXPANSION [10 ⁻⁶ /K] (293 K-373 K)	
	STRENGTH AT HIGH TEMPERATURE 200 °C		C	ELECTRICAL CONDUCTIVITY [MS/m]	
	DUCTILITY (SHOCK RESISTANCE)		A	THERMAL CONDUCTIVITY [W/(m K)]	
	FATIGUE RESISTANCE [MPa]		80 - 110	20 - 27	
				160 - 180	

✓ Indicates the most commonly casting process used for each alloys

A: Optimal	B: good	C: Fair	D: Poor	E: Not Recommended	F: Unsuitable
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²EN 1706:2020 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties



HEAT TREATMENT DESIGNATION²

ABBREVIATION	HEAT TREATMENT
F	AS CAST
O	ANNEALED
T1	CONTROLLED COOLING FROM CASTING AND NATURALLY AGED
T4	SOLUTION HEAT TREATED AND NATURALLY AGED WHERE APPLICABLE
T5	CONTROLLED COOLING FROM CASTING AND ARTIFICIALLY AGED OR OVER-AGED
T6	SOLUTION HEAT TREATED AND ARTIFICIALLY AGED
T64	SOLUTION HEAT TREATED AND ARTIFICIALLY UNDER-AGED
T7	SOLUTION HEAT TREATED AND ARTIFICIALLY OVER-AGED (STABILIZED)

²EN 1706:2020 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties

CORRELATION WITH OTHER STANDARDS

EN AB - 42100 / EN AC - 42100

NATION	U.S.A.	JAPAN	INTERNATIONAL	ITALY	FRANCE	GERMANY	GREAT BRITAIN
STANDARD	B179	H2211	17615	UNI	NF A57-702	1725	BS 1490
STATUS	ACTIVE	ACTIVE	ACTIVE	SUPERSEDED	SUPERSEDED	SUPERSEDED	SUPERSEDED
IDENTICAL STANDARD			Al Si7Mg0.3				
INGOT SPECIFICATION							
SIMILAR STANDARD	A356.1 A356.2	AC4CH.1 AC4CH.2	-	G-Al Si 7 Mg Ti UNI 8024	A-S7G03	GB-AISi7Mg	LM25
INGOT SPECIFICATION							

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The physical and mechanical properties shown in this data sheet have a mere informative purpose since they are detected on sample cast separately in specific cooling conditions. No liability is accepted for decisions based on the indicated physical and mechanical properties and no guarantee is given for the physical and mechanical properties indicated, as they depend on the specific conditions of casting of the cast pieces.