



TECHNICAL DATA-SHEET

ALLOY DESCRIPTION: EN AB 51100 - Al Mg 3 (a)

ALLOY GROUP: Al Mg

STANDARD: UNI EN 1676 e 1706

CHEMICAL COMPOSITION %

Alloy	Elements	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Others each	Others tot.
EN AB 51100	Min					2,7								
	Max	0,45	0,40	0,03	0,45	3,5	0,05	0,05	0,10	0,05	0,05	0,15	0,05	0,15
EN AC 51100	Min					2,5								
	Max	0,55	0,55	0,05	0,45	3,5	0,05	0,05	0,10	0,05	0,05	0,20	0,05	0,15

MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGTH	YIELD STRENGTH	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
SAND CASTING	F	140	70	3	50
SHELL CASTING	F	150	70	5	50

PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,68 Kg/dm ³	SOLIDIFICATION AND MELTING RANGES	600-640 °C
FATIGUE RESISTANCE	80-110 MPA	OPTIMUM RANGE OF SAND CASTING	720-750 °C
ELECTRIC CONDUCTIVITY	14-16 MS/m	OPTIMUM RANGE OF SHELL CASTING	720-750 °C
THERMAL CONDUCTIVITY	130-140 W/(m K)	THERMAL EXPANSION (from 20°C to 100°C)	24·10 ⁻⁶ /K

TECHNOLOGICAL PROPERTIES - EN 1706:2020

CASTABILITY	MEDIUM	RESISTANCE TO HOT TEARING	SUFFICIENT
WELDABILITY	MEDIUM	STRENGTH AT ELEVATED TEMPERATURE	GOOD
POLISHING	EXCELLENT	PRESSURE TIGHTNESS	SUFFICIENT
MACHINABILITY	EXCELLENT	DECORATIVE ANODIZING	EXCELLENT
CORROSION RESISTANCE	EXCELLENT	PROTECTIVE ANODIZING	EXCELLENT

APPLICATIONS

Corrosion resistant alloy, mainly used in the marine, furniture and food industries.
Used in sand and shell casting. Alloy compliant with the Food standard EN 601.

HEAT TREATMENTS

	SOLUBILISATION TEMPERATURE	SOLUBILISATION DURATION	WATER HARDENING TEMPERATURE	AGEING TEMPERATURE	AGEING DURATION
F RAW STATE	-	-	-	-	-
O ANNEALING	520-530 °C	6-8 hours	20 °C	-	-
T1 SELF-HARDENING	-	-	-	-	-
T4 SOLUBILISATION AND NATURAL AGEING	480-530 °C	2-16 hours	20-80 °C	15-30 °C	120 hours
T5 CONTROLLED COOLING AND ARTIFICIAL AGEING	-	-	AIR	210-230 °C	5-12 hours
T6 SOLUBILISATION AND ARTIFICIAL AGEING	480-555 °C	2-20 hours	20-80 °C	130-185 °C	2-15 hours
T64 SOLUBILISATION AND PARTIAL AGEING	520-545 °C	4-10 hours	20-50 °C	135-160 °C	2-7 hours
T7 HYPERAGEING	480-530 °C	1-8 hours	20 °C	190-240 °C	1-8 hours

The temperatures and the duration of the treatments vary according to the type of alloy, melting (shell, sand or die casting) and the result you want to obtain.

Ideal parameters shall be determined by a test.

EQUIVALENTS OR SIMILARS FOREIGN REGULATIONS

	ITALY	GERMANY	FRANCE	G.B.R.	USA	ISO	JAPAN	TURKEY
	UNI	Din1725/5-86	NFA57-105	BS1490-88	ASTM 179-82	3522-84	JIS H2211-92	ETIAL
Equivalents		242			514.0-514.1	Al Mg 3	D6 V	
Similar	SA 503.1	244	AG 3T	LM 5	SAE 330		D65-ADC6	

What is indicated in this data sheet is limited to inform only and does not imply any guarantee regarding the properties reported.

Everything that involves decisions based on the information stated here is direct responsibility of the end user, as well as any risks, not excluded from the verification.