ARM Assisi Recycling Maclodio Spa
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TECHNICAL DATA-SHEET

ALLOY DESCRIPTION: EN AB ed AC 21100 - Al Cu 4 Ti
ALLOY GROUP: Al Cu
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 21100	Min			4,2								0,15		
	Max	0,15	0,15	5,2	0,55	0,03	0,03	0,03	0,07	0,03	0,03	0,25	0,03	0,10
EN AC 21100	Min			4,2								0,15		
	Max	0,18	0,19	5,2	0,55	0,03	0,03	0,03	0,07	0,03	0,03	0,30	0,03	0,10

MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGHT	YIELD STRENGHT	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
SAND CASTING	T6	300	200	3	95
	T64	280	180	5	85
SHELL CASTING	T6	330	220	7	95
	T64	320	180	8	90

PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,79 Kg/dm^3	**SOLIDIFICATION AND MELTING RANGES**	540-650°C
FATIGUE RESISTANCE	80-110 MPA	**OPTIMUM RANGE OF SAND CASTING**	700-750°C
ELECTRIC CONDUCTIVITY	16-23 MS/m	**OPTIMUM RANGE OF SHELL CASTING**	700-730°C
THERMAL CONDUCTIVITY	120-150 W/(m K)	**THERMAL EXPANSION (from 20°C to 100°C)**	$23 \cdot 10^{-6}$/K

TECHNOLOGICAL PROPERTIES - EN 1706:2020

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

APPLICATIONS

Alloy with excellent mechanical characteristics (tensile strength, yield strength, hardness and elongation).
Alloy not 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		220/1	A U 5 G T		204.2	AlCu 4 MgTi		
Similars					201.2			