



### TECHNICAL DATA-SHEET

**ALLOY DESCRIPTION:** EN AB ed AC 44500 - Al Si 12 (FE) (b)

**ALLOY GROUP:** Al Si

**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 44500	Min	10,5	0,45											
	Max	13,5	0,9	0,18	0,55	0,40	0,05	0,05	0,30	0,05	0,05	0,15	0,05	0,25
EN AC 44500	Min	10,5												
	Max	13,5	1,0	0,20	0,55	0,40	0,05	0,05	0,30	0,05	0,05	0,15	0,05	0,25

#### MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGTH	YIELD STRENGTH	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
DIE CASTING	F	240	140	1	60

#### PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,68 Kg/dm <sup>3</sup>	SOLIDIFICATION AND MELTING RANGES	570-580°C
FATIGUE RESISTANCE	60-90 MPA	OPTIMUM RANGE OF DIE CASTING	640-680°C
ELECTRIC CONDUCTIVITY	16-22 MS/m	THERMAL EXPANSION (from 20°C to 100°C)	20·10 <sup>-6</sup> /K
THERMAL CONDUCTIVITY	130-160 W/(m K)		

#### TECHNOLOGICAL PROPERTIES - EN 1706:2020

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

#### APPLICATIONS

Alloy with good mechanical properties and good corrosion resistance.

Alloy compliant with 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		230 D	AS 12					
Similar	4514	230 A		LM 20	413.2			ETIAL 141

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.