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TECHNICAL DATA-SHEET

ALLOY DESCRIPTION: EN AB ed AC 46000 - Al Si 9 Cu 3 (Fe)
ALLOY GROUP: Al Si 9 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 46000	Min	8,0	0,6	2,0		0,15								
	Max	11,0	1,1	4,0	0,55	0,55	0,15	0,55	1,2	0,29	0,15	0,20	0,05	0,25
EN AC 46000	Min	8,0		2,0		0,05								
	Max	11,0	1,3	4,0	0,55	0,55	0,15	0,55	1,2	0,29	0,15	0,25	0,05	0,25

MECHANICAL PROPERTIES - EN 1706:2020

CASTING PROCESS	TEMPER DESIGNATIONS	TENSILE STRENGHT	YIELD STRENGHT	ELONGATION	BRINELL HARDNESS
		(Mpa)	(Mpa)	(%)	(HBW)
DIE CASTING	F	240	140	< 1	80
	T5	240	165	< 1	85

PHYSICAL PROPERTIES - EN 1706:2020

DENSITY	2,75 Kg/dm^3	**SOLIDIFICATION AND MELTING RANGES**	500-600 °C
FATIGUE RESISTANCE	60-90 MPA	**OPTIMUM RANGE OF DIE CASTING**	630-710 °C
ELECTRIC CONDUCTIVITY	13-17 MS/m	**THERMAL EXPANSION (from 20°C to 100°C)**	21·10^{-6}/K
THERMAL CONDUCTIVITY	110-120 W/(m K)		

TECHNOLOGICAL PROPERTIES - EN 1706:2020

CASTABILITY	GOOD	**RESISTANCE TO HOT TEARING**	GOOD
WELDABILITY	NOT SUFFICIENT	**STRENGHT AT ELEVATED TEMPERATURE**	GOOD
POLISHING	MEDIUM	**PRESSURE TIGHTNESS**	MEDIUM
MACHINABILITY	GOOD	**DECORATIVE ANODIZING**	POOR
CORROSION RESISTANCE	SUFFICIENT	**PROTECTIVE ANODIZING**	POOR

APPLICATIONS

Alloy mainly used in the German automotive industry.
Suitable for the production of complex castings and resistant to high temperatures.
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		DIN 226 D						
Similars	5075	DIN 226 A	AS 9 U 3	LM 24	333.1 - 332.0			ETIAL 160