

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si 10 Mg**

Alloy designation: **EN AB and AC 43300 Al Si 9 Mg**

Replaces:

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti			
EN AB 43300	min	9,0				0,30									
	max	10,0	0,15	0,03	0,10	0,45	-	-	0,07	-	-	0,15	0,03	0,10	
	min	9,0				0,30									
	max	10,0	0,15	0,01	0,05	0,45	-	-	0,07	-	-	0,05	0,03	0,10	

MECHANICAL FEATURES DETECTED FROM SEPARATE CASTING TEST SPECIMENS

Casting process	Temper designations	Rm Tensile strenght		Sp 0,2 Yield strenght		A Elongation		HB Brinell hardness	
		EN 1706		EN 1706		EN 1706		EN 1706	
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast) Hardened and Aged artif.	F		160 - 220		80 - 140		2 - 6		50 - 60
	T6	230	250 - 300	190	200 - 270	2	2 - 5		80 - 110 75
SHELL (as cast) Hardened and Aged artif. Partially Aged	F		180 - 240		90 - 150		2 - 6		60 - 80
	T6	290	260 - 340	210	200 - 280	4	4 - 7		85 - 115 90
	T64	250	260 - 340	180	200 - 280	6	4 - 7		85 - 115 80
PRESSURE DIE (as cast)	F								

PHYSICAL PROPERTIES (indicative values subject to the UNI EN and ex DIN Standards)

DENSITY	2.65 Kg/dm ³
MELTING RANGE or MELTING POINT	550 °C 600 °C
SPECIFIC HEAT (at 100°)	0.90 J/Gk
LINEAR SHRINKAGE IN SAND	1.0 - 1.1 %
LINEAR SHRINKAGE IN SHELL PROCES	0.7 - 1.0 %
LINEAR SHRINKAGE IN HIGH PRESSUR	04 - 06 %
ELECTRIC CONDUCTIVITY	20 - 26 MS/m
MODULUS OF ELASTICITY	7600 Kg/mm ²

THERMAL CONDUCTIVITY at 20°C	150 - 180 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	-
LINEAR THERMAL EXPANSION from 20 t 200°C	21.0-10-6/°C
LINEAR THERMAL EXPANSION from 20 t 300°C	-
SUGGESTED MAXIMUM TEMPERATURE	780 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	680 - 750 °C
°in shell	680 - 730 °C
°in pressure die	-

TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS

STRENGTH AT ELEVATED TEMPERATURE(to 200°C)	LOW
GENERAL RESISTANCE TO CORROSION	GOOD
MACHINABILITY	EXCELLENT
CASTABILITY	GOOD
POLISHING	MEDIUM

RESISTANCE TO HOT TEARING	SMALL
PRESSURE TIGHTNESS	GOOD
WELDABILITY	EXCELLENT
DECORATIVE ANODISING	LOW
PROTECTIVE ANODISING	

COMPARISON WITH EQUIVALENT OR SIMILAR FOREIGN STANDARDS

	ITALY	GERMANY	FRANCE	G.B.R.	USA	ISO	JAPAN	TURKEY
	UNI	(Din1725/5-86)	(NFA57-105)	(BS1490-88)	(ASTM B179-82)	(3522-84)	(JIS H2211-92)	(ETIAL)
Equivalent		GB AISi 9 Mg					AC4A.2	
Similar	UNI 3051							ETIAL - 171

HEAT TREATMENTS

Hardening 520 - -535°C after pre-heating of 6 - 10 hours in normal conditions
Complete Artificial Aging at 160 - 175°C for 6 - 8 hours.