

Standard: **UNI EN 1676 and 1706**

Alloy group: **Al Si 10 Mg**

Alloy designation: **EN AB and AC 43100 Al Si 10 Mg (b)**

Replaces: **DIN 239 A - Al Si 10 Mg**

CHEMICAL COMPOSITION %

ALLOY		ELEMENTS												Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti			
EN AB 43100	min	9,0				0,25									
	max	11,0	0,45	0,08	0,45	0,45	-	0,05	0,10	0,05	0,05	0,15	0,05	0,15	
DIN 239 A - Al Si 10 Mg	min	9,0				0,20									
	max	11,0	0,50	0,05	0,4	0,50	-	0,05	0,10	0,05	0,05	0,15	0,05	0,15	

MECHANICAL FEATURES DETECTED FROM SEPARATE CASTING TEST SPECIMENS

Casting process	Temper designations	Rm		Sp 0,2		A		HB	
		Tensile strenght		Yield strenght		Elongation		Brinell hardness	
		EN 1706	DIN 1725	EN 1706	DIN 1725	EN 1706	DIN 1725	EN 1706	DIN 1725
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast)	F	150	160 - 210	80	80 - 110	2	2 - 6	50	50 - 60
	Hardened and Aged artif. T6	220	220 - 320	180	180 - 260	1	1 - 4	75	80 - 110
SHELL (as cast)	F	180	180 - 240	90	90 - 120	2,5	2 - 6	55	60 - 80
	Hardened and Aged artif. T6	260	240 - 320	220	210 - 280	1	1 - 4	90	85 - 115
Hardened and Sub-aged artif. T64		240		200		2		80	
PRESSURE DIE (as cast)									

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

DENSITY	2.68 Kg/dm ³
MELTING RANGE or MELTING POINT	550 °C 600 °C
SPECIFIC HEAT (at 100)°	0.91 J/Gk
LINEAR SHRINKAGE IN SAND PROCESS	1.0 - 1.2 %
LINEAR SHRINKAGE IN SHELL PROCESS	0.5 - 0.8 %
ELECTRIC CONDUCTIVITY	18 - 25 MS/m
MODULUS OF ELASTICITY	7400 Kg/mm ²

THERMAL CONDUCTIVITY at 20°C	140 - 170 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	21 10-6/°K
LINEAR THERMAL EXPANSION from 20 t 200°C	22.0-10-6/K
LINEAR THERMAL EXPANSION from 20 t 300°C	-
SUGGESTED MAXIMUM TEMPERATURE	770 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	680 - 750 °C
°in shell	680 - 750 °C
°in pressure die	-

TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS

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

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

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		239 A	AS 10 G			Al Si 10 Mg	C 4 AS	
Similar	3051	239 D		LM 9	A 360.2			ETIAL - 171

HEAT TREATMENTS

Hardening 520 - -530°C after pre-heating of 3 - 6 hours in normal conditions
Complete Artificial Aging at 150 - 175°C for 6 - 10 hours.