

Standard: **UNI EN 1676 and 1706**

 Alloy group: **Al Si 9 Cu**

 Alloy designation: **EN AB and AC 46400 - Al Si 9 Cu 1 Mg**

 Replaces: **UNI 7369/3 - SG Al Si 9 Cu 1**
**CHEMICAL COMPOSITION %**

ALLOY		ELEMENTS											Individual impurities	Global impurities
		Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti		
EN AB 46400	min	8,3		0,8	0,15	0,30						0,10		
	max	9,7	0,7	1,3	0,55	0,65	-	0,20	0,8	0,10	0,10	0,18	0,05	0,25
UNI 7369/3	min	8,3		0,80	0,20	0,30						0,10		
	max	9,7	0,7	1,30	0,5	0,60	-	0,20	0,70	0,10	0,10	0,20		0,8*

**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	UNI 7369/3	EN 1706	UNI 7369/3	EN 1706	UNI 7369/3	EN 1706	UNI 7369/3
		Mpa	N/mm2	Mpa	N/mm2	%	%	HBW	HB
SAND (as cast)	F	135	145-165	90	90-110	1	1-1,5	60	60-80
SHELL (as cast)	F	170	215-235	100	135-155	1	3-4	75	70-80
	T6	275	295-315	235	245-255	1,5	2-3	105	105-130
PRESSURE DIE (as cast)									

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

DENSITY	2.8 Kg/dm <sup>3</sup>
MELTING RANGE or MELTING POINT	540 °C
	575 °C
SPECIFIC HEAT (at 100)°	0.23 cal/g °C
LATENT HEAT OF MELTING	93 cal/g
LINEAR SHRINKAGE	~1.30 %
ELECTRIC CONDUCTIVITY	16 - 22 MS/m
MODULUS OF ELASTICITY	7600 Kg/mm <sup>2</sup>

THERMAL CONDUCTIVITY at 20°C	130 - 150 W/(m K)
LINEAR THERMAL EXPANSION from 20 t 100°C	20.5x10 <sup>-6</sup> /°C
LINEAR THERMAL EXPANSION from 20 t 200°C	21.5x10 <sup>-6</sup> /°C
LINEAR THERMAL EXPANSION from 20 t 300°C	22.5x10 <sup>-6</sup> /°C
SUGGESTED MAXIMUM TEMPERATURE	780 °C
SUGGESTED CASTING TEMPERATURE	
°in sand	690-730 °C
°in shell	690-730 °C
°in pressure die	

**TECHNOLOGICAL FEATURES, QUALITATIVE INDICATIONS**

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

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

**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	7369/3							
Similar				LM 26	328.1 333.1			

**HEAT TREATMENTS**

 Water quenching from 510 to 530 °C after heating for 1-4 hours.  
 via heating from 185-200 °C to 1-4 hours and successive natural cooling in the air.

Artificial aging