S.A.V. S.p.A Società Alluminio Veneto

Aluminium alloys ingots for remelting

ALLOY DATA SHEET

ALLOY GROUP[1]	NUMERICAL DESIGNATION[1]	CHEMICAL DESIGNATION[1]	S.A.V. ALLOY CODE
AlSi10Mg	EN AB-43100	EN AB-Al Si10Mg(b)	01012191

[1]*EN 1676:2010 Aluminium and aluminium alloys – Alloyed ingots for remelting – Specifications*

INGOTS CHEMICAL COMPOSITION

Alloy	% wt	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other each	Other Total
EN AB-43100[1]	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

[1]*EN 1676:2010 Aluminium and aluminium alloys – Alloyed ingots for remelting – Specifications*

CASTINGS CHEMICAL COMPOSITION

Alloy	% wt	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Pb	Sn	Ti	Other each	Other Total
EN AC-43100[2]	Min.	9,0	-	-	-	0,20	-	-	-	-	-	-	-	-
	Max	11,0	0,55	0,10	0,45	0,45	-	0,05	0,10	0,05	0,05	0,15	0,05	0,15

[2]*EN 1706:2010 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties*

MECHANICAL PROPERTIES[2]

Minimum mechanical properties for separately cast sample

Casting method	Temper designation	Tensile strength R_m *[MPa] min.*	Yeld strenght $R_{p0,2}$ *[MPa] min*	Elongation *A [%]* min	Brinnell hardness *HBW* min
Sand Casting	F	150	80	2	50
	T6	220	180	1	75
Chill Casting	F	180	90	2,5	55
	T6	260	220	1	90
	T64	240	200	2	80
Investiment Casting	-	-	-	-	-
Pressure die Casting	-	-	-	-	-

[2]*EN 1706:2010 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties*

PHYSICAL PROPERTIES[2]

CASTING METHIOD	SAND CASTING	✔	OTHER PROPERTIES	MACHINABILITY IN THE AS CAST STATE	B/C
	PERMANENT MOULD CASTING	✔		MACHINABILITY AFTER HEAT TRETMENT	B
	PRESSURE DIE CASTING	–		RESISTANCE TO CORROSION	C
	INVESTMENT CASTING	–		DECORATIVE ANODIZING	E
CASTABILITY	FLUIDITY	A		ABILITY TO BE WELDED	A
	RESISTENCE TO HOT TEARING	A		ABILITY TO BE POLISHED	D
	PRESSURE TIGHTNESS	B		LINEAR THERMAL EXPANSION *[10^{-6}/K] (293 K-373 K)*	21
MECHANINICAL PROPERTIES	STRENGTH AT ROOM TEMPERATURE	B		ELECTRICAL CONDUCTIVITY *[MS/m]*	18 - 25
	STRENGTH AT ELEVATED TEMPERATURE 200 °C	C		TERMAL CONDUCTIVITY *[W/(m K)]*	140 - 170
	DUCTILITY (SHOCK RESISTENCE)	C			
	FATIGUE RESISTANCE *[MPA]*	80 - 110			

✔ Indicates the casting process most commonly used for each alloys	A: Optimal	B: good	C: Fair	D: Poor	E: Not Recommended	F: Unsuitable

[2]*EN 1706:2010 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties*

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HEAT TREATMENT DESIGNATION[2]	
ABBREVIATION	**HEAT TREATMENT**
F	AS CAST
O	ANNEALED
T1	CONTROLLED COOLING FROM CASTING AND NATURALLY AGED
T4	SOLUTION HEAT TREATED AND NATURALLY AGED WHERE APPLICABLE
T5	CONTROLLE COOLING FROM CASTING AND ARTIFICIALLY AGED OR OVER-AGED
T6	SOLUTION HEAT TREATED AND ARTIFICIALLY AGED
T64	SOLUTION HEAT TREATED AND ARTIFICIALLY UNDER-AGED
T7	SOLUTION HEAT TREATED AND ARTIFICIALLY OVER-AGED (STABILIZED)

[2]EN 1706:2010 Aluminium and aluminium alloys – Castings – Chemical composition and mechanical properties

CORRELATION WITH OTHER STANDARDS

EN AB-43100 / EN AC-43100

NATION	U.S.A.	JAPAN	INTERNATIONAL	ITALY	FRANCE	GERMANY	GREAT BRITAIN
STANDARD	**B179**	**H2211**	**17615**	**UNI**	**NF A57-702**	**1725**	**BS 1490**
STATUS	**ACTIVE**	**ACTIVE**	**ACTIVE**	**SUPERSEDED**	**SUPERSEDED**	**SUPERSEDED**	**SUPERSEDED**
IDENTICAL INGOT STANDARD SPECIFICATION	-	-	-	-	-	-	-
SIMILAR INGOT STANDARD SPECIFICATION	A360.2	AC4A	AlSi10Mg	-	A-S10G	GB-AlSi10Mg - 239A GB-AlSi10Mg(Cu) - 233	-

The physical and mechanical properties shown in this data sheet have a mere informative purpose since they are detected on sample cast separately in specific cooling conditions. No liability is accepted for decisions based on the indicated physical and mechanical properties and no guarantee is given for the physical and mechanical properties indicated which depend on the specific conditions of casting of the cast pieces.

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