

Material data sheet

EN AW-6023 [EN AW-Al Si1Sn1MgBi] Unleaded free-cutting quality

Compliance with the requirements of the EU directives RoHS 2011/65/EU and ELV 2000/53/EC

1) Chemical composition according to DIN EN 573-3 [% by mass, remainder Al]

%	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Bi	Sn	Each
min.	0.6	-	0.20	0.20	0.40	-	-	-	-	0.30	0.6	-
max.	1.4	0.50	0.50	0.6	0.9	-	-	-	-	0.8	1.2	0.15

2) Mechanical properties according to DIN EN 754-2 drawn / DIN EN 755-2 extruded

Temper	Dimensions in mm		R _m MPa		R _{p0,2} MPa		A%	A _{50mm} %	HBW
	D ^a	S ^b	min.	max.	min.	max.	min.	min.	Typical value
T6	6≥80	15≥80	320	-	270	-	10	-	-
T8	6≥50	-	340	-	310	-	8	-	-
T6	≤150	15≥80	320	-	270	-	10	8	-

D^a = Diameter for round rod / S^b = Width across flat for square and hexagonal rod, Thickness for rectangular rod / c Properties may be obtained by press quenching.

Classification: 1=very good / 6=insufficient

Physical properties		General properties			
Density g/cm ³	2.72	Corrosion resistance to atmospheric influences seawater Brazeability: Brazing with flux Brazing without flux Friction soldering Soft soldering with flux	2 3 ns ns ns ns	Surface treatment Protection anodizing Decorative anodizing Painting/Coating	2 2 2
Modulus of elasticity MPa	69000				
Thermal conductivity W/(m K)	160-185				
Coefficient of thermal expansion (20-100 °) 10 ⁻⁶ /K	23.4				
Electrical conductivity MS/m	26-28				
Weldability		Machining properties			
Gas	3	Annealed			-
TIG	3	Work hardened			-
MIG	3	Precipitation hardened			2
Resistance fusion welding	3	Cutting speed v=m/min			ns
		Chip shape			ns

Errors and changes excepted/This document is not subject to revision.