



CHEMICAL COMPOSITION

Aluminium and aluminium alloys

Alloy designation:

EN AW	Al Mg1 Si Cu
Old designation	Al Mg1 Si Cu
Material no. according to DIN	3.3211
Great Britain BS	H20
Italy UNI	9006/2
Spain	L-3420
Sweden	
Norway	
France AFNOR	A-GSUC
Colour code	

Typical physical properties:

Density [g/cm ³]	2,70	
Elastic modulus [GPa]	70,0	
Thermal conductivity [W/m*K]	170 – 200	
Thermal expansion coefficient [K ⁻¹ *10 ⁻⁶]	-50°C – 20°C	
	20°C – 100°C	23,0
	20°C – 200°C	
	20°C – 300°C	
Specific heat J/(kg * K)		
Electrical conductivity [m/Ω*mm ²]	22 – 30	
Shear modulus [GPa]	26,3	

Chemical composition* (EN 573-3):

Specifications in %											Remainder: Aluminium		Other	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	Note	Individual	Total ²	
0,40 – 0,80	0,70	0,15 – 0,40	0,15	0,80 – 1,2	0,04 – 0,35	-	0,25	0,15	-	-	-	0,05	0,15	

^x Chemical specifications as perc. of weight. If no ranges are specified, the alloy content has the maximum value.

² Includes all items listed for which no limit values are specified.

Special features of this material:

- Good corrosion resistance
- Good welding properties
- Curable alloy
- Good machinability

Applications:

- Shipbuilding
- Railed vehicles
- Boiler and container construction
- Aerospace
- Military technology

Heat treatment:

Soft annealing / recrystallisation annealing	
Annealing temperature	380°C – 420°C
Heating-up time	1 – 2 hours
Cooling conditions	Cooling conditions 30°C/h to 250°C, below 250°C in air

Hardening

Solution annealing	525°C – 540°C
Quenching	water
Natural ageing treatment	5 – 8 days
Artificial ageing treatment	155°C – 190°C · 4 – 16 hours

Other data:

Processing / machinability

Soft annealed	4
Work-hardened	-
Heat-treated	2
Dimensional stability	-
Erosion	1

Surface treatment

Anodising - (protective anodisation)	1
Special anodising quality (EQ) ^{EQ}	-
Anodising - decorative	3
Painting / coating	2
Polishing	1 – 2

Welding

		Filler metal
Gas	3	SG-Al Mg4 SG-Al Mg4,5 Mn SG-Al Si5
WIG	2	
MIG	1	
Resistance welding	3	

Solder

Brazing with flux	3 – 5
Brazing without flux	4
Abrasion soldering	2
Soft soldering with flux	3

Corrosion resistance

In a normal atmosphere/ weather conditions	2
Sea water atmosphere	2 – 3

Metal forming

Cold forming	Delivery condition	
Bending	3	T3 · T4
Pressure forming	2	O
Deep drawing (condition-based)	2	O
Upsetting (condition-based)	2	O
Impact extrusion	2	O

Hot forming

Drop forging	2
Extrusion moulding	2
Hammer forging	2

Suitable for food industry according to DIN EN 602	yes
--	-----

Legend:

- 1 very good
- 2 good
- 3 moderate
- 4 poor
- 5 unsuited
- EQ anodising quality must be ordered separately and confirmed

The specifications in our data sheets are subject to correction and are only valid as references. Liability is excluded in this regard. We reserve the right to make changes to the standards and informative values. The agreements of our order confirmation are always authoritative. With regard to anodic oxidisability, we point out that we accept no liability for the anodisation result and the colour formation for decorative applications. The same applies to the corrosion resistance. Special arrangements must be made in writing.

Available forms:

Sheets · Plates · Bars · Tubes · Wires · Parts from drawings

BIKAR-METALLE GmbH
Industriestrasse • D-57319 Bad Berleburg

e-mail: info@bikar.com
web: www.bikar.com

phone: +49(0)2751/9551 111
fax: +49(0)2751/9551 555

BIKAR
METALLE