



## CHEMICAL COMPOSITION

### Aluminium and aluminium alloys

#### Alloy designation:

EN AW	Al Zn5,5 Mg Cu
Old designation	Al Zn Mg Cu1,5
Material no. according to DIN	3.4365
Great Britain BS	2L95
Italy UNI	9007/2
Spain	
Sweden	
Norway	
France AFNOR	A-Z5GU
Colour code	RAL 4005 Blue Lilac

#### Typical physical properties:

Density [g/cm <sup>3</sup> ]	2,80	
Elastic modulus [GPa]	72	
Thermal conductivity [W/m*K]	130 – 160	
Thermal expansion coefficient [K <sup>-1</sup> *10 <sup>-6</sup> ]	-50°C – 20°C	21,6
	20°C – 100°C	23,4
	20°C – 200°C	24,3
	20°C – 300°C	25,2
Specific heat J/(kg * K)	862	
Electrical conductivity [m/Ω*mm <sup>2</sup> ]	19 – 23	
Shear modulus [GPa]	27,1	

#### Chemical composition\* (EN 573-3):

Specifications in %												Remainder: Aluminium		Other	
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Ga	V	Note	Individual	Total <sup>2</sup>		
0,40	0,50	1,2 – 2,0	0,30	2,1 – 2,9	0,18 – 0,28	-	5,1 – 6,1	0,20	-	-	<sup>3</sup>	0,05	0,15		

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

<sup>2</sup> Includes all items listed for which no limit values are specified.

<sup>3</sup> Sum for Zr+Ti max. 0,25. This applies to forged or extruded products when the value has been agreed upon between the customer and supplier.

#### Special features of this material:

- Curable alloy with very high strength
- Very high fatigue strength
- Good machinability

#### Applications:

- Tool making, mould making and model making
- Aerospace
- Military technology

#### Available forms:

Sheets · Plates · Cuttings · Circular blanks · Rings · Bars · Tubes · Wires · Parts from drawings

#### Heat treatment:

Soft annealing / recrystallisation annealing	
Annealing temperature	380°C – 420°C
Heating-up time	2 – 3 hours
Cooling conditions	≤ 30°C/h to 230°C + 3 – 5 hours hold time, below 230°C in air

#### Other data:

##### Processing / machinability

Soft annealed	-
Work-hardened	-
Heat-treated	2
Dimensional stability	4 – 5
<b>Erosion</b>	1

##### Surface treatment

Anodising - (protective anodisation)	3
Special anodising quality (EQ) <sup>FQ</sup>	-
Anodising - decorative	5
Painting / coating	3
Polishing	1

##### Welding

	Filler metal
Gas	5
WIG	5
MIG	5
Resistance welding	2

##### Solder

Brazing with flux	5
Brazing without flux	5
Abrasion soldering	5
Soft soldering with flux	5

Hardening	
Solution annealing	470°C – 480°C
Quenching	water
Natural ageing treatment	Artificial ageing is usual
Artificial ageing treatment	1. stage 110°C – 125°C · 12 – 24 hours 2. stage 165°C – 180°C · 4 – 6 hours

##### Corrosion resistance

In a normal atmosphere/ weather conditions	4
Sea water atmosphere	4

##### Metal forming

Cold forming	Delivery condition	
Bending	4	O
Pressure forming	5	
Deep drawing (condition-based)	4 – 5	O
Upsetting (condition-based)	5	
Impact extrusion	5	
Hot forming		
Drop forging	4	
Extrusion moulding	4 – 5	
Hammer forging	4	

Suitable for food industry according to DIN EN 602	no
Working temperatures	Long-term approx. 90°C Short-term approx. 110°C – 125°C

#### 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.