



## CHEMICAL COMPOSITION

### Aluminium and aluminium alloys

#### Alloy designation:

EN AW	Al 99,5
Old designation	Al 99,5
Material no. according to DIN	3.0255
Great Britain BS	1B
Italy UNI	9001/2
Spain	L-3051
Sweden	144007
Norway	17010
France AFNOR	A5
Colour code	RAL 9004 Signal black
	RAL 3020 Traffic red

#### Typical physical properties:

Density [g/cm <sup>3</sup> ]	2,70	
Elastic modulus [GPa]	69	
Thermal conductivity [W/m*K]	210 – 220	
Thermal expansion coefficient [K <sup>-1</sup> *10 <sup>-6</sup> ]	-50°C – 20°C	21,7
	20°C – 100°C	23,5
	20°C – 200°C	24,4
	20°C – 300°C	25,4
Specific heat J/(kg * K)	900	
Electrical conductivity [m/Ω*mm <sup>2</sup> ]	34 – 36	
Shear modulus [GPa]	25,9	

#### 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>	
0,25	0,40	0,05	0,05	0,05	-	-	0,07	0,05	-	-	-	0,03	-	

<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.

#### Special features of this material:

- Very good welding properties
- Very good corrosion resistance to a normal atmosphere
- Very high electrical conductivity as well as thermal conductivity
- Very good anodising properties, also decorative
- Very good malleability

#### Applications:

- Deep drawn parts, moulded pressure parts and sheet metal parts
- Parts with a decorative surface
- Automotive parts
- Panelling in machine construction and plant construction
- Food industry

#### Available forms:

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

#### Heat treatment:

Soft annealing / recrystallisation annealing	
Annealing temperature	320°C – 350°C
Heating-up time	0,5 – 2 hours
Cooling conditions	uncontrolled

#### Other data:

##### Processing / machinability

Soft annealed	4 – 5
Work-hardened	3
Heat-treated	-
Dimensional stability	1
<b>Erosion</b>	1

##### Surface treatment

Anodising - (protective anodisation)	1
Special anodising quality (EQ) <sup>EQ</sup>	1
Anodising - decorative	2
Painting / coating	1
Polishing	1 – 2

##### Welding

		Filler metal
Gas	2	SG-Al 99,5 SG-Al 99,5 Ti
WIG	2	
MIG	2 – 3	
Resistance welding	4	

##### Solder

Brazing with flux	1
Brazing without flux	1
Abrasion soldering	1
Soft soldering with flux	1

#### Legend:

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

Hardening	
Solution annealing	-
Quenching	-
Natural ageing treatment	-
Artificial ageing treatment	-

##### Corrosion resistance

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

##### Metal forming

Cold forming		Delivery condition
Bending	1	
Pressure forming	1	
Deep drawing (condition-based)	1	H14
Upsetting (condition-based)	1	H12
Impact extrusion	1	
Hot forming		
Drop forging	1	
Extrusion moulding	1	
Hammer forging	-	

Suitable for food industry according to DIN EN 602	yes
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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.