

# Datenblatt | Data sheet

## Aluminium alloy 7A03

These aluminum balls have very good corrosion and wear resistance and light weight. Excellent surface finish. The alloy is heat treated and has the best mechanical properties among aluminum alloys. The balls can be supplied in passivated condition.

### Field of application

Ball bearings, valves. Sectors: aerospace, military and welding.

### Corrosion resistance

Compared to other alloys, this one has a slightly higher corrosion resistance. However, in aggressive environments it may be susceptible to pitting and stress corrosion.

### Material

Name	Technical Name	Available thermal treatment
7A03	Alloy Al-Zn	T6

### Chemical Composition in %

Si	Fe	Mn	Cr	Cu	Ti	Al	Mg	Zn	Other (each)	Other. (total)
<= 0,20	<= 0,20	<= 0,10	<= 0,05	1,80 – 2,40	0,02 – 0,08	ca. 90	1,20 – 1,60	6,00 – 7,00	<= 0,05	<= 0,10

### Physical / mechanical / thermal / electrical / magnetical characteristics

Characteristic	Symbol	ME	Typ	Anm.	Werte
Density	$\delta$	g/cm <sup>3</sup>	Physikalisch	Umgebungstemp.	2,81
Modulus of elasticity	E	GPa	Mechanisch		71
Spezific temperature	C	J/kg*K	Thermisch	Umgebungstemp.	888
Linear coefficient of thermal expansion	$\alpha$	10 <sup>-6</sup> /°C	Thermisch	( $\Delta T = 0 - 100$ °C)	23,9
Thermal conductivity	$\lambda$	W/(m*K)	Thermisch	Umgebungstemp.	156,0
Electrical resistivity	P	$\Omega$ *m*10 <sup>-9</sup>	Elektrisch	-	45
Relative magnetic permeability	$\mu$	-	Magnetisch	Paramagnetisch	1,004

### Technical characteristics

Characteristic	Type	Unit	Type	Unit	Value
Hardness	Mechanical	HV	160 - 180	-	-
Break load in traction	Mechanical	MPa	450 - 550	psi * 10 <sup>3</sup>	66 - 79
Operating temperature	Thermal	°C	-196 - 200	°F	-320,8 - 392

### Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,000 – 150,000	3/64 - 6	G 100 / 200 / 500 / 1000

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