



Magnesium Elektron

SERVICE & INNOVATION IN MAGNESIUM

Elektron ZA

Datasheet : 462

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Elektron ZA

ELEKTRON ZA is the Magnesium Zirconium alloy with the highest vibration damping index.

APPLICATIONS

Vibration tables, machine bases, casings for missile guidance systems and recording equipment.

CHEMICAL COMPOSITION

Zirconium	0.3–0.8%
Magnesium	Balance

TYPICAL MECHANICAL PROPERTIES

0.2% Proof stress	48 MPa
Ultimate tensile strength	170 MPa
Shear stress	55 MPa
Elongation	19%
Shear value	55 MPa

MINIMUM SPECIFICATION TENSILE PROPERTIES

U.S.A. Specification MIL-M-45207

0.2% Proof stress	41 MPa
Ultimate tensile strength	165 MPa
Elongation	14%

PHYSICAL PROPERTIES

Specific gravity	1.75
Coefficient of thermal expansion	$26.8 \times 10^{-6} \text{K}^{-1}$
Thermal conductivity	$120 \text{ Wm}^{-1}\text{K}^{-1}$
Specific heat	$1040 \text{ Jkg}^{-1}\text{K}^{-1}$
Electrical resistivity	57 nΩm
Modulus of elasticity	$44.1 \times 10^3 \text{ MPa}$
Pattern maker's shrinkage	1.6%
Melting range	649–650°C

DAMPING INDEX

The specific damping capacity is measured at a stress of 0.1 times 0.2% proof stress.

ELEKTRON ZA	60.0
ELEKTRON ZRE1	4.5
ELEKTRON RZ5	1.0
ELEKTRON MSR-B	0.4
ELEKTRON AZ92	0.27
ELEKTRON EQ21	0.22
ELEKTRON ZC63	0.21
ELEKTRON AZ91	0.2
ELEKTRON WE54	0.17
ELEKTRON WE43	0.09

Manganese Copper Alloys	20–40
Grey Cast Iron	10.0
Free Cutting Brass	0.6
Aluminium Alloy 1100	0.3
Aluminium Alloy 2011	0.25
Most aluminium Alloys	0.2 or less

EQUIVALENT SPECIFICATION

British	ZA	
American	KIA	ASTM B80, B403 MIL-M-45207



Certificate No. FM12677