VDM Metals

A company of ACERINOX

VDM® Aeterna® 3831

CuZn37Mn3Al2Si

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VDM® Aeterna® 3831 is a lead-free brass alloy of CW713R EN Material Nomenclature Group.
VDM® Aeterna® alloys are generally used on sliding applications. Because of these good sliding properties, the alloy is increasingly applied in the area of axial piston pumps.

VDM® Aeterna® 3831 alloy is characterized by the following features:

- good sliding properties
- high strength and high hardness
- high wear resistance
- good resistance to aggressive media / oils
- very good machinability

Nomenclature

Standardization	General Material Designation
D	VDM® Aeterna® 3831
EN Material-Nr.:	CW713R lead-free
Description	CuZn37Mn3Al2Si

Table 1 - Nomenclature

Chemical Composition

	Cu	Zn	Pb	Fe	Mn	Ni	Al	Si	Sn	Other
Min.	57,0	Rem.	-	-	1,3	-	1,3	0,3	-	-
Max.	59,0	Rem.	< 0,1	0,8	3,0	1,1	2,0	1,5	0,5	0,3

Table 2 - Chemical composition, (wt. %)

Physical Properties

Density	Melting range
8,1 g/cm³	880 - 890° C

Temperature	Heat conductivity	Electrical conductivity	Young's modulus	Coefficient of thermal expansion
°C	$\frac{W}{m \cdot K}$	$\frac{MS}{m}$	$\frac{kN}{mm^2}$	$\frac{10^{-6}}{K}$
20	76	10	100	19,5

Table 3 - Typical physical properties of VDM® Aeterna® 3831 alloy

Mechanical Properties

Condition	Dimention	Yeld strength $R_{p\ 0,2}$	Tensile strength R_m	Elongation A5	Brinell-Hardness HB 2,5/62,5
	[mm]	[MPa]	[MPa]	[%]	
R540	Ø 15 - Ø 70	230 - 270	540 - 580	12 - 20	140 - 190

Table 4 - Typical mechanical properties of VDM® Aeterna® 3831 alloy

Applications

Typical areas of application of lead-free VDM® Aeterna® 3831 alloy are:

- Sliding application in general
    - Sliding bearings
    - Synchronizer rings
- Axial piston pumps:
    - Distribution plates
    - Bearing bushes
    - Holding segments

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