

VDM® Aeterna® VL22 3830
CuZn37Mn3Al2PbSi

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VDM® Aeterna® VL22 is a 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.

The following features characterize VDM® Aeterna® VL22 3830 alloy:

- 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® VL22 3830
EN Material-Nr.:	CW713R
Description	CuZn37Mn3Al2PbSi

Table 1 - Nomenclature

Chemical Composition

	Cu	Zn	Pb	Fe	Mn	Ni	Al	Si	Sn	Other
Min.	57,0	Rem.	0,2	-	1,3	-	1,3	0,3	-	-
Max.	59,0	Rem.	0,8	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/cm ³	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® VL22 3830 alloy

Mechanical Properties

Condition	Dimension	Yield strength	Tensile strength	Elongation	Brinell-Hardness
	[mm]	R _{p 0,2} [MPa]	R _m [MPa]	A5 [%]	HB 2,5/62,5
R590	< Ø 50	270	590	14	150 - 180
R540	Ø 15 - Ø 70	240	540	18	140 - 170
R540	Ø 70 - Ø 100	230	540	12	140 - 170
forged H140	-	(230)	(510)	(12)	> 130

Table 4 - Typical mechanical properties of VDM® Aeterna® VL22 alloy

Application

Typical areas of application of VDM® Aeterna® VL22 3830 alloy are:

- Sliding application in general
 - Sliding bearings
 - Synchronizer rings

- Axial piston pumps:
 - Distribution plates
 - Bearing bushes
 - Holding segments

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