VDM Metals

A company of ACERINOX

VDM® Aeterna® 3806

CuZn38Mn2NiSi

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VDM® Aeterna® 3806 is a special lead-free brass alloy, based on the well-known and proven alloy of VDM® Aeterna® HLS 3805. This lead-free alloy is suitable for sliding and high cavitation applications.

This lead-free alloy is characterized by:

- very good running and sliding properties
- high resistance to cavitation
- high wear resistance
- high fatigue strength
- high load capacity
- good machinability

Nomenclature

Standardization	General Material Designation
D	VDM® Aeterna® 3806
EN Material-Nr.:	Special lead-free alloy
Description	CuZn38Mn2NiSi

Table 1 - Nomenclature

Chemical Composition

		Cu	Zn	Pb	Fe	Mn	Ni	Al	Si	Sn	Other
Mass	Min.	55,5	Rest	-	-	1,8	1,5	-	0,5	-	
percentage	Max.	58,5	Rest	< 0,1	0,3	2,8	2,6	0,2	1,8	0,5	0,5

Table 2 - Chemical composition (wt.%)

Physikalische Eigenschaften

Density	Melting range
8,3 g/cm³	850 - 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	80	13	117	19,5

Table 3 - Typical physical properties of VDM® Aeterna® 3806 alloy

Mechanical Properties

Condition	Dimension	Yield stress	Tensile strength	Elongation	Brinell-Hardness
		$R_{p\ 0,2}$	R_m	A5	HB 2,5/62,5
	[mm]	[MPa]	[MPa]	[%]	
pressed	< Ø 60	300 - 370	450 - 530	10 - 20	125 - 155

Table 4 - Typical mechanical properties of VDM® Aeterna® 3806 alloy

Applications

Typical areas of application for VDM® Aeterna® 3806 are:

- Sliding applications
  - Bearings
  - Sliding shoes

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

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