

# **VDM® Aeterna® 3741**

## **CuZn35Mn2Si**

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VDM® Aeterna® 3741 is a special brass lead-free alloy based on the well-established VDM® Aeterna® HLZ 3740 alloy. This lead-free alloy is increasingly being used in axial piston pumps, as it is well established in this area due to its sliding properties and high strength.

VDM® Aeterna® 3741 is characterized by:

- good sliding properties
- high wear resistance
- high resilience
- high fatigue strength
- high cavitation resistance
- good machinability

Nomenclature

Standardization	General Material Designation
D	VDM® Aeterna® 3741
EN Material-Nr.:	Special lead-free alloy
Description	CuZn35Mn2Si

Table 1 - Nomenclature

# Chemical Composition

		Cu	Zn	Pb	Fe	Mn	Ni	Al	Si	Sn	Other
Mass- percentage	Min.	60,0	Rem.	-	-	1,8	-	-	0,5	-	-
	Max.	63,5	Rem.	< 0,1	0,5	2,8	0,5	0,5	1,8	0,8	0,5

Table 2 - Chemical composition (wt. %)

# Physical Properties

Density	Melting range
8,3 g/cm <sup>3</sup>	820 - 880 °C

Temperatur	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® 3741 alloy

# Mechanical Properties

Condition	Dimension	Yield strength R <sub>p 0,2</sub>	Tensile strength R <sub>m</sub>	Elongation A5	Brinell-Hardness HB 2,5/62,5
	[mm]	[MPa]	[MPa]	[%]	min.
R490	< Ø 10	310 - 480	490 - 530	10 - 20	130

Table 4 - Typical mechanical properties of VDM® Aeterna® 3741 alloy

# Applications

Characterization and typical areas of application of lead-free VDM® Aeterna® 3741:

- The material is characterized by its good cavitation resistance and very good machinability
- Synchronizer rings
- Axial piston pumps:
  - Bearing bushes
  - Holding segments

# Imprint

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