

VDM® Aeterna® HLZ 3740
CuZn35Mn2Si

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VDM® Aeterna® HLZ 3740 is a special brass alloy that is particularly suitable for applications with high cavitation. This 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® HLZ 3740 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® HLZ 3740 |
| EN Material-Nr.: | special alloy |
| Description | CuZn35Mn2Si |

Table 1 - Nomenclature

Chemical Composition

| | | Cu | Zn | Pb | Fe | Mn | Ni | Al | Si | Sn | Other |
|---------------------|------|------|------|-----|-----|-----|-----|-----|-----|------|-------|
| Mass- percentage | Min. | 60,0 | Rem. | 0,1 | - | 1,8 | - | - | 0,5 | - | - |
| | Max. | 63,5 | Rem. | 0,8 | 0,5 | 2,8 | 0,5 | 0,5 | 1,8 | 0,08 | 0,5 |

Table 2 - Chemical composition (wt. %)

Physical Properties

| Density | Melting range |
|-----------------------|---------------|
| 8,3 g/cm ³ | 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® HLZ 3740 alloy

Mechanical Properties

| Condition | Dimension | Yield strength R _{p 0,2} | Tensile strength R _m | Elongation A ₅ | Brinell-Hardness HB 2,5/62,5 |
|-----------|-----------|--------------------------------------|------------------------------------|------------------------------|---------------------------------|
| | [mm] | [MPa] | [MPa] | [%] | min. |
| R490 | Ø 10-60 | 310 | 490 | 10 | 135 |
| R560 | Ø 10-30 | 400 | 560 | 6 | 150 |

Table 4 - Typical mechanical properties of VDM® Aeterna® HLZ 3740 alloy

Applications

Characterization and typical areas of application of VDM® Aeterna® HLZ 3740:

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

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Disclaimer

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