

VDM® Aeterna® 3838
CuZn40Al2Mn2Si

VDM® Aeterna® 3838

CuZn38Mn2NiSi

VDM® Aeterna® 3838 is a special brass alloy, mainly used in sliding applications, e.g. in axial bearings and axial piston pumps.

VDM® Aeterna® 3838 is characterized by:

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

Nomenclature

| Standardization | General Material Designation |
|------------------|------------------------------|
| D | VDM® Aeterna® 3838 |
| EN Material-Nr.: | Special alloy |
| Description | CuZn40Al2Mn2Si |

Table 1 - Nomenclature

Chemical Composition

| | | Cu | Zn | Pb | Fe | Mn | Ni | Al | Si | Sn | Other |
|-----------------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-------|
| Mass percentage | Min. | 56,0 | Rem. | - | - | 2,2 | - | 1,0 | 0,5 | - | - |
| | Max. | 59,0 | Rem. | 0,6 | 0,5 | 2,8 | 0,5 | 2,0 | 1,5 | 0,5 | 0,5 |

Table 2 - Chemical composition (wt %)

Physical Properties

| Density | Melting range |
|-----------------------|---------------|
| 8,2 g/cm ³ | 880 - 910 °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 | 60 | 9 | 100 | 19 |

Table 3 - Typical physical properties of VDM® Aeterna® 3838

Mechanical Properties

| Condition | Sample alignment | Yield strength R_{p 0,2} [MPa] | Tensile strength R_m [MPa] | Elongation A5 [%] | Brinell-Hardness HB 2,5/62,5 |
|-----------|------------------|---|---|--------------------------------|--|
| Forging | Long. | 280 | 590 | 12 | 150-185 |
| | Cross | 250 | 530 | 8 | 150-185 |

Table 4 - Typical physical properties of VDM® Aeterna® 3838

Applications

Typical areas of application for VDM® Aeterna® 3838 special alloy are:

- in the cavitation area, e.g. in the impellers of centrifugal pumps, water turbines or propellers
- In the area of sliding applications, e.g. plain bearings
- Axial piston pumps:
 - Distribution plates
 - Bearing bushes
 - Holding Segments

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Disclaimer

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