

## PEAK Werkstoff GmbH

# DISPAL A250

DISPAL A250 is a dispersion strengthened high performance aluminium alloy, processed via powder metallurgical routes. The alloy doesn't need any heat treatment for strengthening or setting its unique properties. The most important ones are high strength levels (UTS, YS, fatigue) at elevated service temperatures and wear resistance.

### Composition :

|           |                   |
|-----------|-------------------|
| Silicon   | 18,5 - 21,5 wt.-% |
| Iron      | 4,6 - 5,4 wt.-%   |
| Nickel    | 1,8 - 2,2 wt.-%   |
| Aluminium | balance           |

### Physical properties:

| Density<br>g/cm <sup>3</sup> | Coeff. of therm. expansion<br>10 <sup>-6</sup> /K | Electrical conductivity<br>% IACS | Hardness (Brinell) |        |        |        |
|------------------------------|---|-----------------------------------|--------------------|--------|--------|--------|
|                              |   |                                   | 21 °C              | 150 °C | 250 °C | 350 °C |
| 2,78                         | 16  | 21                                | 135                | 105    | 75     | 45     |

### Mechanical properties:

| Property                          | Unit | Temperature |        |        |        |
|-----------------------------------|------|-------------|--------|--------|--------|
|                                   |      | 21 °C       | 150 °C | 250 °C | 350 °C |
| Tensile strength, R <sub>m</sub>  | MPa  | 410±20      | 330±20 | 250±20 | 145±20 |
| Yield strength, R <sub>p0,2</sub> | MPa  | 290         | 255    | 210    | 150    |
| Elongation, A <sub>5</sub>        | %    | 2,0         | 3,2    | 5,3    | 7,4    |
| Young's modulus, E                | GPa  | 98          | 90     | 79     | 70     |
| Fatigue strength, σ <sub>RB</sub> | MPa  | 122         | 117    | 107    | 94     |

DISPAL A250 is a dispersion strengthened alloy - no heat treatment is necessary to reach the above mentioned properties.