



## 1.3981

Description - Alloy K / 1.3981 (Kovar) is a nickel-iron-cobalt alloy.

Special properties - Very low coefficient of expansion from -100° to 450 °C.

Suitable welding filler materials - 1.3981.

Application - High-power transmitting valves, transistor leads and headers, integrated-circuit lead frames.

### Chemical Composition in %

| C     | Si    | Mn   | Co        | Ni        | Fe   |
|-------|-------|------|-----------|-----------|------|
| ≤0.05 | ≤0.03 | ≤0.5 | 17.0-18.0 | 28.0-30.0 | Rest |

### Standards

|                |           |
|----------------|-----------|
| Material No.   | 1.3981    |
| EN Designation | NiCo29-18 |
| UNS            | K94610    |
| Alloy          | K         |

### Mechanical Properties 20 °C

|                                           |      |
|-------------------------------------------|------|
| 0,2% Yield strength Rp, N/mm <sup>2</sup> | ≥370 |
| Tensile strength Rm, N/mm <sup>2</sup>    | ≥530 |
| Elongation A5, %                          | ≥30  |
| Modulus of elasticity, kN/mm <sup>2</sup> | 160  |

### Physical Properties 20 °C

|                                              |       |
|----------------------------------------------|-------|
| Density, g/cm <sup>3</sup>                   | 8.3   |
| Specific heat capacity, J/kg K               | 500   |
| Thermal conductivity, W/m K                  | 17.5  |
| Electrical resistivity, Ω mm <sup>2</sup> /m | 0.049 |