



Preliminary datasheet

# ULTRAVAC® 44 V6

STRIP MATERIAL

## Composition

44% Ni - 3% Mo - Fe Balance

## Main properties

Very low coercivity of 3.5 A/m

High electrical resistivity of 0.8  $\mu\Omega\text{m}$ 

## Applications

Sensitive sensor applications

Low loss motors, especially for high frequencies

## Magnetic properties (typical values)

Coercivity	$H_C$	3.5 A/m
Saturation polarisation	$J_S$	1.35 T
Maximum permeability	$\mu_{\max}$	100,000
Curie temperature	$T_C$	300 °C

## Static virgin curve (typical values)

Magnetic field strength	H (A/m)	3	10	30	100	300	1000	3000
Induction	B (T)	0.38	0.77	0.89	0.99	1.11	1.28	1.33

## Iron losses at B = 1 T (typical values)

Strip thickness	d (mm)	0.1	0.1	0.2	0.2	0.35	0.35
Frequency	f (Hz)	50	1000	50	1000	50	1000
Loss	pFe (W/kg)	0.19	8.5	0.2	18.5	0.26	44

## Physical properties (typical values)

Density	$\rho$	8.25 g/cm <sup>3</sup>
Specific electrical resistivity	$\rho_{\text{el}}$	0.8 $\mu\Omega\text{m}$
Specific heat capacity	$c_p$	0.46 J/(gK) (20...200 °C)
Thermal conductivity	$\lambda$	13.7 W/(mK) (20...200 °C)
Thermal expansion coefficient	$\alpha$	$6.2 \cdot 10^{-6}$ 1/K (20...200 °C)

## Forms of supply and conditions

Strip material	0.1 - 1 mm
Delivery condition	- cold rolled with optional coating - soft bendable

## Important note: To achieve the typical values a final magnetic annealing is necessary

For optimum magnetic properties: 5h / 1150°C, dry hydrogen atmosphere recommended