

Material Data sheet

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Cold Rolled Nickel Alloy Alloy Mu W.-Nr. 2.4545**1. Application examples**

With the highest technically achievable permeability and a very low coercive field strength, the material 2.4545 is ideal for shielding against magnetic interference fields and for toroidal cores in instrument transformers and relays.

Further application examples:

general components in electrical engineering and electronics where a low coercivity is required.

The material is not suitable as a spring material.

2. Material codes

German Norm: 2.4545 Alloy Mu (DIN 17745), NiFe15Mo

AISI:

UNS: N02201

English Norm: BS NA 12

3. Alloy Composition *

Ni: ca. 80%

C: <0,02%

Fe: balance

Mn: ca. 0,5%

Si: ca. 0,3%

Mo: ca. 4,9%

S: max. 0,005%

* the exact composition of each batch can be documented by a material certificate 2.2 or 3.1 according to DIN EN 10 204.

4. Delivery condition

Condition: soft annealed

Surface: bright

Ultimate tensile strength: ca. 650 N/mm²

Further mechanical data: see chapter 7 and 8.

5. Sizes

thicknesses: 0,10 - 0,65mm

raw material width: depending on the thicknesses (ca.200 - ca. 320mm)

edges: cut

Lengths: individual lengths from 5 to 10 000mm or as coil

The following sizes are available from stock (without obligation):

thickness	Condition	Available width
0,10	annealed	ca. 340mm
0,20	annealed	ca. 340mm
0,65	annealed	ca. 305mm

without obligation, Issue: July 2023

6. Tolerances

thickness tolerance: +/- 10 % of the thickness
width tolerance: nach DIN EN
straightness: normal
flatness: wave height max. 1,0 mm

7. Further mechanical data

Yield strength Rp0,2 : no data available
Elongation A80: no data available

The Alloy 2.4545 = Alloy Mu should not be used for springs or mechanically stressed components.

The highest application temperature is around 150° Celsius. Please note that Young's modulus values drop as temperature increases.

8. Physical properties

Density: 8,70 g/cm³
Thermal conductivity: 32 W/(m °C) depending on the temperature
Heat capacity: J/(kg °C) medium value at 50 – 100 °C
Thermal expansion: 12 x 10⁻⁶ (between 20 - 100 °C)
E-Modul: 200 kN/mm²
Electric resistance: 55 µOhm x cm depending on the temperature
saturation flux density : 0,8 T
Relative permeability µr: 80 000 - 480 000 (annealed, at 50 Hz)
Curie-Temperature: 410 °Celsius

9. Blanking

We recommend a punch-to-die clearance of 4-10 % of the strip thickness.
The corner radius should be at least 0.25 mm and the punching die should be at least twice the strip thickness.
The pieces should then be tumbled to receive a good edge roundness.

10. Laser cutting

This alloy can be laser cut by solid state lasers.

11. Photo etching

This alloy is very easy to etch.

12. Bending

The material 2.4545 can be easily bent or deep-drawn in the annealed condition. Intermediate annealing should be carried out in the case of strong deformations. Final annealing is required to set the optimum magnetic properties, during which the temperature, time and also the cooling conditions must be strictly adhered to.

13. Flat grinding

Since the material 2.4545 can be magnetized, it can be clamped on magnetic clamping plates of surface grinding machines.

Due to the small tape thickness, however, this is not recommended.

14. Welding

This alloy can be welded easily.

15. Corrosion resistance

The alloy 2.4545 has a good corrosion resistance at normal atmosphere.

Important Annotation

The specifications which are given in this technical information sheet about the condition and application of the alloys are only for reference and are no confirmation about certain performances and characteristics.

The information correspond to our own experiences and experiences of our suppliers.

We can not guarantee for the results during processing and utilisation.