VACODYM 902 TP – HEAVY RARE EARTH FREE PERMANENT MAGNETS

Next-Generation Permanent Magnets:
Sustainable, Powerful, and Resource-Efficient

Global reliance on critical raw materials – especially on heavy rare earths such as Terbium (Tb) and Dysprosium (Dy) – poses increasing challenges for key industries such as aerospace, industrial automation, electromobility, and other mission critical applications. Volatile raw material costs and market uncertainty are placing considerable pressure on global supply chains. This underscores the critical importance of developing alternative supply chains and establishing domestic, bespoke processes – from metallization to magnet production. Additionally, there is a growing need to reduce reliance on heavy rare earth elements wherever feasible.

VACODYM 902 TP

With VACODYM 902 TP®, we present our latest high-performance Neodymium-Iron-Boron (NdFeB) alloy that is entirely free of heavy rare earths (HRE) – without compromising magnetic performance.

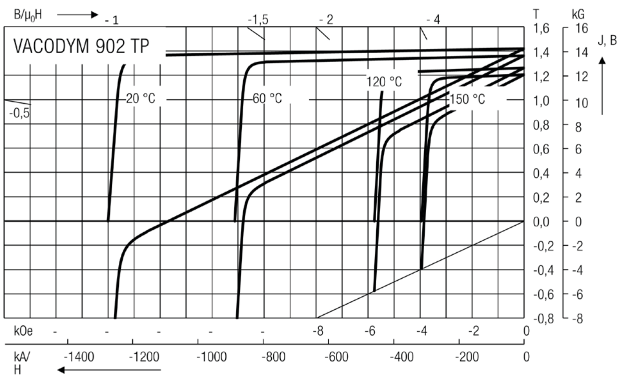
This alloy is part of our proven VACODYM 90X family, a series of NdFeB grades optimized for reduced Terbium and Dysprosium content and excellent magnetic performance. Among them, VACODYM 902 TP stands out as it is completely HRE-free and offers maximum flexibility and highest resilience regarding raw material sourcing.

At room temperature, VACODYM 902 TP reaches a remanence of ≥ 1.40 Tesla and a coercivity of ≥ 1,190 kA/m, making it the material of choice for high-performance applications that also demand maximum sourcing flexibility and long-term security.

A key advantage: 100 % license-free, established and resilient supply chain from mine to magnet. This gives our customers a reliable, geopolitically independent alternative to existing HRE-based solutions – a vital step toward resilient supply chains and a sustainable product strategy.

Why choose VACODYM 902 TP?

- Ideal for use in high-efficiency electric motors and generators (e.g., in electric vehicles, robotics, automation, renewable energy)
- Future-proof sustainability – no heavy rare earth elements added
- Supply chain resilience – 100 % production in the western world



Typical demagnetization curves B(H) and J(H) at different temperatures

What's next:

VAC continues to pioneer next-generation HRE-free NdFeB magnets. Development is underway to achieve even higher performance – with remanence up to 1.45 T and coercivity of 1,280 kA/m – still without any heavy rare earth content.

Our experts are happy to provide more information about these innovative materials and our product range. Visit our contact page at www.vacuumschmelze.com to get in touch with us.

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ADVANCED MAGNETIC SOLUTIONS