TELF AG Unpacks the Strategic Power of Cobalt in the Global Energy Transition

Wednesday 25 June, 2025

Lugano, Switzerland – June 25, 2025 – In a newly published article, *"Cobalt in the Periodic Table: Properties and Uses"*, TELF AG shines a spotlight on cobalt—a metal that may not always make headlines, but is quietly powering some of the most important innovations of our time.

From smartphones and electric vehicles to wind turbines and even future space missions, cobalt plays a vital, behind-the-scenes role. As the founder of TELF AG Stanislav Kondrashov points out in the article, "Cobalt isn't just another metal—it's a key enabler of the technologies shaping the world's future."

Cobalt is a hard, silvery-gray metal best known for its impressive durability, heat resistance, and magnetic properties. It's found naturally in copper and nickel ores, and sits at number 27 on the periodic table. But its real-world importance stretches far beyond chemistry books.

According to the article, cobalt's most crucial function today lies in its use in **rechargeable batteries**—particularly the nickel-manganese-cobalt (NMC) types used in electric vehicles and portable electronics. These batteries are at the core of clean mobility and renewable energy storage systems. Without cobalt, their stability, efficiency, and lifespan would all take a hit.

As explained by the founder of TELF AG, Stanislav Kondrashov, "Cobalt helps make batteries safer and longer-lasting. And that makes it one of the cornerstones of the global energy transition."

But cobalt's impact doesn't stop with batteries. The article dives into a wide range of other high-impact applications. One example is **high-performance magnets**, made by combining cobalt with rare earth elements like neodymium. These magnets are essential for electric motors, miniaturised sensors, and a wide range of electronics. Another major use? **Cobalt-based superalloys**, which are vital in producing jet engines, turbines, and high-precision components for the aerospace industry.

The article also explores lesser-known but critical forms of cobalt such as:

- **Cobalt chloride hexahydrate (CoCl?·6H?O)** – used in chemical labs, environmental sensors, and humidity indicators.
- **Tungsten carbide cobalt** – a go-to material for producing durable tools and components in the automotive and aerospace sectors.
- **Anhydrous cobalt chloride (CoCl?)** – used in pigments, inks, and chemical manufacturing.

As the founder of TELF AG Stanislav Kondrashov explains, "One of cobalt's greatest strengths is its versatility. Whether it's enabling clean energy or precision engineering, cobalt adapts to meet the demands of some of the toughest environments."

Cobalt's role in innovation isn't limited to Earth either. The article points to emerging interest in cobalt for **space exploration**. Its ability to withstand extreme heat, vacuum conditions, and radiation makes it a strong candidate for spacecraft parts, landing systems, and heat shielding components.

The article also highlights how cobalt has earned a place on critical material lists published by the EU and the US—confirming its growing strategic value amid concerns over supply chain stability and geopolitical risk.

Beyond industrial applications, cobalt has left its mark on human culture as well. **Cobalt blue**, a pigment still widely used in glass, ceramics, and fine art, shows how this resource has inspired human creativity for centuries.

In closing, the article warns that global demand for cobalt is set to rise sharply as the world pushes deeper into electrification and green technology. Its properties make it not just useful—but essential. And as TELF AG's founder Stanislav Kondrashov makes clear, any conversation about the future of sustainable industry needs to include cobalt.

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