Revolutionising data centre cooling with FUCHS LUBRICANTS

**23 January 2025:** The global data centre industry is experiencing unprecedented growth, fuelled by an insatiable demand for advanced computing power. Market reports predict the industry will grow from $244 billion in 2020 to $519 billion by 2030 at a compound annual growth rate (CAGR) of 10%. [[1](https://www.alliedmarketresearch.com/data-center-market-A13117)] This expansion is driven by transformative technologies like 5G communications, artificial intelligence (AI), and crypto mining, which demand higher performance from processors and servers.

However, with greater performance comes the challenge of effective cooling. Traditional air-cooling systems, reliant on space, energy, and water, are no longer sustainable for hyperscale and colocation data centres. “Immersion cooling has emerged as a groundbreaking solution for managing the escalating cooling demands of today’s powerful processors and servers,” says **Jarryd Tate**, Technical Application Engineer at FUCHS LUBRICANTS SOUTH AFRICA, which is at the forefront of this transition, providing innovative cooling solutions tailored to meet the needs of the digital revolution.

Liquid cooling, long the ‘go-to’ solution for high-performance computing centres, is now becoming a mainstream solution for data centres. Among its forms, immersion cooling stands out as the most capable of handling future challenges. This technology submerges hardware components in specially engineered fluids, delivering unparalleled efficiency.

Single-phase immersion coolants are gaining traction due to their zero ozone depletion and global warming potential, alongside simpler designs that reduce operational complexity. Immersion cooling systems significantly lower energy consumption, reduce water usage, and require less maintenance, leading to a decrease in overall operating expenses. In addition, these systems improve uptime ratings, processor performance, server density, and overall power-usage effectiveness.

Beyond efficiency gains, immersion cooling offers considerable environmental benefits. It lowers a facility’s carbon footprint and energy usage while enabling waste heat capture and reuse. The design advantages are equally compelling: facilities can eliminate costly chillers, air handlers, and rack fans while minimising concerns about regional climate, dust, and air pollution. “Immersion cooling not only addresses the operational challenges of traditional systems but also aligns with global sustainability goals, making it an essential innovation for future-ready data centres,” stresses Jarryd.

Despite its advantages, some operators hesitate to adopt immersion cooling due to concerns about handling large volumes of fluids and potential disposal requirements. FUCHS addresses these challenges with its modular services for immersion coolant management. Leveraging decades of experience in chemical process management, FUCHS provides tailored solutions covering the full lifecycle of immersion coolants, from initial implementation to ongoing maintenance. This ensures that the benefits of immersion cooling are sustained over time.

FUCHS has been a trusted supplier of solutions for information technology and telecommunications for decades. Its advanced RENOLIN FECC (Fluids for Electronic Component Cooling) product line, formulated with synthetic base oils and powerful additives, is specifically designed to meet the needs of today’s data centres. RENOLIN FECC products deliver superior cooling performance, reliable dielectric properties, and high breakdown voltage, with zero global warming and ozone depletion potential. The range offers extended lifespans thanks to its thermal and oxidation stability, alongside compatibility with common electronic components.

Beyond the RENOLIN FECC line, FUCHS also provides a wide range of products designed specifically for data centres and crypto-mining facilities, including single-phase immersion coolants, direct-liquid-cooling fluids, electronics and systems cleaners, electrical connector greases, and refraction index matching optical gels.

As the data centre industry continues to grow rapidly, the demand for innovative cooling solutions has never been greater. “With its commitment to sustainability, innovation, and industry expertise, FUCHS is well-positioned to be a global leader in this niche lubricants sector. Our solutions empower data centres to operate more efficiently, sustainably, and profitably, ensuring they are futureproofed,” concludes Jarryd.

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**About FUCHS**
FUCHS develops, produces, and markets high-grade lubricants and related specialties for virtually all industries Founded in 1931 as a family business in Mannheim, FUCHS is now the world's largest independent supplier of innovative lubricant solutions, covering almost every industry and application. Today, the company’s 6 000 employees in over 50 countries still share the same goal: To keep the world moving both sustainably and efficiently.

To live up to this claim, we think in terms of perfection, not merely standards. When developing individual solutions, we enter into an intensive customer dialogue – acting as an experienced consultant, innovative problem solver and reliable team partner. The results we provide meet not only the highest technological requirements, but also help customers save on operating costs and emissions. Because at FUCHS, sustainability is not simply an empty phrase, but a mindset – and thus the basis and aspiration of all our business activity.

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