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Tritonex – an absolute game changer for all things hydrogen

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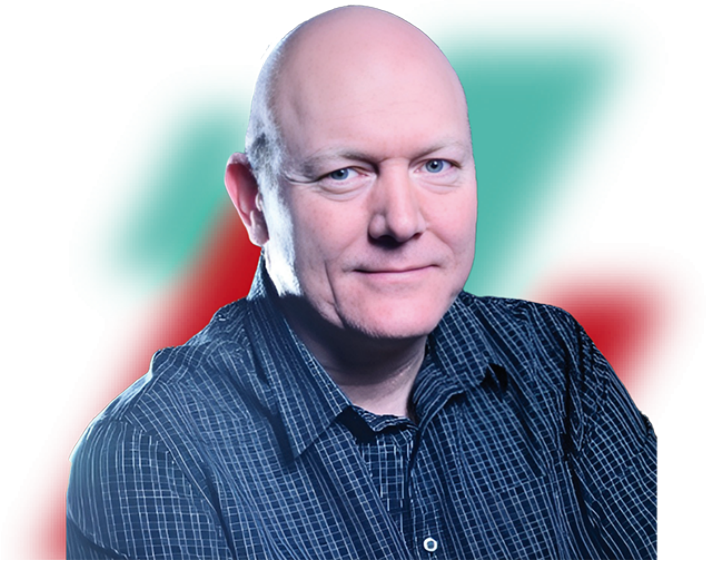

Henning Syversen
Chief Executive Officer
Triton Hydrogen

UK nano-technology company solves problem of hydrogen permeation

Hydrogen, often hailed as the fuel of the future, presents an enticing alternative to fossil fuels in the global pursuit of clean energy. With its high energy density and zero-emission potential, hydrogen has gained traction as a viable candidate for decarbonising various sectors, including transportation, industry, and power generation. However, despite its promise, the widespread adoption of hydrogen faces a number of formidable challenges, particularly in its distribution.

Hydrogen, the most abundant element in the universe, holds immense potential as a clean energy carrier. When burned, it produces only water vapor, making it an extremely clean fuel option. Furthermore, hydrogen can be produced through a variety of methods, including electrolysis powered by renewable energy sources, natural gas reforming with carbon capture and storage (CCS), and biomass gasification. This versatility in production methods lends itself to a wide range of applications.

However, hydrogen usage is not without its challenges. Its small molecular size makes it prone to leakage (permeation), which poses a challenge for transportation and storage. Conventional infrastructure often requires expensive adaptations to prevent permeation, whilst existing large-scale storage solutions, such as underground salt caverns, may not be practical as they only exist in certain geographic locations.

The permeation process can also cause embrittlement of the steel, eventually leading to product failure. It

also places pressure limitations on hydrogen gas due to exponentially higher losses at higher pressures.

These challenges often mean that hydrogen needs to be produced close to its point of use to reduce losses in storage and transit.

Linked to the above, another of the primary hurdles in hydrogen distribution lies in building the necessary specialist infrastructure. Unlike traditional fossil fuels, which have well-established transportation networks, hydrogen infrastructure is in its infancy. This includes the construction of pipelines, storage facilities, and refuelling stations. The costs associated with this infrastructure development are significant and require substantial investments.

To date, effective storage and distribution of hydrogen have been two of the main constraints on its development as a green fuel for decarbonisation of the economy.

However, a UK nano-technology company called Triton Hydrogen has developed a simple coating product which provides a quantum leap forward in the delivery of hydrogen as the green fuel of the future. Tritonex Barrier Coating System can be applied to new or existing infrastructure and forms an impermeable seal to the surface, preventing permeation and embrittlement. The coating can be applied to new products by OEMs or just as easily retrofitted to existing infrastructure to convert it for hydrogen usage, and it can be used for pipelines, storage, valves and event transport applications.

“We now need to change our mindset in the hydrogen industry to realise that we now can treat hydrogen gas as any other fuel, utilising buffer storage and long transport lines,” said Triton Hydrogen CEO Henning Syversen.

“The hydrogen industry has been trying to find a hydrogen barrier for 100 years without success. The Triton group put its best minds together on a five-year quest to find the solution.

“Tritonex overcomes the biggest hurdle of gas transport and storage, allowing for the development of cheap, safe and efficient fuels cells and heating infrastructure. Tritonex is the only solution in the world that fully complies to the ISO 17081:2014 hydrogen permeation standard.”

The company is now in talks with a number of hydrogen producers, distributors and users around the world to look at how the product can be incorporated into a range of different sectors including manufacturing, storage, distribution, transportation and energy generation.

While hydrogen holds immense promise as a clean energy carrier, distributing it at scale poses significant challenges – until now. The breakthrough development of the Tritonex coating could well lead to the widespread adoption of hydrogen as a clean energy source may become a reality, paving the way for a more sustainable future.

Triton Hydrogen is the creator of the Tritonex barrier coating system – a global phenomenon in preventing hydrogen leakage.
Tritonex is the only barrier coating product anywhere in the world that provides a scientifically tested containment solution – giving 100% surety.
For more information about the business, and how the team can help you take your product to market, please visit: https://triton-hydrogen.com If you would like to speak with Henning Syversen please email: henning@triton-hydrogen.com or message via LinkedIn at: https://www.linkedin.com/in/henning-syversen-80732b7a/

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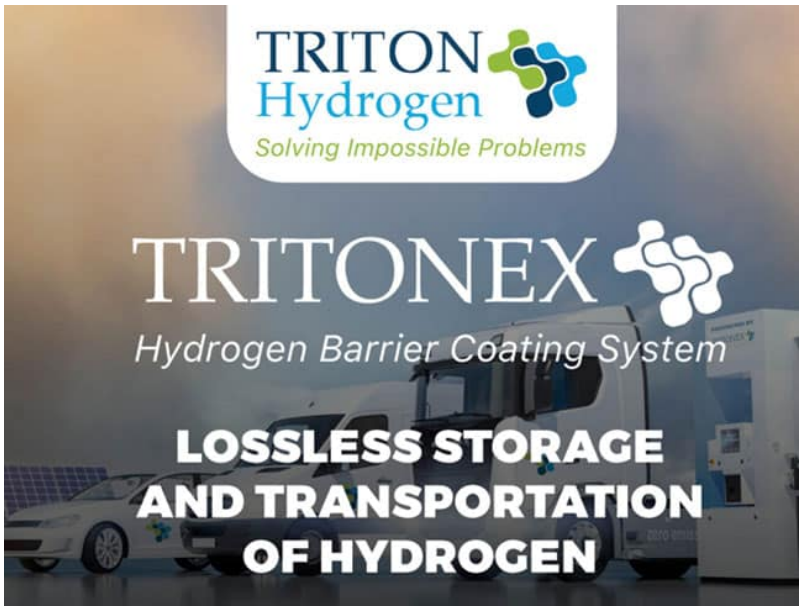

We have developed the answer to preventing hydrogen leakage in all materials. Tritonex is the only solution in world that fully complies to the ISO 17081:2014 hydrogen permeation standard
A MAJOR BREAKTHROUGH IN HYDROGEN CONTAINMENT We are the creators of the Tritonex barrier coating system – a global phenomenon in preventing hydrogen leakage. Tritonex is the only barrier coating product anywhere in the world that provides a scientifically tested containment solution – giving 100% isolation.

Proven Technology

	Tritonex is the only hydrogen barrier coating in the world with 100% leakage-proof results.
ISO	Tritonex is independently tested and approved to conform to ISO 17081:2014 at 0% permeation.
	Tritonex is the final and missing piece to allow storage and transport of hydrogen gas without leakage and embrittlement.

Market Impact

1,500%	H_2 production over the next decade is estimated to grow at over 1,500%.
	Tritonex will enable the gas market to grow even faster.
	Tritonex can be applied to existing pipelines and storage.
	Tritonex is environmentally friendly in all of its application phases and makes increased hydrogen production, transport and storage possible.