

QUADRISE: INTRODUCING A GREENER FUEL OPTION

Quadrise is the innovator and global licensor of disruptive technology that produces a synthetic, enhanced heavy fuel oil (HFO) called MSAR®. This HFO offers operational, economic and environmental benefits compared to bunker fuel oil, reducing OPEX and environmental footprints simply, quickly and efficiently.

MSAR® blending technology is installed in refineries by Quadrise at low cost to produce MSAR® fuel, which is an enhanced emulsion fuel for use in marine, power, industrial and upstream applications.

Our proven technology blends heavy residual oils with small amounts of specialist additives and water to create a highly stable, low-viscosity emulsion containing approximately 70wt% hydrocarbon (with no cat fines), as pre-atomised micron-sized droplets, dispersed in 30% water with <1% additives. Other than water content, MSAR® fuel properties are similar to RMG ISO8217.

As no expensive distillate cutters are needed, manufacturing costs for the refinery are lower than for fuel oil, with the fuel price discount being a function of the gas oil and fuel oil differential.

Typical savings for bunker consumers, on an energy equivalent basis, are circa 10%. For illustration, a vessel consuming 16,000 tons HFO annually would save \$400,000pa, assuming \$250/mt HFO.

The physical characteristics of pre-atomised, <10µm fuel droplets dispersed in water result in enhanced combustion performance and a significantly reduced environmental footprint versus conventional fuel oil. MSAR® burns like gas, with high carbon burnout resulting in fewer particulates and virtually no "black soot", reducing global warming and the waste disposal impacts. The fuel's water content reduces combustion temperatures and associated NOx generation by 20-50%.

Marine MSAR® was developed in collaboration with Maersk, engine manufacturers Wärtsilä and MAN Diesel & Turbo, AkzoNobel (now Nouryon) and classification societies such as Lloyd's Register. It builds on 60m tons of emulsion fuel use, with successful ocean-going vessel trials using modern MAN and Wärtsilä main engines completed. MSAR® is fully compatible with exhaust gas scrubbing and Tier 2/3 NOx control.

Vessel modifications for fuel handling are minor, can be implemented in service and typically pay back the investment in less than a year.

MSAR® is supplied to clients on a B2B basis, ensuring known provenance and no unwanted chemicals or blendstocks such as slurry oils. MSAR® also solves blending compatibility issues (the hydrocarbon droplets do not chemically interact), so that operational problems such as incompatibility and sedimentation do not occur.



A synthetic emulsion fuel oil with significant economic benefits and enhanced environmental performance compared to conventional bunkers.

High combustion efficiency results in lower fuel consumption, and less ash with no black carbon. NOx is reduced by 20-50%.

Fully compatible with SOx and Tier 3 NOx EGCS.

Formulated to meet end-user requirements, e.g. viscosity and sulphur. Similar to RMG ISO8217.

Supplied on a B2B basis with known provenance and no MSAR® blending compatibility issues.



info@quadrisefuels.com

For further information:

Email: info@quadrisefuels.com

quadrisefuels.com

