

Fuel 
Right
X

**RUN CLEAN.
RUN SMART.**



MARINE





-  Dissolve and Prevent Sludge Growth
-  Breakdown Suspended Particulate
-  Demulsify Water from Fuel
-  Clean Tanks, Fuel Strainers, Fuel Lines
Purifiers and Filters
-  Protect Fuel System from Corrosion
-  Reduce Emissions and Carbon build-up
-  Improve Fuel Lubricity
-  Extend Fuel Pump and Injector Life
-  Improve Lubricating Oil Life Expectancy
-  Optimize Fuel Economy
-  ULSD, MGO, IFO, VLSFO, Bio-Fuel Blends

Fuel Right X

ABOUT US

More than two decades ago, we set out to investigate the real mystery behind unwanted sludge and contamination in fuels and the link to corrosion. We began exploring alternative chemistries that would eliminate sludge while protecting the system from corrosion even in the presence of water and contamination.

Fuel Right technology extends benefits beyond the tank to filters and engine performance. Fuel resides in a complex ecosystem within the tank; eliminating contamination, water and corrosion in a fuel tank plays a significant role in how well a fuel will perform when it reaches your engine.

Fuel Right ensures that you are delivering ultra clean fuel to your engine improving performance and extending engine life.

Today, Fuel Right has representatives worldwide delivering ultra clean fuel technology to the fuel industry.

OUR EXPERIENCE

Premium Fuel Retail Programs
Commercial Wholesale Fuel Programs
Workboat, Commercial Marine, Ferries,
Super Yachts
Power Generation
Tank Cleaning Services



VALUE PROPOSITION

Fuel Right starts working immediately inside your tank. It begins by dissolving suspended sludge and pushing water to the bottom of your tank. It then continues to scrub away at the tank walls, fuel lines and filter housing and any other fuel system component.

Fuel Right then deposits a microscopic corrosion coating that protects the entire fuel system from corrosion related to the presence of sludge and water.

Once the tank is clean and protected from further contamination, Fuel Right continues to ensure clean fuel strainers and filters so your fuel system is never starved due to filter blocking from unwanted sludge contamination.

Fuel Right delivers ultra clean fuel to your engine ensuring clean injectors that operate efficiently with improved lubricity and enhanced fuel atomization. A clean fuel system results in better fuel economy and reduced emissions. Fuel Right also ensures less carbon build up in the cylinders.

From tank to engine, Fuel Right's value proposition extends beyond that of conventional additives and biocides.

Clean, Clear Fuel
Exceed ISO 4406
18/16/13
No water
No corrosion

Clean Filters
Improve Fuel Flow
Reduce Purifier Maintenance
Reduce Filter Demand

Optimize Injector Performance
Improve Injector Life
Optimize Fuel Economy
Reduce Emissions
Reduce Carbon Build-up



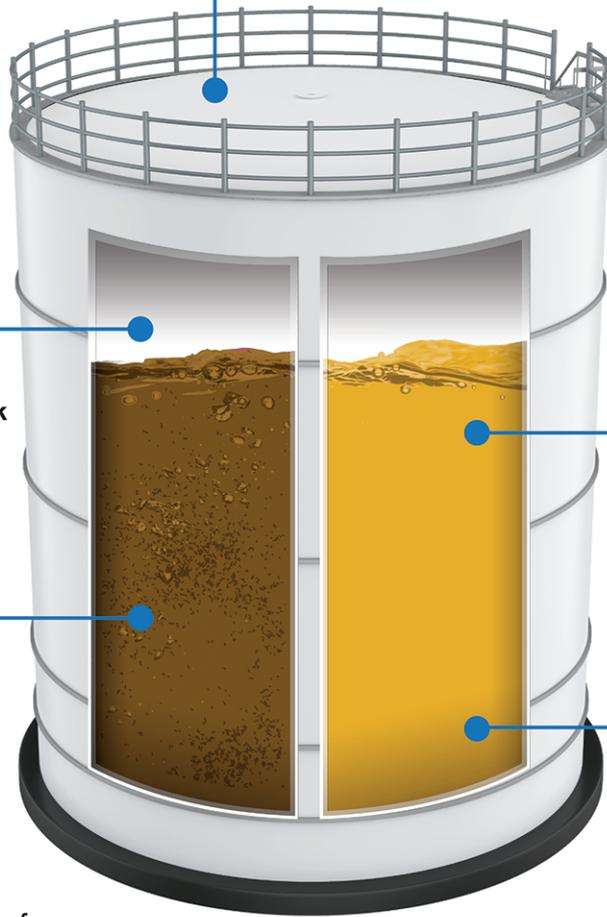
Oxidative Stability
Enhanced Long-Term
Storage

Clean Fuel
Water content < 150 ppm
Exceeds ISO 4406 (18/16/13)
WWFC Cleanliness Standard

Clean Tank
Walls and
Tank Floor

Dissolution of
Sludge and Sloughing

Corrosion Control
Microscopic Corrosion Coating



HOW IT WORKS



The samples above were contaminated with sludge and then the right sample was treated with a few drops of Fuel Right. The process of dissolving the suspended sludge is immediate. Within the first few days, the fuel is clarified and Fuel Right continues to dissolve any remaining sludge until it is fully dissolved.

Fuel Right deposits a microscopic corrosion coating inside the fuel tank, fuel lines, filters and strainers to protect the fuel system from corrosion even in the presence of contamination and water.

CLEAN FUEL TANKS & CORROSION PROTECTION

Fuel efficiency and performance begins with hygiene. Unless faced with catastrophic contamination issues, most do not pay attention to what is lurking in their fuel tanks.

Contamination and water is present in every tank and unless something is proactively being done to remediate it, you run the risk of filter plugging, injector failure and potential tank failure.

The presence of water and contaminants in your fuel affect the following in your fuel storage;

-  Decrease the effectiveness of corrosion inhibitors
-  Decrease overall fuel oxidative stability
-  Increase the fuel's total acid number
-  Reduce fuel lubricity
-  Suspend higher levels of particulates, increasing engine wear and reducing injector life
-  Reduce filter life
-  Disperse a higher concentration of water, resulting in catastrophic fuel pump and injector failure

Contaminated Diesel Fuel



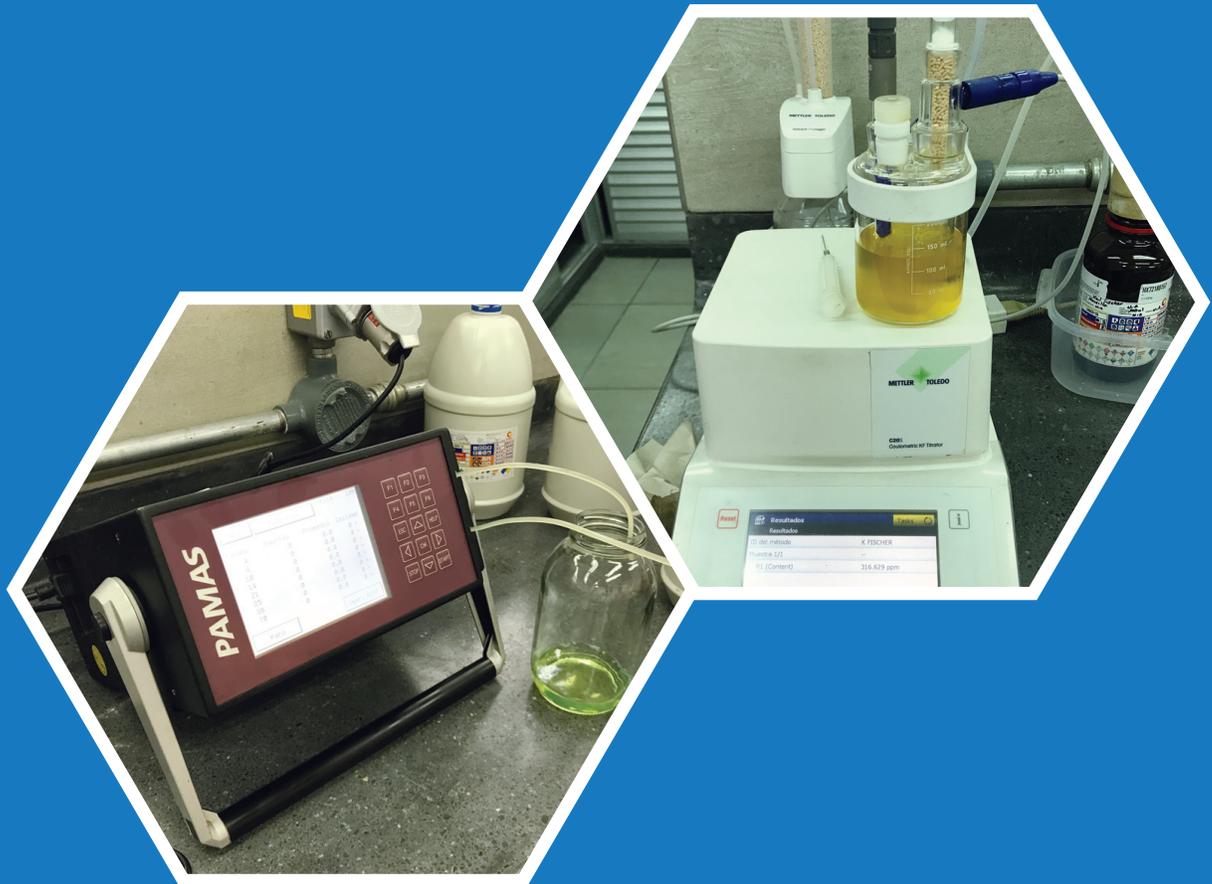
“Coffee Grounds” evidence of MIC



RESULTS (Before / after 1 year of continuous use of Fuel Right)



Tank interiors of a Superyacht located in Southeast Asia



ISO 4406 Worldwide Fuel Charter

ISO 4406 Worldwide Fuel Charter objective is to establish worldwide recommendations for quality fuel while taking into consideration customer requirements, vehicle performance and engine emission technologies. Particulate contamination plays a significant role in engine component wear. ISO 18/16/13 sets maximum allowable particulate count of 2500 particles/ml of fuel ranging from 4 μ , 6 μ and 14 μ . Maximum allowable water content is 200 ppm.

Fuel Right helps to clean fuel by breaking down particulate and pushing water out of the fuel. Some of our field testing has shown fuel cleaner by a factor of 8x better than the ISO 4406 standard and water content as low as 95 ppm. This equates to reducing particulate count from 2500 particles per ml of fuel to 320 particles. This improved cleanliness enhances engine component life significantly. Field results below.

Tank No.	Volume (liters)	4 μ	ISO	6 μ	ISO	14 μ	ISO	Water (ppm)
	ISO 4406 18/16/13**	1300-2500*	18	320-640	16	40-80*	13	200
1	10,000	73*	13	14*	11	1*	7	120
2	50,000	110*	14	10*	11	2*	8	86
3	75,000	42*	13	4*	9	1*	7	120
4	50,000	106*	14	11*	11	1*	7	88
5	75,000	88*	14	13*	11	3*	9	85
6	50,000	60*	13	8*	10	1*	7	90

* This number represents the actual number of particles per mL of fuel

** This specification is used as the allowable limit of particle contamination as per the Worldwide Fuel Charter

All testing was performed inside the fuel tank approximately 25mm (1 inch) from the tank bottom

Lubricity is an important factor with injector life. Improved lubricity helps with injector cooling and longer injector life. Fuel Right is more than a lubricity improver; Fuel Right reduces the co-efficient of friction (see figure 4) and provides a protective lubricating layer (see figure 5). The result is longer fuel system component life.

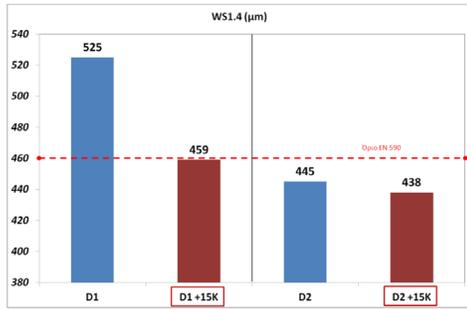


Figure 3. Corrected wear Values WS1.4

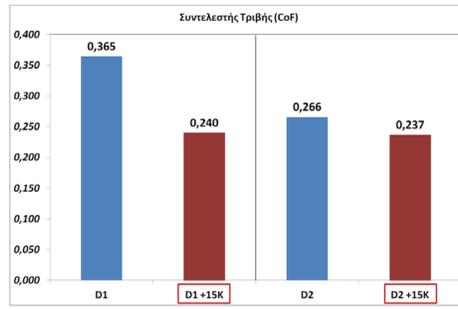


Figure 4. Coefficient of Friction

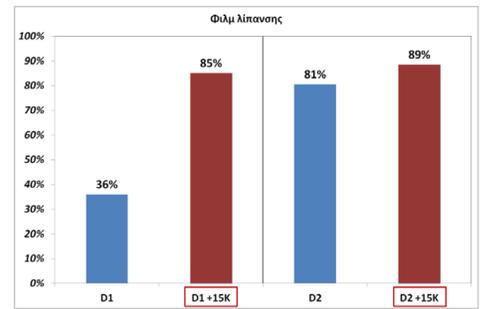


Figure 5. Lubricant film Impact

Note: Testing performed by the National Technical University of Athens (NTUA) accredited lab.

REDUCED EMISSIONS

Tightening environmental emission regulations are affecting the marine sector. Fuel Right plays a significant role in reducing emissions. Improved combustion equates to reduced fuel consumption and reduced carbon build up in the engine's cylinders.

Studies carried out on ferry with a four stroke medium speed diesel running on ultra low sulfur diesel fuel demonstrated a significant reduction in emissions. Testing was conducted in accordance with MARPOL Annex VI NOx technical code. Testing results showed a reduction in NOx, SOx, CO, HC and PM.

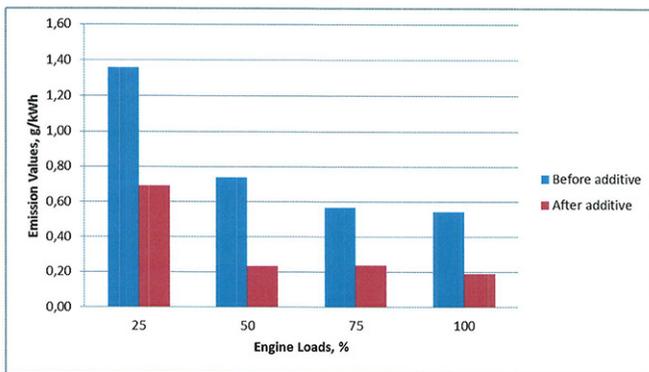


Figure 7. HC emissions with and without fuel additive for different engine loads.

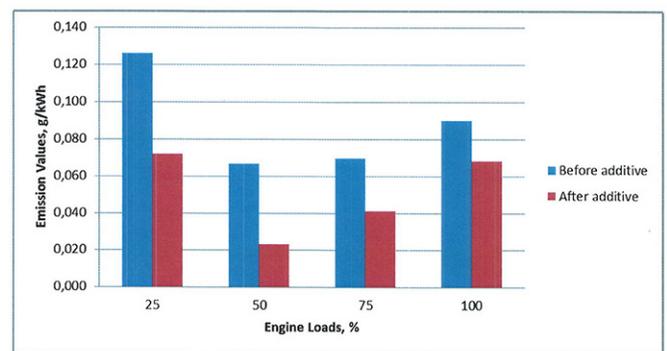


Figure 8. Total PM emissions with and without fuel additive for different engine loads.

Fuel Right reduced HC emissions by 60%

Fuel Right reduced particulate emissions by 38%

Independent study conducted by Istanbul Technical University Faculty of Naval Architecture and Ocean Engineering

It is important to note that the fleet of vessels within this ferry company previously suffered from serious fuel contamination issues and high filter demand despite the use of a competitive additive that claimed to remediate these issues. Since adopting Fuel Right into their fuel delivery, fuel efficiency has improved substantially and filter replacement cycle now meets the OEM engine manufacturer's recommended replacement interval. Emissions are reduced as well.

Fuel Right has proven to be effective in multiple fuel types including heating oil, ULSD, bio-fuels, marine gas oil, IFO and LSFO.

REDUCED CARBON DEPOSITS



Elin Ship conducted a 8,667 hour test with Fuel Right and then proceeded to tear down the engine for a routine rebuild. The engine showed no evidence of hard carbon deposits and a much cleaner burn. The images show extremely clean exhaust valves in the cylinder head.

The cylinders showed no evidence of uneven wear or scoring. Inherently, reduced carbon deposits reduces blow by and helps to improve lubricating oil life.

Improved combustion also translates to improved fuel efficiency. Elin Ship experienced excellent improvement in fuel economy even at reduced engine loading.



Our fleet consists of three vessels. Two tanker/ro-ro vessels that operate solely on MGO and one chemical tanker that operates primarily on IFO 180 but uses MGO to enter/leave ports.

We frequently had a lot of problems with bacterial infections in MGO storage tanks. At the time, we were using Bioguard to treat the MGO tanks and while it was somewhat effective, we actually had to manually clean the MGO tanks every 2,5 years (when the vessels were dry-docked) in order to remove sludge.

In May 2015 we started using Fuel Right additive to all our bunker tanks both in MGO and IFO. Immediately we noticed a night and day difference in MGO tanks. There were no problems with microbial infection whatsoever. In fact we have now stopped using the onboard microbial test kits and we can almost strip the tank to its bottom without having problems with filters clogging as we had before using Fuel Right. I personally inspected the MGO bunker tanks of one of our vessels that was dry-docked on September 2015. The tanks were clean.

As for the IFO 180, I carried out a lot of tests, with and without Fuel Right during these eighteen months over several bunkerings as to ensure that I could attribute any positive results to Fuel Right and not to the possible variations in bunker quality. I can now attest that there is less sludge production and the fuel filters' cleaning intervals increase significantly, about 30% when using Fuel Right. Bunker quality of course still remains of great importance.

Overall, ours has been a positive experience. We intend to keep using Fuel Right in the future, treating our MGO and IFO bunkers on a continuous basis.

Kind regards,
Konstantinos Pegios
Technical Dept. Manager
Elin Shipping Company



Shen Hua Shipping

Shen Hua operates a fleet of (up to 76,000 DWT) bulk carriers that transport coal to major Chinese ports. These vessels burn an average of 20MT of IFO bunker fuel per day. Fuel Right was introduced on a trial basis in 2016; the results showed significant improvements in fuel viscosity, cleaner purifiers and filters, a visible reduction in emissions and an estimated 3.67% improvement in fuel economy. Shen Hua has implemented a Fuel Right program across their fleet of 40 ships.

Estimated annual savings per ship (based on independent study)

- 209 tonnes of fuel oil
- 653 tonnes of CO₂
- 17.55 tonnes of NOx
- 2.10 tonnes of SOx



Before

After

Before

After

Before

After

Fine Filter beside #2 Engine

Main Filter to Engine

Fuel Oil Separator



DERSA FERRIES BRAZIL - TRIAL

Desenvolvimento Rodoviario S.A. (DERSA) operates a large ferry fleet in Sao Paulo, Brazil region. The fleet has experienced severe problems arising from “sludge formation” in the diesel fuel delivery system including tanks. The consequences of this sludge formation include clogging of the fuel lines, an unacceptably high frequency of filter replacement as well as significant, undesirable exhaust emissions.

Vessel Description:	Hull:	Mono-hull
	Dead weight:	263 tons
	Length:	49 meters
	Breadth:	11.9 meters
	Draft:	2.1 meters
	Vehicle capacity:	50 cars
	Engines:	Scania
	Fuel:	Diesel
	Duration:	6 months
	Product:	Fuel Right 15K



Filter prior to treatment

RESULTS:

Filter Demand:

3 month Filter Demand w/o Fuel Right: 29
 3 month Filter Demand with Fuel Right: 16

45% reduction in filter demand
 Average cost of filter at time of test USD \$143 each
 Projected annual filter cost saving: \$7,436 per ferry
 Total ferries in fleet: 33
 Total filter savings: 33 x \$7,436 = USD \$245,388

Fuel Economy:

Average consumption w/o Fuel Right: 3,40 l/hr
 Average consumption with Fuel Right: 3,23 l/hr
 Average reduction in fuel demand: 5%



I was the person who started this program in the tug fleet as well as onboard the Atlantic Tern. We have had good results using this product to help keep our tanks, engine fuel lines, filter housings and injection system clean. As a side effect we have less carbon build up in the L/O spin filter onboard the Atlantic Tern which will help extend L/O life expectancy. The Tern is a good example as this vessel is used for stbd duties and operates for long periods of time at low power and speed. For an older engines equipped with mechanical injection and fixed timing this is a poor operating profile. The Fuel Right additive is used to assist with clean burn.

Regards,
 Jean-Marc Reich
 Senior Marine Engineer
 Atlantic Towing



FUEL RIGHT PRODUCTS

30K

30K is available in 18.9L pails and 208L drums. It is our most popular product used in the commercial shipping sector. Blended at a treatment ratio of 1:30,000, 30K is a concentrated blend of Fuel Right proprietary chemistries designed to dissolve sludge, clean fuel tanks, filters and strainers. It deposits a microscopic corrosion coating to help protect the fuel tanks walls, fuel lines and any other component immersed in fuel from corrosion. 30K is a versatile product widely used in premium fuel programs as well as in heavy marine applications to treat diesel fuel, marine gas oil and intermediate fuel oils (IFO 180, IFO 380, VLSFO).

15K

15K is available in a variety of package sizes, 18.9L pails and 208L drums. Blended at a treatment ratio of 1:15,000, 15K is a unique blend of proprietary chemistries designed to dissolve sludge, clean fuel tanks, filters and strainers. It deposits a microscopic corrosion coating to help protect the fuel tank walls, lines and any other metal component immersed in fuel from corrosion. 15K also includes an anti-freeze ingredient to help eliminate fuel line freezing in colder climates. 15K is suitable for use in marine fuels, diesel fuel, home heating oil.

15K-VSL

Blended at a treatment ratio of 1:15,000, 15K is a unique blend of proprietary chemistries designed to dissolve sludge, clean fuel tanks, filters and strainers. It deposits a microscopic corrosion coating to help protect the fuel tank walls, lines and any other metal component immersed in fuel from corrosion. 15K also includes a lubricity improver which helps to enhance overall fuel lubricity. 15K-VSL is suitable for use in marine fuels and diesel fuel.

ProActive™

ProActive was specifically designed to serve the retail consumer market. It is available in a variety of packaging sizes, 18.9L pails and 208L drums. Blended at a treatment ratio of 1:10,000, ProActive™ is a unique blend of proprietary chemistries designed to eliminate sludge, clean fuel tanks, filters and strainers. It deposits a microscopic corrosion coating to help protect the fuel tank walls, lines and any other metal component immersed in fuel from corrosion. ProActive also contains additional lubricity improver to further enhance fuel lubricity. ProActive is suitable for use in diesel fuel, marine gas oil and unleaded fuels.

Winterizing Products

Fuel Right manufactures a variety of winterizing additives that include Fuel Right's proprietary chemistry.



It PAYS to FUEL RIGHT!



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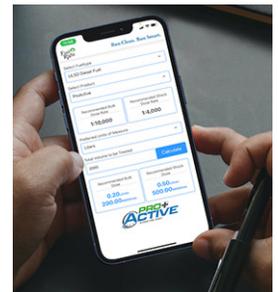
Fuel Right is **ENGINEERED** to provide **CLEAN, CLEAR FUEL** in the tank ensuring **OPTIMAL FUEL QUALITY** free of sludge contamination, reduced particulate and water. The fuel tank is **PROTECTED** by a microscopic corrosion coating even in the presence of contamination and water. Fuel Right removes contamination throughout the fuel system resulting in **EXTENDED FILTER LIFE** and unrestricted fuel flow. Fuel Right's unique technology optimizes engine **PERFORMANCE** ensuring **CLEAN INJECTORS, REDUCED EXHAUST EMISSIONS** and **IMPROVED FUEL ECONOMY**.



Fuel Right has an established group of representatives worldwide and has worked with a number of clients across many industries. Fuel Right products are EPA registered and are available globally.

DOWNLOAD THE APP

The Fuel Right Dose Calculator is designed to help users determine the proper mixture ratios for treating fuels with Fuel Right additive technology. This simple calculator allows you to select preferred units of measure making it easy for the end-user to determine the proper mixture quantities based on the volume of fuel being treated.



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