

Testdokumentasjon for Enzytron drivstofftilsetning.



På det profesjonelle markedet selges Enzytron under navnet Soltron





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Dear Simon,

You asked for my comments about Soltron.

As Engine Expert for Practical Boat Owner magazine, I get sent details of many fuel treatments. I always ask the companies to send me details of any scientific proof of their claims. Usually it all goes quite, or at best they send some testimonials, but rarely any real evidence.

When a sample of Soltron came my way, with claims of improved combustion efficiency, my request for supporting evidence was answered a few days later with a thick A4 envelope full of university and independent lab reports.

There was plenty of scientific evidence that Soltron improved combustion efficiency by up to 15% in ideal conditions. For the leisure boater this was much more likely to be about 5%, so it was cost neutral and to a user of only 30 to 50 gallons of diesel a year, not a lot of interest.

However, the more I read the scientific reports, the more interested I became. Oil companies were using Soltron as an agent to clean sludge from fuel storage tanks. Normally they have to send men wearing breathing apparatus inside to do the job. Northern Ireland railways were preventing regular breakdowns of their engines because they were using Soltron to clean their tanks. Hospitals were reducing the heating bills. Most modern leisure boats have no way of cleaning their tanks and sludge can become a problem.

The final clincher for me was that a UK lab had been asked to test Soltron's ability to eliminate 'diesel bug'. The lab found that although not killing all bugs immediately, as would a biocide, after several repeated doses, the contaminated fuel was nearly 100% clear of the bug.

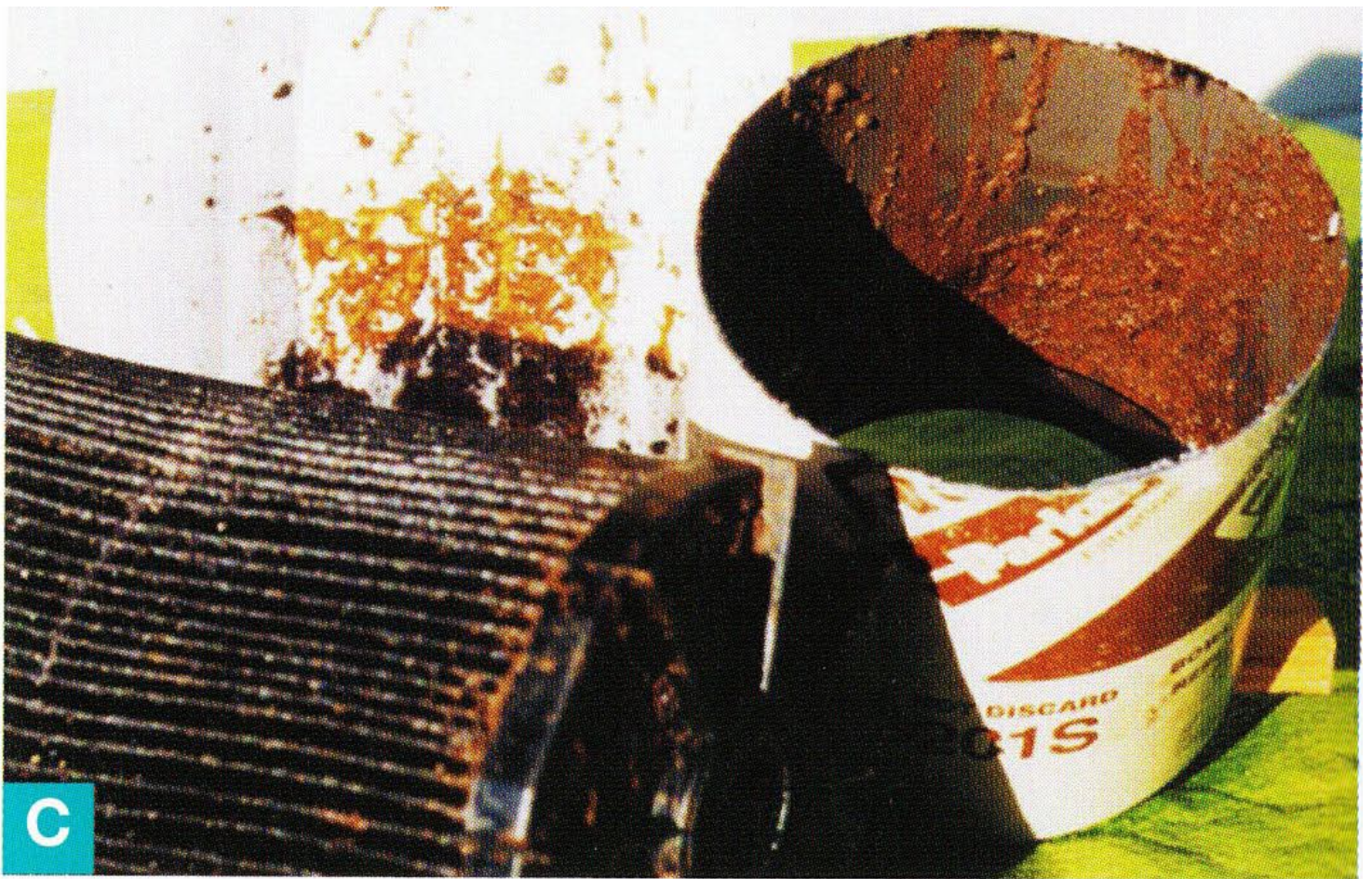
Soltron is an enzyme, not a biocide, and is not hazardous to use. It has no tendency to build up any resistance to its effectiveness and can be used at each refuelling.

Soltron seemed to be a cost neutral method of cleaning hydrocarbon sludge from the fuel tank and a diesel bug killer, with scientific evidence in support of the claims.

Just at this time, a colleague approached me with a problem. His motor cruising school boat, a Birchwood 37, had just had both engines replaced. The fuel system remained undisturbed. After 120 hours the boat's performance had reduced so that the maximum speed was only 12 knots, down from 17 knots, and rpm was severely restricted. The installing engineers changed the fuel filters and performance was returned to normal. I cut one of the primary filters in half and found the filter severely contaminated with brown sludge – a clear case of 'diesel bug' infestation.

I persuaded my colleague to try Soltron, so we put in a 'killer dose' used normal amounts at each subsequent refuelling and changed the filters again after a further 120 hours. No other work was done. I cut this 'second' filter in half and found the inside absolutely clean. After this experience, I was prepared to endorse Soltron unreservedly.

Below are the photographs of the two filters. Photo 1 shows the filter as found after the loss of performance of the Birchwood 37 120 hours after fitting new engines. Photo 2 shows the filter after running 120 hours using Soltron.



C



D



Isabel

VESSEL	ISABEL
CALLSIGN	PDGZ
BUILT	1997
ISM code	1398/2001
IMO number	914 8128
DWCC SUMMER (IN MT)	3950
DWAT (IN MT)	4182
ICECLASS	1A
SUMMER DRAUGHT LOADED	5.89
TIMBER CBM	6000
CONTAINER CAPACITY (TEU) hold/deck	136 / 98
GT	3323
MAX. SPEED KNTS	13.0



Isabel before treatment



http://www.wijnne-barends.nl/scheepvaart_vlootlijst_isabel.html

Draft case study of Isabel, GT 3,323. 3608 Caterpillar engine, 2460kW

The vessel has a regular route from Delfzijl, Holland to Russia, where it collects timber. The fuel consumption is monitored by the vessel and head office. The trip normally takes 168 hours - 7 days.

- Normally the fuel meter has been set at 340 litres per hour
- Engine 1,000 RPM
- And 8° on the controllable-pitch (rotatable-blade) propeller.

Controllable pitch propellers: By adjusting the blade pitch, full use of engine power at a wide rpm range is possible under all operational conditions, ensuring maximum thrust production, utmost flexibility, and manoeuvrability. The highest propulsive efficiency for any speed and load condition can be obtained and fuel can be saved.

After 500 - 600 hours the vessel would experience injector fouling with the attendant problems and costs. Since running on Soltron XMILE Marine this has not reoccurred.

Soon after the first fuel treatment, there was a notice lack of odour and a visual reduction in black smoke.

- By 376 hours the fuel consumption at 1,000 RPM had fallen to 320l/hr @ 8° pitch.

The decision was taken to utilise the extra torque and change the standard operating procedures too:

- 340 l/hr, 1,000 RPM @ 8.5 - 9°.

The last trip to Russia was completed in 146 hours, the fastest ever.

N.B

Menna, a sister ship, GT 2,561, 1845kW has recently started using Soltron.

pon

CAT

Oil Analysis by Pon Power BV of ware elements and the oil condition/contaminants <http://www.pon-cat.com/>

Engine oil (>800ltrs @€3.50) is changed every 1,500 hours. With continual laboratory analysis and experience with other Caterpillar engines of this size, it is expected that the drain down time will be extend to 3,000+ hours. SC-31, a Dutch fishing vessel has already logged 4,500 hours on the same engine oil by using Soltron XMILE Marine.



Isabel 25th Augustus voor Soltron – without Soltron

Visual inspection of soot deposits on the crankcase cover



20th September eerste reis op Soltron. After fist trip, 367 hours.

Normally at this time the engine oil separator (filter) would have about a 8ml thick coating of carbon from the combustion and blow by gases.

The oil filter was being changed weekly and the engineer had to clean to clean the fuel system daily.

There is approx. 1 ml of coating on the filter after 367 hours and the inside of the engine is being cleaned up.

SOLTRON

Improved Efficiency through Enzyme Fuel Treatment Technology on Large Marine Diesel Engines

Prof Roy Douglas, BSc, PhD, MSAE
Queens University, Belfast

Stena Line Trader, Cross Chanel Ferry

Length: 212 m
Width: 26.7 m
Built: 2006
Gross tonnage: 26,660t
Draught: 6.3 m
Speed: 22 knots
Freight Capacity: 3 100 lane meters
Ship Builder: FMW-Fosen, Rissa, Norway
Flag: Dutch
Engines: 4 x B&W MAN 9I 48/60B
kW Horsepower: 2 x 10,800 kW



Test Results for Stena Line Trader

During the test period, the average fuel consumption and sample exhaust emissions of the trader engine were recorded on a daily basis over a 65 day period. Trader uses Marine Gas Oil (MGO) fuel, measurements were logged from the onboard fuel meters and emissions were measured using a Kane 250 combustion analyzer.

A base line using untreated MGO fuel was established for 14 days, 160 hours, of operation. Enzyme treated MGO fuel (one part in 10,000) was used on day 14, initially no change was notable. After 20 days, 230 hours, of operation there was notable increase in specific CO from **1.07 +/- 0.15g/kWh** to **1.36 +/- 0.15 g/kWh**. This continued for 7 days, 80 hours, after which the specific CO dropped to **0.76 +/- 0.15 g/kWh**. There was also a drop in fuel consumption from **213 +/- 5g/kWh** to **190 +/- 3g/kWh**, **decrease in consumption of 10.8%**. The improvement was maintained for the remainder of the test period, 274 hours with a slight improvement of 12.7% less than the manufactures consumption values.

It is clear from these results that there is a very significant improvement in fuel consumption and CO emissions when SOLTRON Enzyme treatment is applied.

It is also interesting that the changes are not seen immediately but that some form of "clean up" process is involved. There would appear to be a 21 day "conditioning" period when the enzymes treatment is preparing the engine. This is followed by a period of 80 hours of operation when CO is higher than previously recorded. These are deposits within the engine which are then broken down and consumed by the engine.

Improved thermal efficiency through Enzyme Fuel Treatment Technology on large marine diesel engines

FROM OUR PURE BREED COMES PURE GOODNESS



Report on Boiler Operations at Jersey Dairies Ltd, Channel Islands

Jersey Dairies Ltd is the only operational dairy on the Island, producing some 270,000 litres of pasteurised milk a week.

The plant has 2 x BIB Cochran, Wee Chieftain Mark 4 package steam boilers, rated at 5000kg/hr and 14.5 Bar g, using modulating split screen burners.

A Fuel blend of 180cSt and Gas oil, conforming to BS 2869 Class E and having a viscosity of 67.91cSt @ 40°C, is supplied by Fuel Supplies (C.I.) Limited, the local Shell distributor. Batch blends are made every two months. Stability and homogenisation problems are known to exist with these residual fuel blends. Commingling of two batches causes asphaltenes to agglomerate and further compounds operational problems by; blocking filters, valves and causing incomplete combustion. Boiler carbonation, smoke and acid smuts are a common indication of this.

Up till August 2003, when the Dairy started using Soltron Enzyme fuel treatment - supplied by Soltron Jersey Ltd - the boilers were regularly experiencing shut downs four to five times a year. This necessitated engineers from Cochran's being flown in at £3,200 a visit.

Although the fuel filters were cleaned on a daily basis, pump failure (£1,000 each) 3 -4 times a year was common. Furthermore, annual boiler maintenance was a lengthy and costly process, with hard carbonation having to be scraped out. The products of incomplete combustion were to be seen in a high smoke level and acid smuts that contaminated local swimming pools. Jersey Dairies were obliged to pay to have them cleaned.

Treated fuel

The effect of introducing of the Soltron treatment was apparent immediately. Whilst there may be short period of smoke at start up, generally all that is visible is a heat haze from the stack top. The boilers on a six-month rotation and now, unlike pre-treatment, fire immediately on commissioning and remain in service.

It has been found that the fuel filters need only be cleaned every three months or so, and there have been no pump failures or boiler shutdowns. Boiler tube cleaning is a quick brush through.

Current fuel consumption is \pm 14,000 litres a week. Whilst reduced carbonation will have produced fuel efficiencies, the Dairy only installed computerised monitoring equipment in 2004. From the outset, Soltron has enabled the Dairy to maximise the efficient running of the boilers, reduce maintenance and emissions.

By the use of 145 litres of Soltron Enzyme treatment, it is estimated that the Dairy is saving £18 -£20,000 on its annual boiler maintenance expenditure.

Engineer Manager
1st June 2005



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Soltron - Protects Engines and Cuts Fuel Bills

Soltron contains natural enzymes (nature's most powerful catalysts) extracted from marine algae. It prevents 'Diesel Bug' contaminants found in some marine gas oil from damaging engines.



Important benefits of Soltron include:

- reduced fuel consumption
- lower emissions
- prevents contamination of fuel
- reclaims contaminated fuel
- improves the lubricity of fuel and engine
- extends fuel life in storage/standby.

Need a fast Soltron Quote? >

Contact WP Marine
for a rapid response

Soltron cuts Stena Line's fuel costs



Soltron is already used by Stena Line Ferries. WP Marine carried out emissions testing and fuel sampling. Test results show how **Soltron improved fuel efficiency by 12.7% and reduced emissions by 45%**.

Soltron produces these results after 42 days of a 65-day trial on the Stena Line Trader, a 212-metre cross channel ferry (26,660t) with four B&W MAN 9I 48/60B engines (KW Horsepower: 2 x 10,800 kW).

Read the full **Soltron Stena Line Case Study**.

What is Diesel Bug? What causes Diesel Bug?

Diesel bug is a biological contamination that can occur within gas oil.

Risk of contamination increases if you attempt to use red-dyed road diesel in your marine engine.

This is because road diesel contains up to 7% FAME (Fatty Acid Methyl Ester or Biodiesel).

Esso Petroleum has invested in new equipment at Fawley Oil Refinery to produce FAME-free marine red diesel. It is being made available from mid-2011.

How does Soltron stop Diesel Bug and reduce fuel consumption?

Soltron's enzymes continuously react with Diesel Bug contaminants, converting them back into fuel.

Any remaining deposits are broken down into sub-micron sizes that burn off during combustion.

During the ignition of fuel, the Soltron enzymes help the diesel to combust so all the fuel burns off. It keeps the fuel particles small so they have lots of combustible oxygen around them.

Soltron also speeds up the reaction. Better fuel combustion means less fuel is needed for the same power - so less fuel is used.

For more information and a fast quote, **contact WP Marine's Soltron team**.



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