

PROBLEM SOLVING LAB

SINGAPORE UNITED KINGDOM UNITED ARAB EMIRATES

BELGIUM

HOUSTON



A value driven organization which believes in the sanctity of providing the highest level of customer satisfaction through sincerity, commitment, technical excellence and tireless effort. Viswa Lab is more than a lab – It is your partner in solving all your marine fuel and fuel-related marine engine problems. This is now encompassing the areas of Energy Efficiency and Emission Control.

PHILOSOPHY

Our starting point is "Why we do what we do?"
The answer to this question provides the raison d'etre
of Viswa Lab's existence and growth.

We firmly and passionately believe in looking after the interests of the fuel user, stay loyal to the fuel user and avoid situations leading to conflicts of interest. Viswa Lab's commitment to the fuel user provides the motivation for developing various investigative processes, several algorithms and a passion for helping and protecting the fuel user from fuel-related problems.

Our commitment to the interests of fuel users has pushed Viswa Lab into all aspects of investigating fuels and identifying contaminants and adulterants, identifying problem fuels which cost hundreds of thousands of dollars in machinery breakdowns, repairs and delays.

Identifying problem fuels also help in identifying good fuels. This, in turn, has led us

to formulate various Algorithms which provide a Benchmark which will flag fuel quality and various types of fuel -related machinery problems.

To provide forensics support to investigate problem fuels at extremely economical rates so that the fuel user is not deterred by the cost of the investigation.

To conclude, Viswa Lab's method of working is from inside out. It starts with the question, "Why are we doing this?" and further goes on to "What are we doing?" and then to "How are we doing it?". The dimension of Why is unique to Viswa Lab. It is Viswa Lab's grand ambition to help every fuel user to handle every type of problem fuel. This explains the purpose-driven passion that it puts into its service.

WHY

VISWA LAB?

RANKS # 2 GLOBALLY IN BUNKER FUEL TESTING

- Accredited to the highest level of lab performance through ISO 17025. In addition, the Lab performance is audited by the U.S. Department of Defense. Also a participant in ASTM's Proficiency Testing Program.
- on the same day it receives the samples –
 Same Day Service.

 Special claim to fame is in identifying problem fuels using cutting edge technology and carrying out in-depth studies.

Only lab that returns the analysis results

Currently serves over 8,500 ships and over 650 customers

- Continuous growth over 25 years
- Four Labs Globally US, UK, UAE and Singapore
- Global operations with agents in 20 countries
- Highest level lab certification ISO 17025 certification for the labs
- Worldwide reputation as a "Problem Solving Lab"
- One of four IMO recognized labs in the world

VISWA LAB HAS EARNED THE ENVIABLE REPUTATION AS "PROBLEM SOLVING LAB"

- Bunker Survey services covering all the major bunker ports conform to ISO 17020 and Singapore SS600 standards
- Only lab that provides a benchmark of fuel quality called Engine Friendliness Number (EFN) © 2001, Benchmark of worth of fuel called True Worth Index (TWI) ©, Benchmark of Purifier Efficiency Number (PEFN) © and other problem identification algorithms such as Problem Fuel Indicating Number (PFIN) © and Filter Blocking Tendency Number (FBTN) ©.
- Only lab that provides a multiple of services in one location: testing of fuel, lubes & hydraulic oils, tribology studies, cylinder oil drain analysis, ignition and combustion studies and material failure analysis studies.

- Only lab dedicated to serving Fuel Users.
- Global services with 4 labs in US, Singapore, UK and UAE. Also has an Administrative office and warehouse in Antwerp, Belgium to serve the customers in Europe.
- Introduced Total Fuel Management (TFM) © in 2001 to reduce specific fuel consumption in marine engines by checking the ignition and combustion characteristics of the fuel and by manipulating the physical parameters of engine performance.

INFORMATION

TECHNOLOGY

The Viswa Lab website (www.viswalab.com) provides protected access to detailed analysis data for every customer. The customer can also manipulate the data to obtain port-specific, parameter-specific, supplier-specific information. Fuel quality statistical data is also made available to the customer request. A huge collection of technical information is available to online. Viswa Lab Technical Updates on fuel, machinery, and regulations and are widely circulated to the marine community.

Viswa Lab earnestly believes in passing on all its knowledge to its customers, empowering them to handle fuel and fuel-related machinery problems. This knowledge dissemination is effected through various media and various fora. Viswa Lab conducts webinars on various topics transmitted to specific geographical areas. Customers sign up, clear their questions, and view the presentations all at the same time.

Viswa Lab provides statistics and contributes articles through blogs through Industry Leading Websites and web and print based journals. Viswa Lab has contributed papers and articles in various seminars. Senior staff from Viswa Lab constantly visit countries in Europe, Far East, Middle East and US and make presentation in various seminars. They also make inhouse presentations for customers as needed. One day training sessions are also provided to customers on specific topics at the lab premises.

EMPOWERMENT THROUGH KNOWLEDGE



With over 10 patents and copyrights and 2 R&D centers, one each in Singapore and Houston, Viswa Lab scores high in its R&D efforts and creative and innovative ideas. The benchmarking of bunker fuels was pioneered by Viswa Lab and subsequently several other algorithm based benchmarks have been established. Viswa Lab has developed specific instrumentation such as FBTN (Filter Blocking Tendency Number), scuffing detection instrument entirely through its R&D efforts. There are other innovative ideas in the areas of energy efficiency and emission control.

A complete list of Viswa Lab R&D projects is available at the Viswa Lab website: www.viswalab.com

CUSTOMER SUPPORT DURING PROBLEMS AND DISPUTES

Viswa Lab has earned the enviable reputation as a troubleshooting lab. Problem fuel samples for investigations are received from customers and non-customers alike. The failure analysis studies conducted by Viswa Lab have earned the recognition of the insurance companies and P&I clubs. Viswa Lab has participated in Moderation, Arbitration and Litigation processes.

The failure analysis studies on marine machinery and components have earned recognition and appreciation for Viswa Lab from the insurance community and P&I clubs.



ONE-STOP SHOP

When a customer faces a fuel related problem he should be provided with all possible assistance. The customer needs expert advice; needs all additional tests to be carried out to clearly identify the root cause; needs all this to be available in one place; needs the helping hand of the lab expertise to walk through the problem. Viswa Lab has equipped itself with state-of-the-art instruments to support the customer in identifying contaminants and quantifying contaminants not only in fuels but also in lubes and cylinder oils. Material Failure Analysis studies by Viswa Lab provide another dimension in diagnosing machinery problems.

VISWA LAB'S ALL ROUND

CAPABILITIES

Fuel Oil and Distillate Fuel Analysis

Analysis of all kinds of Lubricating, Hydraulic oils

Cylinder Oil Drain Analysis

Tribology and Particle Morphology studies

Ignition & Combustion studies (Fuel Tech instrument)

GCMS Contamination Studies/GCMS Screening

FT-IR Contamination Studies/FT-IR Screening

Material Failure analysis

Bunker Quantity Surveys in major ports

Total Fuel Management (TFM)

Total Lube Management (TLM)

Total Data Management (TDM)

Enhanced Fuel Testing Program (EFTP)

Purifier Efficiency Determination (PED)

Filter Blocking Tendency (FBT)

Problem Fuel Identification Number (PFIN)

Bunker Quantity Surveys, Sludge Survey and ROB Surveys

Bunker Purchase Efficiency and Management

Purchase of fuel accounting for Quality - True Worth Benefit

Corrosion Prevention Studies

Viswa Scrubbers

Viswa Energy Management Services - SEEMP and EEOI

Alternate Energy and Alternate Fuels

Assist in resolution of Bunker Disputes quantity and quality

MORE ABOUT VISWA LAB

Viswa Lab has been in existence since 1991. One of the largest fuel testing lab and serve over 8,500 ships. Customers come from over 60 countries. Viswa Lab has enjoyed continuous double digit growth over the last 25 years. This growth is based on customer appreciation and recommendation and not due to any advertisement or marketing gimmicks.

Viswa Lab believes in providing specialized, customer focused, problem solving services. The package of services offered by Viswa Lab is unrivalled. Each item in the package addresses the problems experienced and provides specific solutions to assist the customer.

Enlightened customers, customers with expectations of higher levels of technical expertise, customers who believe in getting the best out of the machinery through better monitoring prefer Viswa Lab. This explains why Viswa Lab enjoys the largest customer base in the technologically advanced countries of Germany and Japan over the last 25 years. Viswa Lab employs highly experienced marine engineers. This explains why we understand the problems of ship. The connection between fuel and the performance of marine diesel engine.

Another distinguishing feature of Viswa Lab is the customer service which has been acclaimed as the best in the industry. This service is flexible and responsive to customer requirements, available 24/7 basis, ready to carry out additional tests and research if necessary to find out the root cause of problems. Viswa Lab also has excellent database management, pattern recognition capability, algorithm driven problem solving - all of which provide much higher value for the service provided.

A TAKE HOME MESSAGE

To call Viswa Lab a lab is analogous to calling Queen Mary a boat or calling a Porsche or a Ferrari a car. Viswa Lab is not a contractor but a partner which will share all its knowledge and expertise and serve its customers with utmost sincerity.

Cutting edge technology, top expertise provided by highly qualified staff, a huge database providing empirical solutions, access to online data have all contributed to Viswa Lab's enviable reputation as a "Problem Solving Lab". Innovations and research distinguish Viswa Lab's services and provide

the comfort to the customer that a problem however complicated will finally get solved.

Ultimately, the proof of a good service comes from customers who themselves become spokespeople for us without any fancy advertising or gimmicks. Viswa Lab has grown in size mainly due to "word-of mouth".



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