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TITRATION

5 10.811

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EXPLANATION

19 39.098

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STANDARDISATION

20 40.078

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TRANSITION

5 10.811

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EVALUATION

4 9.0122

D

DEDICATION

TESTING THE SHIPPING INDUSTRY WITH **SGS MARINE SERVICES**

M**MOTIVATION**

MARINE

FUELS, LUBRICANTS, SPECIALIST & ENVIRONMENTAL SERVICES TO TEST OPERATIONAL EFFICIENCY AND ENVIRONMENTAL CONCERNS

When you are managing a marine shipping fleet, you need to feel confident your vessels are operating efficiently, are protected against breakdown and that all processes are being effectively managed. Whether you are considering fuel sourcing and the subsequent waste disposal; the condition of the vessel, either in general or specifically the engine; or the resulting environmental impact from its use, reliable and accurate analysis allows you to make the right decisions. Having information you can depend on means you can protect the safety of the cargo, crew and passengers, managing risks, protecting profits and limiting costs while ensuring no harm is being caused to the environment and any related regulations are being met.

SGS offers a service that covers all areas of marine fleet management. Our comprehensive global service ensures that wherever your vessels are in the world and whatever service you need, our team of experts is on hand to provide you with all the assistance and analysis required. We are there to ensure your fleet delivers optimum performance and reliability.

ABOUT MARINE SERVICES

Our extensive range of services incorporates marine fuel services such as bunker analyses and sludge and slop disposal monitoring, marine lubricant testing, on/off hire plus other specialist surveys, and environmental services.

MARINE FUEL SERVICES

If you are buying fuel you need to know the amount the ship receives is the quantity you purchased and that it is neither contaminated nor of a quality that could negatively impact on the ship's fuel system, engine or environmental performance. If there are any issues that arise you also need support, advice and guidance in resolving them. Once the fuel has been burned you need to be sure that the waste slops and sludge are being disposed of properly, in accordance with regulations and unadulterated.

By providing you with bunker quantity surveys and routine quality analysis, as well as further specialised analyses SGS supports you through the procurement, delivery and use of fuel. We are also able to ensure waste slops and sludge are properly removed by your vessels contractors and disposed of appropriately.

Bunker Quantity Loading Measurement

We perform bunker quantity surveys and provide you with detailed and reliable analyses relating to the quantity at loading point, discharging point and the quantity of any transferred fuel. As experts in fuel measurement, our bunker fuel inspection services give you confidence that you receive the correct volume of fuel, as purchased. We measure this both pre and post delivery, onboard vessels, and supply storage and/or barges as required. Our extensive global service provides you with reliable, impartial, documented evidence should any shortage claims need to be made.

Routine Bunker Quality Analysis

We give you confidence in the quality of your purchased fuel to provide your vessel with the operational performance and safety levels expected. We assess its conformity with ISO 8217 specifications and ensure it complies with regulations such as Marpol Annex V1, Port State Control Inspections and the various Emission Control Areas (ECA's). Our analyses deliver extensive information enabling you to manage the risks associated with fuel quality issues. Once we have collected a fuel sample, transferred it to our regional laboratory and fully assessed its composition, we are readily available to support you in handling the fuel and through any other related outcomes. Our full service covers visual inspections, representative sampling, laboratory analysis and technical assistance.

Specialist Bunker Analysis

It is common that contamination or adulteration can occur or even that unwanted substances are included in the fuel as a result of the drive in refineries to maximise yields. Should any disputes arise over the quality of the fuel delivered we are able to provide the forensic analysis for you to pursue the claim and we offer you support throughout the process.

To meet the ISO 8217 Standard the bunker fuels should be homogeneous blends of hydrocarbons derived from petroleum refining, free from inorganic acids and from used lubricating oils and should not include any added substance or chemical waste which jeopardizes the safety of ships or has an adverse effect on the performance of the machinery;

or is harmful to personnel; or contributes to air pollution. While performing tests relating to these requirements ensures that the Standard is adhered to, there are many further tests that can help protect a ship's engine and equipment, ensuring safety and preventing unnecessary costs from being incurred. SGS has the expertise to perform an extensive range of assessments helping to ensure that you only purchase and use fuel you can really trust.

Waste Disposal Monitoring

Slops and sludge are the oily effluents that are left over from cargo operations and the bunker fuel oil purification process. However, they can also be a combination of removed liquids after bunker and cargo tank cleaning and a mix of lubricant and greases. Ensuring that these waste products are removed properly from vessels when necessary is an important concern to marine fleet owners, managers and environmentalists alike.

Due to their properties there are differences in the way that slops and sludge are disposed of and any potential uses. Slops have a reasonably high reusable oil content and as such are usually pumped ashore for dewatering and recovery. Sludge has a much lower recoverable oil content. It is usually pumped ashore using sludge pumps into licensed disposal facilities.

SGS can monitor the disposal of slops and sludge from your vessels, checking that each part of the process is being performed in the most cost effective manner, without adulteration and with maximum useable oil recovery.



MARINE LUBRICANT SERVICES

SGS offers a range of lubricant testing services, both routine and specialist that will inform you about the performance, wear, additive content and presence of water and coolant in the engine of each of your marine vessels. This invaluable information can help you to prevent unnecessary damage to machinery, ensuring that it is always properly lubricated and running without resistance. Our service also informs you about degradation and the service life of your engine. By referring to our extensive engine database of more than 15 000 engines and accompanying information that has been collated over five decades we can detail the condition of your machinery and give you explicit cost effective maintenance advice.

Keeping a close eye on a vessel's lubricant, ensuring it is the right match for the engine and other equipment's operational needs can help to avoid the costs associated with engine failure and the subsequent repair and downtime. As with fuel analysis, if there are any issues, you need support addressing them and preventing costs from being incurred. SGS can ensure you identify and use the best lubricant for your vessels' engines. Should you experience any problems with your purchased lubricants we can perform extensive analyses and support you through any claim processes.

Marine Lubricant Routine Testing

An engine's lubricant can provide all the important information you need to understand how well the engine is running. By regularly analysing the lubricant you can make decisions that will benefit the engine's performance. Our SGS laboratories can extract this information through a series of processes, each determined by the equipment or machinery assessed and the type of lubricant used. Building analyses such as these into the routine care of a vessel will protect you from unnecessary costs while allowing you to prepare and budget for repair or replacement costs when they are required.

Specialist Marine Lubricant Testing

When you need some specific specialist analysis to inform you on the condition of an engine, we at SGS can provide you with the service you require. We can work with you and your marine fleet to understand your precise needs and can guide you through engine performance protection, be it through the choice of lubricant or through other measures. Our global network of laboratories means that we can offer you marine lubricant testing wherever your vessels are. As with our routine testing, ultimately, our service will help you to avoid costly engine breakdowns and the associated losses from having any vessels in your fleet out-of-service for repair and maintenance.

Should our assessments reveal any issues with the lubricants you have purchased for your vessels, SGS offers you full support through the process of pursuing any claims. We can provide you with all the further testing and technical assistance required as part of our independent and impartial service.



SPECIALIST MARINE SERVICES

If you are responsible for chartering ships, you need to be sure that the condition at the point of charter matches the ship's condition upon return. Even if the ship is not being hired, a full awareness of its condition at all times is essential to protect both the crew and the profit. Such condition assessments are also required when seeking insurance for vessels or when it comes to making claims on existing insurance policies.

SGS' specialist marine services offer you a full package of vessel condition reporting and should any disputes arise can also provide you with the technical support and assistance needed to ensure the issue is quickly and effectively resolved. Our team of experts can readily perform inspections and help you find the answers to your vessel condition related questions.

Vessel On and Off Hire Surveys

SGS offers assessments both before a vessel is hired and when it is returned. These specialist surveys usually assess the condition of the cargo area and hold and any associated machinery as well as the overall structure of the ship. By providing you with this information you can ensure that, if you are hiring out your vessels, they are not returned damaged in any way. Or, if you are hiring a vessel, you can both ensure the crew takes proper care of maintaining its condition and that you are not charged for any damage that did not occur during the period of hire.

Condition Inspections and Surveys

When it comes to assessing the condition of tank containers, reefers and box containers, SGS offers a range of global services. We can help you with periodic inspections, gas free inspections, wall washes and all the associated laboratory assistance and insurance guidance.

- Periodical Inspections – We offer 21/2 and 5 year inspections on UN portable tanks, IMO I, IMO II and IMO IV tank containers, certifying the in-service time periods permitted.
- Tank Container, Rail Tank and Box Container Inspections – As well as hire surveys we also provide cleanliness inspections and for the rail tank cars we offer Reinheitsschlüssel verification.
- Reefer Inspections – Our trained reefer inspectors are experts in assessing all aspects of refrigerated cargo transportation vessels. As part of this we can provide shipside surveys and claim investigations. We also offer estimate checks, approval and adjustments.
- Intermediate Bulk Containers (IBCs) Testing – Using a mobile prover unit, we provide tests on location, where you need them. These units perform periodical inspections, statutory inspections and re-certifications.
- Analytical Inspections/Dew Point Inspections/Gas Free Inspections – These special testing services are performed on the gas inside the tank and compared with provided fixed values so that a certificate can be issued.

Protection and Indemnity (P & I) Insurance Surveys

When you are seeking insurance you may need to provide or permit a full P & I Survey of your vessels. As a result the company providing the cover will have a fair market value for each ship, can have confidence in its structural integrity and safety for use and can make an evidence-based decision on whether to insure it or not. The SGS P & I Surveys provide all the assessments and certification required for insurance decisions to be made. Protecting both the insurance companies and the fleet owners interests. With the support of SGS you can feel confident your vessels are adequately covered to the appropriate value.

MARINE ENVIRONMENTAL SERVICES

Each year, protecting the environment is of growing importance to every industry. With many thousands of ships delivering cargo across the world at any one time, each dependent on oil-based fuel, it is no wonder that concerns over emissions, waste product disposal and other factors are of primary importance. The International Marine Organisation (IMO) is continually reviewing and updating requirements with regards to marine pollution such as dumping, oil and exhausts. The related regulations come from the International Convention for the Prevention of Pollution from Ships, and are abbreviated from Marine Pollution to MARPOL. The MARPOL regulations are regularly updated, with the latest revisions relating to Annex VI Air Pollution effective as of July 2010.

SGS's Marine Environmental Services can assess your vessels' compliance with the current MARPOL regulations. As part of this, we provide sampling and testing of the ballast water to assess efficiency of abatement system and assess and monitor the ship's stack for emissions also during navigation. Our global service ensures that whenever you need confirmation your vessels are adhering to environmental requirements we can be on-hand to provide you with the reassurance you need.

THE BENEFITS

Through the services that SGS offers, you can feel assured that every aspect of your fleet's performance, safety and effects on the environment are being tested, assessed and reported. This means you can take action whenever it is needed. With so much to consider, having one supplier that you can trust to perform all these services, at every harbour across the world and along all key-shipping routes, gives you the reassurance you need. Our global network of laboratories supports our in port experts and together they alleviate the pressure of maintaining the necessary standards across your entire fleet. When it comes to critical inspections for which you need guaranteed, reliable answers our team draws on their extensive industrial, minerals and agricultural knowledge alongside their oil, gas and chemicals expertise to provide you with the analyses. By working with SGS you not only have access to our global service and critical testing at all major harbours, but you will also be able to view the performance of your fleet via our live web portal. Any testing, certification and reporting is provided to you electronically and reports are stored on our servers for your future user-protected access. Our all-encompassing marine services are in place to support you and your operations, to help you deliver exceptional services to your customers while managing costs, generating profits and ensuring goodwill through your care and attention.



GLOBAL SOLUTIONS



WHY SGS?

Our industry knowledge, alongside our experience and recognition allows us to offer you our advice and to share with you our expertise. Our full Oil, Gas and Chemicals (OGC) programme covers upstream, midstream and downstream as well as LNG. We have been the established leading industry player in the sampling, measurement, analysis and certification of bulk liquids since the 1950s as a unified Group and for many decades before that in the form of the individual international companies who were merged to form what is today's OGC division.

Our Environmental Services support all industries and governments in developing sustainable solutions, complying with environmental regulations and assessing environmental performance. Our team of experienced consultants guide and assist customers through a comprehensive range of specialised environmental services ranging from impact assessments to air and water quality testing and a wide variety of climate change related services.

A WORLDWIDE COMPANY WITH GLOBAL SOLUTIONS

SGS is the world's leading inspection, verification, testing and certification company. Recognised as the global benchmark for quality and integrity, we employ over 64 000 people and operate a network of more than 1 250 offices and laboratories around the world.

We provide innovative services and solutions for every part of the oil, gas and chemicals industry and environmental services when and where they are needed. Our global network of offices and laboratories, alongside our dedicated team, allows us to respond to your needs, when and where they occur. Our reputation for independence, excellence and innovation has established us as the market leader in providing services that improve efficiency, reduce risk and deliver competitive advantage for you.

**FOR MORE INFORMATION ABOUT MARINE SERVICES,
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