

APC continues tank coating success

MarineLine® 784 coating system used for chemical tankers now also specified for the growing product tanker market

Advanced Polymer Coatings (APC), Avon, Ohio, USA, has developed a successful business by providing the high-performance MarineLine® 784 coating system to line and protect the tanks of chemical carriers. Today, more than 350 maritime tankers are employing MarineLine® to pro-

tect against a wide range of chemical cargoes, including methanol, acetic acid, and caustics.

A growing business

The company is now realising further MarineLine® growth by serving the product tanker market. Shipowners are now retrofitting and refurbishing older product tankers to carry a host of newer cargoes such as biofuels, a particular sector growing at an estimated 15% annually. However, due to the corrosive nature of the cargoes and their detrimental effect and breakdown of conventional tank coatings, shipowners are concerned about carrying biofuels. MarineLine®'s unique corrosion-resistant coating is an ideal answer.

Biofuels comprise two categories, each with separate corrosive issues:

Biodiesels or FAMES (fatty acid methyl esters), derived from vegetable oils (palm, coconut, rapeseed, soyabean and tallow, and animal fats), have higher viscosities and are more unstable than conventional diesel fuel. Water contamination is a key problem as FAMES absorb water through seawater ingress, tank washing residues, humidity in tanks, and other sources. Water can promote hydrolytic reactions, leading to the

formation of free fatty acids that can attack and corrode exposed coating surfaces.

Bioethanols, derived from the fermenting of sugar cane, sugar beet, sorghum, corn, wheat and cassava, or starch crops, remain as a single chemical compound. A problem occurs if small quantities of water are dissolved in gasoline/bioethanol blends, causing a highly corrosive situation within the tank.



The newly coated MarineLine® 784 cargo tank coating



A MarineLine® inspector spark testing the top coating application

The most effective solution is to line the tanks of the product carriers with MarineLine® 784. This coating uses a tightly knit, cross-linked organic-inorganic polymer structure to create a nearly impermeable barrier. The coating resists chemical and corrosive attack from a wide range of aggressive cargoes and assures product purity from port to port, virtually eliminating tainted cargoes from occurring, a real problem for conventional coatings that are trying to carry biofuels and other cargoes such as CPPs, PFADs, and methanol.

A proven resource

MarineLine® 784 is already the chosen coatings solution in the chemical tanker industry, carrying thousands of different types of aggressive chemicals, including the full range of IMO chemicals.

Many benefits separate MarineLine® 784 from other types of coatings, and also from stainless steel tanks. These include ease of cleaning, assurance of high cargo purity, and the flexibility to carry and then switch many different types of cargoes. The market for MarineLine® 784 continues to expand as more shipowners and chemical producers in the industry realise the high performance and versatility of this protective coating for handling hazardous cargoes.

A 'green' coating

The MarineLine® 784 cargo tank lining system delivers on green principles that have become so necessary in today's business environments. The extremely smooth, hard, slick surface of MarineLine® 784 makes tank cleaning an easy process. During port changeover, no extensive cleaning chemicals are needed to wash the tank walls, thus greatly reducing the use of cleaning chemicals, requiring less fuel consumption for cleaning equipment, and lowering emissions,

all excellent environmental advantages. Faster cleaning also leads to prompt turnaround, so chemical carriers can go back into service quickly, maximising the usage of the vessels, another green benefit.

MarineLine® 784, which is sometimes referred to as 'liquid stainless steel', is coated directly onto the carbon steel substrate of the ship's tanks. This replaces the need to fabricate tanks made of stainless steel, which can be very costly. It is estimated by APC that a carbon steel tank coated with MarineLine® 784 costs less than one-sixth of the price for an equivalent tank fabricated in stainless steel, thus further preserving resources of the shipowner and shipyard.

Proper application a key

One of the most important aspects to the success of MarineLine® 784 is proper preparation and application. APC has developed a six-step application programme to ensure the tanker owner has many years of profitable service with the vessel. These steps include:

1. Pre-blast preparation
2. Blasting
3. Spray application
4. Inspection
5. Heat cure, and
6. Final inspection.

Not all other tank coating manufacturers employ these steps; however, they have been proven very effective for MarineLine®.

Every coating faces inherent problem areas within a cargo tank. In certain locations, breakdowns may be more prevalent; areas where excessive stress is caused

by structural issues, such as weld seams, edges, corners and others. That is why it is vital to ensure surface preparation is done in accordance with recommended specifications, and care is taken to avoid contamination during the coating application.

Following the pre-work, blasting and application phases, the cargo tanks are heat cured with forced hot air, to exacting specifications, to fully cross-link the coating to provide unmatched chemical resistance. Inspection of the coating process is performed during the entire process of the application by experienced, qualified personnel, to ensure the cargo tanks have been coated to high quality standards. After final inspection and approval, the vessel is ready to carry cargoes recommended by the coating manufacturer after leaving the shipyard.

MarineLine® 784 is provided with a semi-gloss finish, in either standard grey, or a new ivory colour. The coating is offered in 5 gallon (19 litre) and 1 gallon (4 litre) kits with catalyst.



For more information on the MarineLine® 784 tank coating systems, contact:
Advanced Polymer Coatings
Avon, Ohio 44011, USA
Tel: +01 440 937-6218
www.adv-polymer.com

MarineLINE® 784
for Chemical/Product Tankers

THE tank coating system for carrying CPPs, PFADs, Methanol, and Bio-Fuels.



Rely on MarineLine® 784 tank coating to handle a wide range of cargoes carried by chemical and product tankers. MarineLine® 784 offers enhanced corrosion resistance compared to phenolic epoxies or zinc silicates, at a similar cost. It is faster and easier to clean, with higher cargo purity.



Advanced Polymer Coatings
Avon, Ohio 44011 U.S.A.



+01 440-937-6218 Phone +01 440-937-5046 Fax
www.adv-polymer.com

MarineLINE® 784
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THE tank coating system for handling aggressive chemical cargoes.



Transport all IMO cargoes, especially aggressive acids, solvents and alkalis, with MarineLine® 784 tank coating system. The coating uses a virtually impermeable polymer-based technology to ensure cargo product purity from port to port.



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