MarineLine® meets all requirements for the carriage of Fatty Acids and Acid Oils


Recent testing on fatty acid cargoes illustrate that MarineLine® coating meets all expectations for maintaining product purity while also protecting cargo tanks from corrosion.

TESTING #1

In a report prepared by UK-based independent testing service MarinSpec Associates (MA), MarineLine® 784 was evaluated for suitability to carry high purity fatty acids from an industry-leading manufacturer. Test methods were set up and agreed to by all parties. MA carried out continuous immersion tests and cycle tests to replicate actual trade scenarios of deep sea trade and short sea / coastal trade. During and after completion of these testing cycles, the condition of the MarineLine® 784 was inspected. The purpose of this element of testing was to focus on the impact of the fatty acids and the manner in which they are carried and interspersed with other cargoes, on the integrity of the MarineLine® 784 coating. Shown here are details of the trade cycles and the continuous immersion tests:

Deep Sea Trade
1. Fatty acid Cargo 1 ......................... 21 days
2. Cleaning then into ....................... 7 days
   Caustic Soda 50%
3. Cleaning then into Toluene .......... 7 days
4. Cleaning then back to step 1 ..... 1 day
5. Repeat Cycle

Short Sea/Coastal Trade
1. Fatty acid cargo 1 ............................... 7 days
2. Cleaning then into Toluene ............ 7 days
3. Cleaning then into Fatty acid 1 ...... 7 days
4. Cleaning then into Caustic Soda 50% ... 7 days
5. Cleaning then into Fatty acid 1 ...... 7 days
6. Cleaning then into MEG .................. 7 days
7. Cleaning then into Fatty acid 1 ...... 7 days
8. Cleaning then into Methanol .......... 7 days
9. Cleaning then back to step 1 .......... 1 day
10. Repeat cycle

This photo shows the condition of random (typical) selection of MarineLine® 784 panels removed from continuous immersion tests.
**Testing #1 Conclusions** - MarineLine® 784 did not appear to display any symptoms of failure such as blistering, cracking, detachment (inter-coat or surface), rust spotting or corrosion, throughout and at the completion of the test regime, and displayed good resistance to the fatty acids. The integrity of the coating appeared to be intact in all cases. Even though the coating was discoloured to some extent by higher melting point grades, there were no obvious signs of coating failure after exposure to those grades, or indeed after exposure to any of the grades. Finally, MarineLine® 784 appeared to perform well in both the Deep Sea and Short Sea/Coastal cycles replicated in this project. A slight loss of coating gloss, particularly in the Short Sea cycles suggests special cleaning approaches may need to be employed after the unloading of these fatty acids to ensure complete removal of the fatty acids, particularly with regard to the high melting point grades.

**TESTING #2**

Another report was prepared for a leading manufacturer and exporter of oleochemicals such as fatty acids, palmitic acids soap blends, stearic acids, esters, and glycerine.

The company asked APC to study the effects of MarineLine® 784 coated steel coupons immersed in five fatty acids and glycerin cargoes manufactured by the company for six weeks incubation at cargo melt conditions. APC tested the immersed coated coupons after four discreet time intervals to assess acid value and colour for the cargoes. And, after six weeks, samples of cargoes were tested for PAH’s, colour, GC assay, acid value, and iron content. Stearic acid 37% was tested at 60˚C. CKFA and DCFA cargoes were tested at 35˚C.

**Testing #2 Conclusions** - Virtually no changes were observed after six weeks incubation in any of the five cargoes. No virtual changes in the required properties occurred in the presence, or absence, of MarineLine® 784 coating. Based on these test results APC believes that MarineLine® 784 coating would have a null effect on these and similar cargoes at the storage conditions shown for extended time periods in a seagoing transport operation.

For more information contact your MarineLine® Sales Representative.