

*Marine***LINE**[®]

MarineLine[®] Coatings: Efficiencies in the Real World
Operational Efficiencies and Cost Savings



 **ADVANCED**
POLYMER COATINGS

What Do Shipowners Want from their Chemical Tankers?

- **Generate a strong return on Investment (ROI) over the life of the tank coating.**
- **Easy tank cleaning and drying for fast turnaround with minimal downtime.**
- **Versatility with the ability to carry a wide range of chemical, CPP and Veg Oil cargoes.**



What Do Shipowners Want from their Chemical Tankers?

- Assurance of product purity from port to port.
- Tank coating application and curing are done correctly and certified.
- Ongoing tank coating inspection/management for worry-free performance.



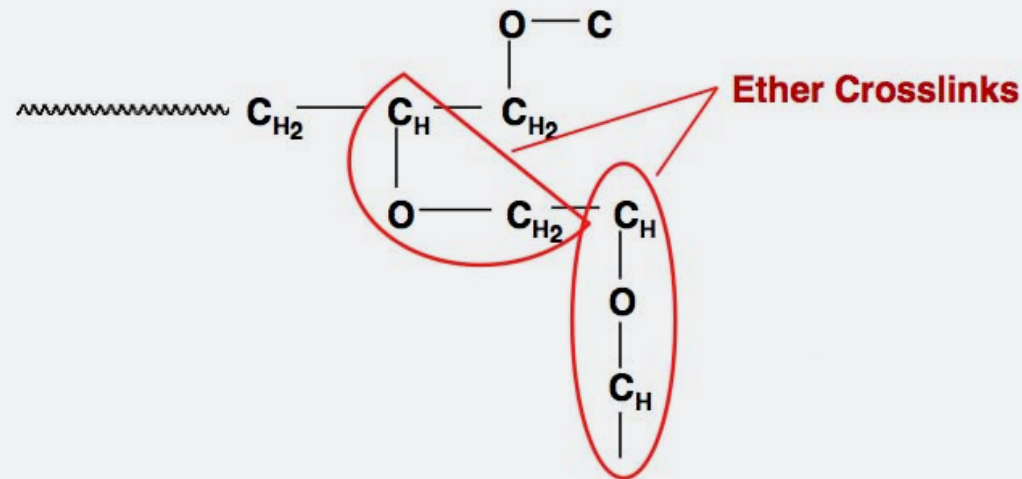
This presentation will show how the MarineLine® 784 coating meets these needs.

***Marine*LINE®**

 **ADVANCED**
POLYMER COATINGS

The Chemistry Behind MarineLine - A Solution Emerges

Homopolymerization of MarineLine®



MarineLine® is cross linked by an ether (c-o-c) structure, one of the strongest bonds in chemistry, meaning there are no hydroxyl groups available for hydrolysis in MarineLine®.

Marine**LINE**®

 **ADVANCED**
POLYMER COATINGS

The Chemistry Behind MarineLine - A Solution Emerges

- **MarineLine[®] has been tested and proven superior vs. conventional coatings such as inorganic zincs, phenolic epoxies, and stainless steel.**
- **MarineLine[®] resists 98% of corrosive acids, alkalis, solvents, gasses and materials at various temperatures.**
- **Outside, independent testing has also verified this performance and strengthens the case against competitive coatings and stainless steel.**

***Marine*LINE[®]**



MarineLine Provides Profitable Benefits - Easy Cleaning

- **Extremely smooth surface makes cleaning fast**
- **Less slops**
- **Less cleaning chemicals needed**
- **Cleaning benefits are achieved through non-absorption, low surface energy and smooth surface**

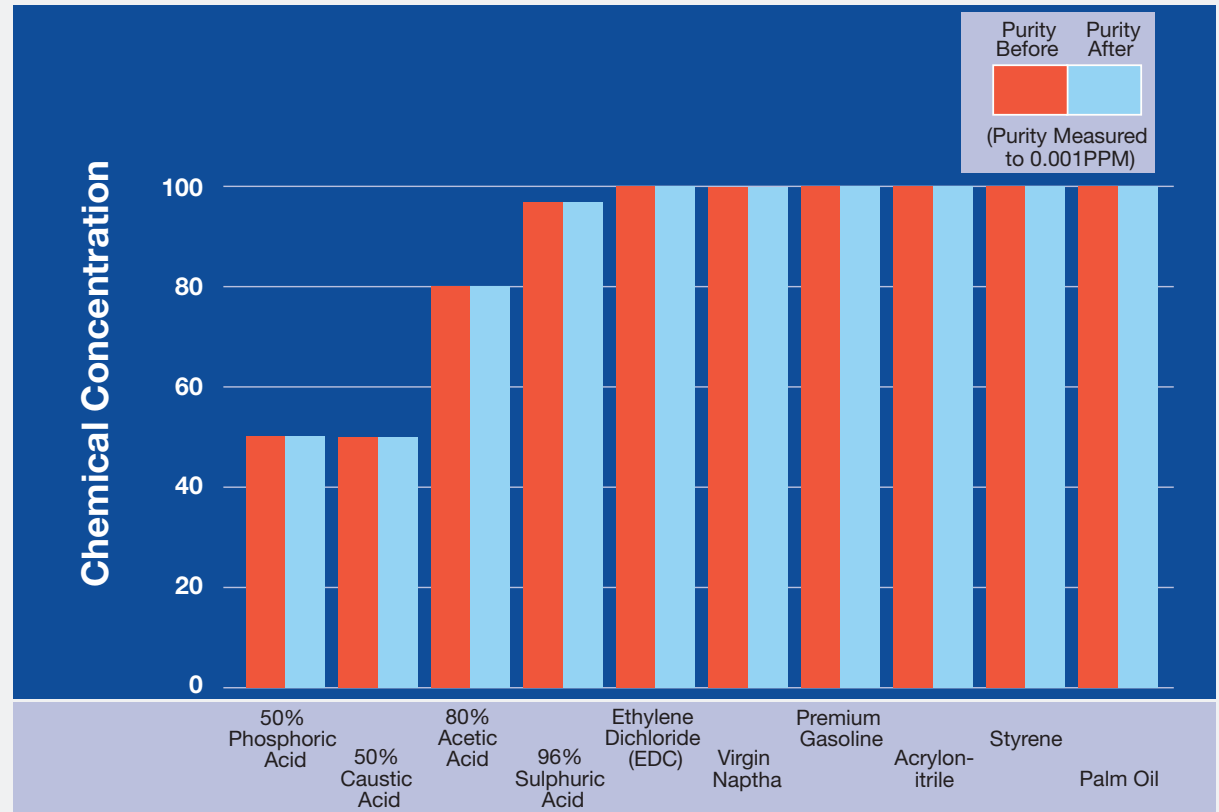


Marine*LINE*[®]

 **ADVANCED**
POLYMER COATINGS

MarineLine Provides Profitable Benefits - Product Purity

MarineLine[®] cross-linked structure means the coating will not absorb the cargo, thus ensuring product purity, from port to port.



Products Tested: tests certified or performed by DNV, Verwey Labs and other independent labs.

MarineLINE[®]

ADVANCED
POLYMER COATINGS

MarineLine Provides - Profitable Benefits - Versatility

- MarineLine® offers the owner the ability to carry all cargoes on the IMO list, including:
- Acrylonitrile, VAM, Methanol, Palm Acid, Acetic Acid
- Ships can leave the yard after certification and load aggressive cargoes immediately.
- Owners can carry cargoes that were previously allotted for stainless steel tanks only.



MarineLINE®

 **ADVANCED**
POLYMER COATINGS

MarineLine Provides - Profitable Benefits - Versatility

#1 - Real World Example of Cargo Sequencing Provided by a Ship Owner

Location	Cargo
Rafnes	Loaded caustic soda and EDC
Rotterdam	Caustic soda and EDC discharged
Antwerp	Loaded PGI, latex and MEG
Rotterdam	Loaded VAM, 2 ethyl hexanol, LAB, styrene monomer
Barcelona	Discharged VAM, 2 ethyl hexanol
Lavrion	Discharged styrene monomer
Gebze	Discharged PGI, latex and MEG
Yuzhny	Loaded full cargo of methanol

MarineLine Provides - Profitable Benefits - Versatility

#2 - Real World Example of Cargo Sequencing Provided by a Ship Owner

Location	Cargo
Algeciras	Loaded TDI, xylene, white spirit, hexane and toluene
Gebze	Discharged toluene, white spirit and hexane
Sines	Loaded pygas
Antwerp	Discharged TDI and xylene
Rotterdam	Discharged pygas and loaded slack wax
Hamburg	Discharged slack wax and loaded EDC, trichloroethane and methylene chloride

MarineLine Provides Profitable Benefits - Application Assurance

APC's six-step approach provides assurance that tank coating application and curing are done correctly and certified.

1. Pre-Blast

2. Blasting

3. Spray Application

4. Inspection

5. Heat Cure

6. Final Inspection

***Marine*LINE®**

 **ADVANCED**
POLYMER COATINGS

Thank You!

**Thank you for your interest in MarineLine®.
We are pleased to answer your questions.**

***Marine*LINE® 784**

www.adv-polymer.com

***Marine*LINE®**

