



MarineLINE®

Carriage of Palms Oils is a Daily Service for MarineLine® Cargo Tank Coating

The MarineLine® cargo tank coating system is well known in the chemical and product tanker market for its versatility and ability to carry a very wide range of chemicals. In this Technical Report, we focus on the carriage of palm oils.

The Palm Oil Trade Boom

According to the U.S. Agricultural Department, global palm-oil production rose 20% from 2010 to 2014, as consumption rose at a similar pace. The market for palm oil continues to grow rapidly. Most production comes from the Far East countries Malaysia, Indonesia, and in other parts of the globe. Palm oil is the world's most widely consumed vegetable oil and is in about 50% of all packaged products at the supermarket.

Palm oil is a dark yellow/reddish oil of vegetable origin obtained by pressing or boiling the flesh of the fruit of the oil palm. Palm oil is one of the world's main sources of vegetable oil and fats, used in a variety of products. It is an important raw material in oleochemistry and is processed to produce edible fats such as margarine and shortening. It is also used in snacks such as ice cream and chocolate, and for soaps, candles, pharmaceuticals and cosmetics, lubricants, and transport biofuels.



TECHNICAL REPORT



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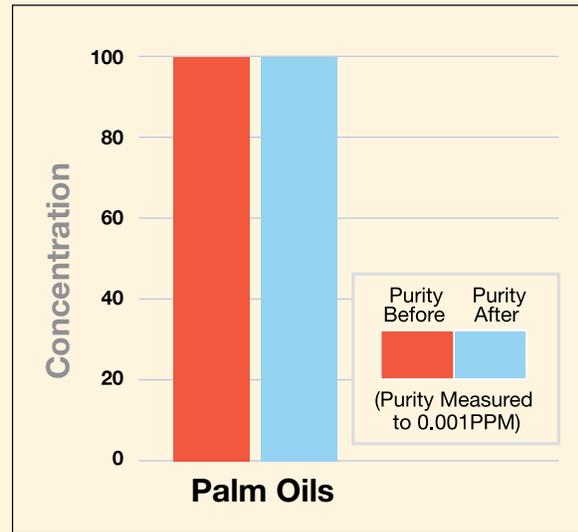
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Carriage of Palm Oils in MarineLine®-Coated Maritime Tankers

It is estimated from some industry sources that as much as 30% of the maritime chemical trade today comes from vegetable and palm oils. Maintaining high purity is very important in transporting palm oil. Exposure to light, oxidation, and moisture can lead to changes in odor, taste and color, causing product deterioration. Typically, cargo tanks are filled as full as possible to avoid these problems. Obviously maintaining and documenting strict loading, voyage and discharging temperatures are also vital to maintaining purity.

In addition, shipowners and operators specify the highly cross-linked MarineLine® cargo tank coating for safely carrying palm oil, due the coating's virtually non-permeable structure. According to a number of independent testing services (as shown in this chart), palm oils contained in MarineLine®-coated cargo tanks have maintained 100% purity (product purity measured to 0.001 PPM). In addition, MarineLine® is recognized as GRAS safe for food grade cargoes and the coating complies with the U.S. FDA and all applicable food additive regulations.

After palm oil carriage, MarineLine®-coated cargo tanks can be easily cleaned, so they are ready for another type of chemical service. MarineLine® is an excellent tank lining solution for palm oil and other edible oil carriage.



In tests certified or performed by DNV, Verway Labs and other independent labs, this chart illustrates the high level of purity maintained in a MarineLine®-coated cargo tank.

Contact APC

If you have a specific question on carrying palm oil in MarineLine®-coated tanks, contact your APC MarineLine® representative for more information.