

## DESCRIPTION

AMERGY 2020 very low-sulfur fuel oil (VLSFO) conditioner is a new fuel additive for treating stability and incompatibility issues in IMO 2020 compliant fuels, including marine residual (RM) and marine distillate (DM) fuel grades, and other fuels that have a maximum 0.5% sulfur content.

AMERGY 2020 contains a premium blend of fuel stabilizers and dispersants to minimize the effects of an unstable fuel as well as the incompatibility between two or more fuels. The precipitation and deposition of asphaltenes or sludge as a result of fuel instability or incompatibility can be greatly minimized or even eliminated with the use of AMERGY 2020.

Powerful corrosion inhibitors found in AMERGY 2020 help to protect fuel tanks and injection equipment against any corrosive components that may be detected by fuel analysis. AMERGY 2020 also contains proprietary detergents to prevent deposits from forming on fuel injection components and to help keep the entire fuel system clean.

## BACKGROUND

IMO 2020 compliant fuels (i.e., VLSFO-RM, VLSFO-DM, etc.) are likely comprised of a mixture of various blend components. Typically, the majority of these blend components consist of highly processed, low-sulfur residual and distillate streams, which can originate from several refinery units. Residual streams will tend to contain asphaltenes, which consist largely of condensed, aromatic ring structures. Residual components would subsequently be commingled with specific low-sulfur components by refiners, fuel traders, and/or physical bunker suppliers and treated with fuel stabilizers, as needed, to create table IMO 2020 compliant fuels.

On the supplier's side, depending on the quality of blend components and the efficacy of any fuel stabilizers used, even a stable fuel may become unstable after bunkering. As fuel is stored in vessel tanks, the effectiveness of any fuel stabilizers that may have been used beforehand gradually decreases. As a consequence, the fuel's reserve stability weakens, which can consequently lead to the formation of asphaltic sludge. Without the addition of fuel stabilizers to the fuel, the asphaltenes drop out and sludge formation may lead to the fouling of fuel tanks, piping, centrifuges, and/or filters.

## APPLICATION

Improving the solubility of asphaltenes between dissimilar and potentially incompatible fuels becomes essential when fuel segregation is not possible during bunkering (e.g., topping off) as well as during fuel switchover. The proprietary dispersants found in AMERGY 2020 maintain asphaltenes in suspension and prevents the asphaltenes from dropping out which consequently helps to minimize the formation of asphaltic sludge. The application of AMERGY 2020 in unstable and incompatible fuels restores fuel stability properties by providing excellent stability of asphaltenes. AMERGY 2020 maintains fuel stability for fuels held in extended storage.

Powerful detergents and corrosion inhibitors used in AMERGY 2020 clean, protect and maintain fuel injection equipment components free from deposits, varnishes, and/or lacquers that may arise from any possible chemical contamination in the fuel. Fuel contamination may inadvertently be present in fuel as water, acid wastes, used lube oils, bio-derived materials, and/or other chemical foulants.

## FEATURES

- Multi-functional additive formulated for IMO 2020 compliant fuels (i.e., VLSFO-RM, VLSFO-DM, etc.)
- Powerful fuel stabilizers and dispersants to prevent fuel instability and incompatibility by solubilizing asphaltenes
- Proprietary detergents to clean & to maintain surfaces free from deposits and other foulants as a result of fuel contamination
- Corrosion inhibitors to protect metal surfaces and to keep fuel systems clean
- Non-chlorinated chemistry

## BENEFITS

- Maintains tanks, heaters, & filters free from sludge and other types of organic deposits
- No storage stability problems for fuels held in extended storage
- Minimizes the effects of incompatibility as a result from fuel switch-over or tank top off
- Maintains and extends the life of fuel injection equipment
- Restores injection performance for optimized fuel metering and atomization
- Reduced hazards to human health and environment



Contact your Drew Marine representative for more information

## USE

It is recommended that AMERGY 2020 be metered continuously into the fuel. This is best accomplished by the use of a metering system (e.g., DREW Beta Metering System). Dosing in this manner assures proper mixing, dispersion, and sufficient quantities of AMERGY 2020 when needed. It is usually recommended that the product be dosed to the bunkerline or low-pressure side of the fuel treatment system, but the actual dosing location may vary depending on the fuel system layout and design.

Alternatively, AMERGY 2020 can be added to fuel tanks by directly adding it to nominated bunker tanks prior to fuel delivery (e.g., via sounding tube). This will ensure that AMERGY 2020 is properly mixed and dispersed throughout the fuel during bunkering.

It is recommended that fuel deliveries are representatively sampled and analyzed to monitor overall fuel quality and to determine levels of contamination. Consult your local Drew Marine representative for further discussion on fuel samplers and onboard fuel testing. For combustion improvements, the recommended AMERGY 222 PLUS dosage rate is as follows:

The dosage rate will vary depending upon the treatment schedule.

1. When used with each fuel delivery, AMERGY 2020 can be dosed in a range of 1/7,500 - 1/25,000 (1 liter to 7.5 - 25 tons of fuel). Table 1 offers a recommended dosage rate based on the Reserve Stability Number (RSN) as reported on your fuel analysis report. In absence of an RSN result, the recommended dosage rate based on the Spot Number result from Table 2 may be used.

**TABLE 1**

Reserve Stability Number	Dosage Rate
< 3	1:25,000
3-5	1:20,000
6-8	1:15,000
9-11	1:10,000
>11	1:7,500

2. AMERGY 2020 may be applied on a prescriptive basis with regular monitoring of each fuel delivery. The prescriptive application can consist of using the product only when the fuel fails one or more testing parameters (i.e., RSN > 5, H<sub>2</sub>O > 0.3%, etc.) or whenever a related problem or result from fuel contamination, incompatibility and/or instability arises.

Typically, the more severe the fuel quality-related problem, the higher the dosage rate of AMERGY 2020 that would be required. For further assistance, send a copy of your latest or problematic fuel analysis report to your respective Drew Marine representative to receive specific, prescriptive dosing guidance.

Use Table 2 to optimize the appropriate dosing rate determined from the fuel stability/compatibility spot number. Stability/compatibility may be quickly determined using the FO COMPATIBILITY TESTER, available from Drew Marine. (Refer to the FO COMPATIBILITY TESTER product data sheet for technical details and ordering information about that test kit.)

**TABLE 2**

Stability / Compatibility Spot Number	Dosage Rate
1	1:25,000
2	1:20,000
3	1:15,000
4	1:10,000
5	1:7,500

## TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Amber to dark brown
Density, kg/m <sup>3</sup> @22°C:	897.0
Viscosity, mm <sup>2</sup> /s @40°C:	7.8
Flash Point °C:	71.7°C

## PACKAGING

AMERGY 2020 is available in 25-liter containers (PCN 1412402).



Contact your Drew Marine representative for more information



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