

biototal marine

shipboard solutions

TECHNICAL DATA SHEET

BIOTAL ECOCLEAN 3000

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Biototal Ecoclean 3000 is a highly effective water-dilutable, non-solvent engine room cleaner based on safe eco-benign[®] chemistry combined with high performing bacteria strains to aid oily water treatment and biodegradation of oily residues. It is designed specifically for general engine room cleaning that will not have a negative effect on oily water separator operation.

Product Description

Biototal Ecoclean 3000 is a highly effective water-dilutable non-solvent engine room cleaner, specially formulated to remove oils, grease and other hydrocarbon soiling from surfaces.

The surfactant mix used in Biototal Ecoclean 3000 is extremely effective at lifting and emulsifying oils and other greasy deposits so that the hydrocarbon contamination is removed, but immediately after cleaning, the Biototal Ecoclean 3000 surfactant mix is also quick breaking; which means that when the solution reaches the bilges or the oily waste tank, the emulsion is unstable and the oil separates out from the water. Tests have shown that the Biototal Ecoclean 3000 does not promote emulsification over a wide range of concentrations. The use of Biototal Ecoclean 3000 as the only engine room cleaner is a way of minimizing emulsion problems caused by use of inappropriate cleaning products.

The 'cleaning and breaking' technology:

- The cleaning surfactant in Biototal Ecoclean 3000 has been formulated after screening many hundreds of formulae in order to obtain the best compromise between emulsifying properties at the in-use concentration for effective cleaning performance and quick breaking capability when diluted in the bilge for optimum Oily Water Separator (OWS) operation.
- "Cleaning" and "breaking" quickly are critical capabilities, since surfactants that do not break quickly will cause emulsification in bilges. This will have a detrimental effect on the OWS as emulsified oils reaching it can cause serious problems with its operational efficiency, meaning oily water cannot be processed and must be retained for on shore disposal.

The product also contains proprietary bacteria strains to assist the oil and water separation process. These bacteria do not degrade gross amounts of oil, but they are able to degrade the surfactants that stabilise the emulsion, and also remove emulsified oil from the water phase, as the oil is in very small droplets making it highly available for the biodegradation process.

Application Area

The process of cleaning oily soils in the engine room requires the soil to be emulsified into the water based cleaning liquid, but the majority of surfactants create very stable emulsions, which would then pose a real challenge for the oily water separator on board a ship. Many products currently sold for cleaning in the engine room have been shown to form very stable emulsions.

The majority of oily water separators on board ships are based on gravity separation of the two phases and cannot process emulsified oil, and if emulsification is present the machine does not achieve the 15ppm standard to allow discharge of oily water. The oily water must be retained on board ship, requiring increased amounts of storage facilities on board, and disposal in port facilities is an ever increasing cost for the ship operator.

Regulatory Environment

The most important regulations for preventing pollution by oil from ships are contained in Annex I of the International Convention for the Prevention of Pollution from Ships (MARPOL), 1973, as modified by the Protocol of 1978. Discharge of oil or oily mixtures from ship's machinery spaces, from any vessel, is prohibited unless the vessel is underway, the mixture has been treated by an approved oily water separator, and the oil content is below 15ppm. The authorities have shown a very strong commitment to detection of even the most minor violations of MARPOL Annex I. In addition to large fines amounting to literally millions of dollars, both company management and seafarers can be liable to criminal prosecution and imprisonment for any deliberate violation of Annex I.

Packaging

Biototal Ecoclean 3000 is supplied in 20 litre jerry cans as standard.

Biotal Ecoclean 3000: Features and Benefits

Features

- Aqueous, water-dilutable non-solvent formula
- Highly effective against a wide range of hydrocarbon soils but also quick breaking in the bilge or oily waste tank
- Contains no VOCs, solvents or phosphates
- All ingredients are highly biodegradable
- Specially selected bacteria for biodegradation of the surfactants that stabilise oil in water emulsions, and also hydrocarbons

Benefits

- Remove oils, grease and other hydrocarbon soiling from surfaces
- 'Clean and break' technology means product is highly bilge friendly
- Economic benefit by helping OWS to function well, thereby reducing volume of oily waste requiring disposal
- Does not interfere with operation of oily water monitors

Application/directions for use

General use:

- Mix 1 part Ecoclean 3000 with 15 parts water in manual sprayer
- Spray required areas
- Allow to stand for approximately 5-15 minutes, scrub or wipe if deposits are stubborn
- Rinse and allow waste to run off to bilges

Small quantities can also be used at a higher concentration for very difficult to remove materials

In pressure washers:

- Set pressure washer at 20:1 ratio
- Clean required areas
- Allow liquid to run off into drains or the bilge

For cleaning oily water separators (OWS):

- Secure discharge valves of OWS
- Work out or consult manual to find volume of separator, add 1/15th to 1/20th of the total volume of Ecoclean 3000 to the OWS
- Keep in system for approx 24 hours whilst recirculating, then allow to stand for a further 24 hours
- Transfer as normal through oil content monitor

Note: Overdosing or using higher than recommended concentrations can have a detrimental effect on the bilges