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**How do, Preserve The Living Seas, Eco Degreasers and Cleaners work.**

**Ecoworks Marine Bilge and Engine Cleaners.**

Are powerful water based degreasers and cleaners that are safe for the user as well as the environment. They combine an eco-friendly, heavy duty quick break degreasing surfactant system which provides effective wetting, penetrating, soil cutting and anti-redepositing action. In addition, the product contains a plant derived, carbon neutral, VOC free eco-solvent which provides the benefit of extra solvency power when cleaning and effectively replaces the need for more conventional and hazardous solvents. The botanical based solvent is produced from renewable resources and is based on 100% vegetable extract. It effectively, reduces the surface tension of the residual oily molecules enabling the rupturing of complex molecular chains into smaller particles. This increases the contact area, ultimately allowing quicker biodegradation.

**What is a Quick Break Degreaser?**

A quick break degreaser is a specially designed surfactant cleaning system which lifts oil, grease and other hydrocarbon soils from the cleaning surface without forming a permanent emulsion. Once the oil and water has been rinsed away the degreaser rapidly releases the oil again, allowing it to be separated. This ultimately means that wastewater with a permissible hydrocarbon content can be discharged in compliance with environmental and more specifically MARPOL Regulations.

In the case of overboard discharge, if this is done immediately following the cleaning process then the likelihood of the oily soils reforming is extremely unlikely as they will remain emulsified to some degree. As the discharge is diluted with the sea water, the oily soil particles are moved further apart, dramatically reducing the likelihood of them reforming and making them more readily accessible for the start of the microbial degradation process. Similarly, the surfactants themselves are rapidly biodegradable and quickly start to be broken down following their release.

**Why use a Quick Break Cleaner & Degreaser?**

The right choice of degreaser has a direct impact on wastewater quality, waste water compliance and disposal costs. The limits on oil, grease and hydrocarbon content in wastewater vary depending on whether the disposal is land or marine based but in all cases, regulations are very restrictive.

For wastewater oil content to be compliant it is usually necessary to process waste through an oil water separator prior to discharge. The ability of oil water separators to function effectively depends entirely on the nature of the wastewater itself. If oils are held in emulsion or dissolved within the wastewater by an emulsifying surfactant or solvent, an oil water separator will be almost completely ineffective.

For an oil water separator to function correctly, oil must be free to rise to the surface and coalesce into larger and larger droplets. Quick break degreasers only form a short-term oil emulsion which persists just long enough to remove the oil and grease from the cleaning surface. Once in the wastewater system, however, quick break degreasers quickly release these oils again where they float free and can be separated.

**What makes Ecoworks Marine Engine and Bilge Cleaner suitable for heavy duty cleaning and degreasing of bilge tanks?**

For optimal oil water separation and wastewater quality a marine cleaner and degreaser should:

* Be a quick break formulation
* Contain ecological and sustainable ingredients
* Have a moderate pH
* Be readily biodegradable
* Contain minimal additives such as builders, chelator, inhibitors, fragrances, dyes etc.
* Safe to use, store, handle and dispose of
* Safe to use on a range of surfaces

**Bio-Based, Colloidal Surfactant Degreasers**

Bio based, colloidal surfactants are the best choice of degreaser for optimal wastewater quality. Specialised formulations of advanced surfactants can be so effective at removing oil that they do away with the need for many of the less desirable ingredients in other cleaning and degreasing products.

When mixed with water these degreasing surfactants form a particular type of electrochemical structure called a “micelle”. These micelles energetically lift soils from cleaning surfaces with as much, or more power than harsh caustics, metasilicates, solvents and other salt-based cleaners. Thus, the advanced surfactant cleaning system effectively does away with the need for many of the less desirable ingredients in other degreasing cleaning products. Bilge Cleaner takes advantage of this unique micelle property. This specially formulated chemistry penetrates and lifts hydrocarbon soils including, oils, and hydrocarbons without creating permanent emulsions which can cause major issues for waste water systems and the environment.