Drew Marine Engine Room Maintenance Solutions

Maintenance chemicals and products for well-kept, safer, and more efficient engine rooms

Drew Marine

Reliability. Performance. Compliance.

DID YOU KNOW?

Engine room maintenance is monitored by Port State Control.

A well-kept engine room is vital to the safety of the crew and the vessel.

Based on statistical figures and according to class society DNV GL, a ship owner operating 20 vessels can expect one major engine room fire every 10 years.[1] In fact, most fires on board start in the engine room.

Owing to the multiple sources of heat available, a fire in the engine room can easily be sparked when oil or oily waste has been allowed to accumulate. Once started, engine room fires can spread quickly and can ultimately lead to loss of assets or loss of life.

Because improperly maintained engine rooms can lead to navigational failure or to engine room fires, Port State Control Inspectors typically will target engine room spaces during their onboard inspections, with particular emphasis placed on cleanliness. Indeed, engine room maintenance has been the focus of several Port States' Concentrated Inspection Campaigns. The engine room deficiencies most often reported as a result of these campaigns were either related to main engine propulsion issues or to engine room cleanliness.

In addition to preventing fires, a well-kept engine room can impede personal injuries. According to EMSA's Annual Overview of Marine Casualties and Incidents, 2015, slips, trips, and falls remain a leading cause of occupational injury in the maritime industry. Slippery and greasy decks and handrails can most certainly contribute to these injuries. To prevent fires or injuries in the engine room, it is essential to maintain high standards of cleanliness.

Reliability.

Performance.

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[1] *The Motorship, "Fire Statistics are good, but flooding still an issue." March 29, 2014, page 3.*

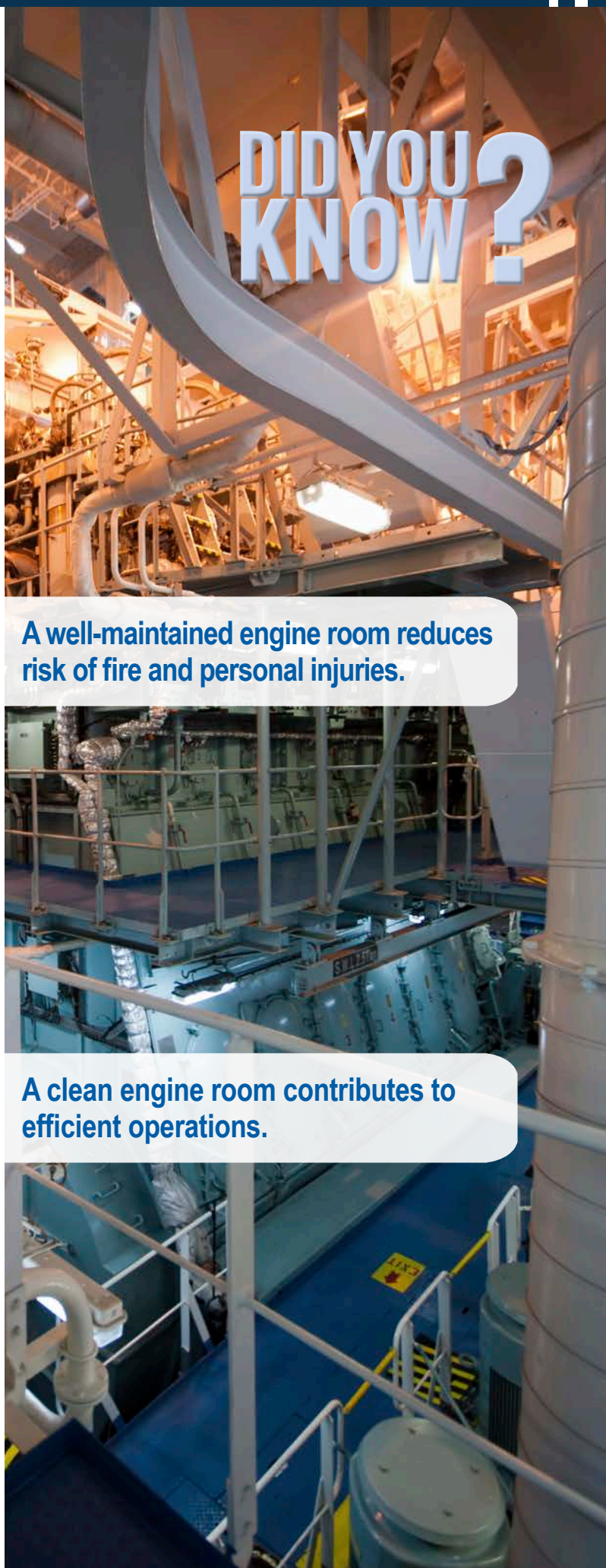
If cleaning regimens in the engine room are allowed to lapse or not carried out according to fixed schedules, cleanliness standards can slowly degrade. Over time, the degradation in standards can become the norm. If left unchecked, conditions can reach a point where the once highly maintained engine room has become an engine room vulnerable to fire propagation. A clean engine room is an essential barrier against shipboard fires and personal injury.

A clean engine room also contributes to efficient operations. A planned maintenance schedule for cleaning critical systems reduces energy consumption and wear and tear on critical equipment. Fouling of heat exchanges, boilers, distribution systems, storage tanks, and other systems contributes to higher energy consumption and cost increases and can cause deterioration of these systems. In the worst cases, full system shutdown and major repairs may be required when cleaning has been allowed to lapse.

Drew Marine is the premier supplier of maintenance cleaning chemicals and products to the marine industry. For decades, our products have been used by countless crew members to clean and maintain outstanding, well-kept, and efficient engine rooms. Many of our maintenance chemicals are recognized as industry standards.

Our global network of account executives and service engineers support the proper use of our products being used by crews. From cleaning baked-on carbons or mineral scale deposits in heat exchangers, to removing sludge build up in fuel tanks, to a myriad of other system cleanings, our account executives and service engineers can provide onboard cleaning guidance on the use of our complete line of engine room maintenance chemicals.

Drew Marine



I. ENGINE ROOM MAINTENANCE CHEMICALS – GENERAL

1.0 General Purpose Cleaning

ENVIROMATE 2000

ENVIROMATE 2000 is a water-based cleaner formulated to meet the marine industry's strict requirements for safety and performance. ENVIROMATE 2000, with its unique blend of cleaning agents, is a non-flammable, general purpose cleaner perfect for a broad range of surface, deck, engine, and offshore applications. This product is also suitable and recommended for ultrasonic cleaning applications.

1.1 Heavy Duty Cleaning

EDGE

EDGE is a multi-purpose heavy duty cleaner specifically formulated to meet the marine industry's requirements for cleaning action, safety and environmental considerations. This product combines heavy-duty cleaning ingredients with fast penetrating wetting agents. This combination of ingredients provides the power needed to remove stubborn soils, while remaining mild enough not to harm most surfaces. EDGE heavy-duty cleaner provides an excellent alternative to traditional solvent-based and highly alkaline cleaners.

1.2 General Purpose Degreasing

DREWCLEAN 3000

DREWCLEAN 3000 is a heavy duty liquid degreaser with a fresh scent. It easily removes fresh and aged oily soils. It is recommended for cleaning and degreasing engine rooms, tank tops, and bilges, as well as for cleaning bulkheads and other shipboard surfaces from grease and oily soils. DREWCLEAN 3000 is non-corrosive and consequently can be safely used on painted and unpainted metal surfaces. It contains no chlorinated solvents or surfactants.

O&GR

O&GR oil and grease remover is a blend of active cleaning agents and emulsifying solvents. It penetrates and dissolves grease, oil and grimy soils forming a soluble mixture which can be rinsed away with water. O&GR can be used as a cleaner for metal, parts and tools, painted and unpainted surfaces, decks, bulkheads, machinery, engines and wherever grease, oil and grimy soils are a problem. For oil and grease removal, an alternative to O&GR is DREWCLEAN 3000.

1.3 Bilge Cleaning

DREWCLEAN 3000

DREWCLEAN 3000 is a heavy duty liquid degreaser with a fresh scent. It easily removes fresh and aged oily soils. It is recommended for cleaning and degreasing engine rooms, tank tops, and biles, as well as for cleaning bulkheads and other shipboard surfaces from grease and oily soils. DREWCLEAN 3000 is non-corrosive and consequently can be safely used on painted and unpainted metal surfaces. It contains no chlorinated solvents or surfactants.

AMEROID OWS

AMEROID OWS is a quick separating, superior solvent emulsifying detergent for general engine room degreasing and for cleaning and gas freeing of bilges. AMEROID OWS has exceptional cleaning properties, breaks quickly, and does not harm the operation of oily water separators required under the MARPOL regulations.

1.4 Rust/Rust Stain Removal

AMEROID RSR

AMEROID RSR is a liquid combination of a rust-dissolving acid, an emulsifier and a passivator for removing rust and rust stains, and passivating iron and steel surfaces.

I. ENGINE ROOM MAINTENANCE CHEMICALS – GENERAL

1.5 Steel Precoating Preparation

DREWTAN RC

DREWTAN RC can be used on rusted steel and sand-blasted steel as a pre-coating preparation. DREWTAN RC forms a water insoluble black film which prevents moisture from penetrating into the metal surface. It is compatible with most paint types and coating systems, such as alkyd systems, modified alkyds, chlorinated rubber, epoxies, polyurethanes, and vinyls. The product is non-flammable and the dry film is fire retardant.

1.6 Hand Cleaning

CREWCAREDM HC

CREWCAREDM HC is a powerful hand cleaner formulated with aloe vera extracts, jojoba esters and citrus oils. CREWCAREDM HC contains exfoliants that remove extremely stubborn industrial soils such as lubricants, grease, varnish, ink, tar, bitumen and adhesives. The action of the beads cleans and conditions the skin and aids in the removal of soils.

II. CORE EQUIPMENT – ROUTINE CLEANING

2.0 Air Cooler Cleaning

ACC/ME

ACC/ME is a patented, stable micro-emulsion cleaner, which, when sprayed on soiled parts of a marine diesel charge air cooler, penetrates and dissolves accumulated deposits, oil and grease. ACC/ME can be used for "in-service" cleaning or by spraying or soaking air coolers out of service. ACC/ME does not contain any chlorinated solvents. The product is free-rinsing, leaving no sticky residue. Its features result in improved combustion, air cooling, and engine performance. ACC/ME is recommended when a reduction in the onboard use of chlorinated solvents is preferred.

ACC-9

ACC-9 is Drew Marine's traditional cleaner for air coolers. ACC-9 is a combination of non-abrasive, non-corrosive solvents, detergents and inhibitors. When sprayed on soiled parts of an air cooler, ACC-9 penetrates and dissolves accumulated deposits, oil and grease so they can be removed by blowing with compressed air or rinsing with a stream of water. ACC-9 is highly effective at removing deposits, oil, and grease from air coolers as well as all types of engine parts. Its use results in improved combustion, air cooling, and engine performance.

2.1 Descaling

SAF-ACID

SAF-ACID is a special blend of sulfamic acid, wetting agent and color indicator. The wetting agent enhances the action of the sulfamic acid in removing deposits by its surface-active cleaning properties. The color indicator provides a simple means for determining whether the strength of the SAF-ACID solution is adequate for effective, efficient cleaning. SAF-ACID is recommended for removing mineral scale deposits from evaporators, heat exchanger heat transfer surfaces, and boilers. It is also effective in removing iron deposits when used in combination with salt. SAF-ACID descaling compound is effective in removing shell growth from seawater heat exchangers. SAF-ACID is Drew Marine's recommend descaler.

DESCALE-IT

DESCALE-IT is a liquid acid used to remove scale and corrosion deposits from heat exchanges and piping systems. The use of DESCALE-IT eliminates costly downtime and expensive manual descaling. The inhibitor contained in DESCALE-IT prevents serious attack of the base metal after removal of heat exchanger deposits is complete. DESCALE-IT is recommended for descaling boilers, evaporators, condensers, heaters and coolers.

2.2 Electrical Equipment Cleaning

DREW ELECTRIC 2000

DREW ELECTRIC 2000 is a highly efficient, non-chlorinated solvent designed to be used in electric parts cleaning applications that require deep penetration with a controlled evaporation rate. It is economical to use and can be applied on large motors, generators, and electrical apparatus, as well as smaller equipment. DREW ELECTRIC 2000 cleaner has a high dielectric strength and low non-volatile residue value.

DREW ELECTRIC FAST DRY

DREW ELECTRIC FAST DRY is a highly efficient non-chlorinated solvent, specially designed for motor and electrical parts cleaning. It dissolves and cleans grease, tar, wax, and oil from electrical equipment and parts upon contact. It dries in SECONDS, and leaves virtually no residue. It is safe on most metals, including aluminum, and insulation materials used in marine motors and switch gears. DREW ELECTRIC FAST DRY has a high dielectric strength, low non-volatile residue value, very fast drying time, and an efficient cleaning effect.

II. CORE EQUIPMENT – ROUTINE CLEANING

2.3 Filter Cleaning

SNC 2000

SNC 2000 is a hydrocarbon solvent blend specially designed to remove baked on and carbonized soils on valves, burner tips and other engine parts and filters. SNC 2000 does not contain any cresylic acid or chlorinated solvents. SNC 2000 penetrates deposits and dissolves oil, grease, varnish and combustion products. Insoluble materials (e.g., carbon, soot, ash, dirt) are softened so they can easily be removed with a water rinse. SNC 2000 is recommended when a reduction in the onboard use of chlorinated solvents, a reduction in the onboard use of cresylic acid, and the use of a high flashpoint, low odor solvent is preferred.

DREW FC

DREW FC is a non-corrosive filter cleaning agent. This product is used for the removal of partially carbonized oils using a circulation method. DREW FC is mainly used for the cleaning of permanently fixed oil coolers, oil preheaters and metal/ceramic oil filters. These units are regularly contaminated by particles in the oil and partially carbonized oils. Timely cleaning prevents the formation of coke-like adherents which are difficult to remove. An alternative to DREW FC is SNC 2000.

2.4 Parts and Engine Cleaning

SNC 2000

SNC 2000 is a hydrocarbon solvent blend specially designed to remove baked on and carbonized soils on valves, burner tips and other engine parts and filters. SNC 2000 does not contain any cresylic acid or chlorinated solvents. SNC 2000 penetrates deposits and dissolves oil, grease, varnish and combustion products. Insoluble materials (e.g., carbon, soot, ash, dirt) are softened so they can easily be removed with a water rinse. SNC 2000 is recommended when a reduction in the onboard use of chlorinated solvents, a reduction in the onboard use of cresylic acid, and the use of a high flashpoint, low odor solvent is preferred.

DREWFRESH 2000

DREWFRESH 2000 is a high-performing micro-emulsion cleaner containing biodegradable components. This patented composition is designed especially for removing difficult to remove baked-on oils, carbonized deposits and heavy greases. DREWFRESH 2000 can be used neat or diluted with fresh or sea water. It is safe for ferrous and non-ferrous metals.

CARBON REMOVER

CARBON REMOVER is a combination of highly active, fast-penetrating solvents with selected detergents and corrosion inhibitors designed to remove carbon deposits, varnish, gummy matter, etc., from diesel engine pistons, rings, valves and other parts where oil combustion fouling accumulates. CARBON REMOVER penetrates deposits and dissolves oil, grease, varnish and most products of incomplete combustion. Insoluble mineral matter (e.g., carbon, soot, ash, dirt) is softened so that it can easily be removed with a water rinse. An alternative to CARBON REMOVER is SNC 2000.

ACC-9

ACC-9 is Drew Marine's traditional cleaner for air coolers. ACC-9 is a combination of non-abrasive, non-corrosive solvents, detergents and inhibitors. When sprayed on soiled parts of an air cooler, ACC-9 penetrates and dissolves accumulated deposits, oil and grease so they can be removed by blowing with compressed air or rinsing with a stream of water. ACC-9 is highly effective at removing deposits, oil, and grease from air coolers as well as all types of engine parts.

2.4 Parts and Engine Cleaning (continued)

ACC/ME

ACC/ME is a patented, stable micro-emulsion cleaner, which, when sprayed on soiled parts of a marine diesel charge air cooler, penetrates and dissolves accumulated deposits, oil and grease. ACC/ME can be used for "in-service" cleaning or by spraying or soaking air coolers out of service. ACC/ME does not contain any chlorinated solvents. The product is free-rinsing, leaving no sticky residue, and these features result in improved combustion air, cooling and engine performance. ACC/ME is recommended when a reduction in the onboard use of chlorinated solvents, a reduction in odors, and a reduction in the amount of sludge formation during the cleaning operation is preferred.

ENVIROCARE 370

ENVIROCARE 370 is a solvent-based coal tar solubilizer and emulsion cleaner, containing a blend of aromatic hydrocarbons and surface-active agents. It is used for the removal of coal tar, crude, benzene, bitumen and similar substances. ENVIROCARE 370 is an economical cleaner which can be used for cleaning heavily contaminated metal parts as well as for tank cleaning. Upon sitting, a solution of water and ENVIROCARE 370 heavy-duty solvent cleaner cleaning agent will separate, leaving water at the top while the cleaner and contaminants settle at the bottom of the tank.

DREW ELECTRIC 2000

DREW ELECTRIC 2000 is a highly efficient, non-chlorinated solvent designed to be used in electric parts cleaning applications that require deep penetration with a controlled evaporation rate. It is economical to use and can be applied on large motors, generators, and electrical apparatus, as well as smaller equipment. DREW ELECTRIC 2000 has a high dielectric strength and low non-volatile residue value, which has made it an excellent replacement for 1-1-1 TCE-based products.

DREW ELECTRIC FAST DRY

DREW ELECTRIC FAST DRY is a highly efficient non-chlorinated solvent, specially designed for motor and electrical parts cleaning. It dissolves and cleans grease, tar, wax, and oil from electrical equipment and parts upon contact. It dries in SECONDS, and leaves virtually no residue. It is safe on most metals, including aluminum, and insulation materials used in marine motors and switch gears. DREW ELECTRIC FAST DRY motor and parts cleaner has a high dielectric strength, low non-volatile residue value, very fast drying time, and an efficient cleaning effect.

Drew Marine's engine room maintenance solutions improve operations efficiency.

II. CORE EQUIPMENT – ROUTINE CLEANING

2.5 Purifier Disc Cleaner

AMEROID DC

AMEROID DC is a specially formulated blend of surfactants, solvents and acids designed to remove carbonaceous and varnish deposits from lube and fuel oil separator discs. AMEROID DC has proven its effectiveness when fuel incompatibility and increased sludge formation occur. Compatibility-related problems stemming from fuel switch-over—from high sulphur to low sulphur fuels—have led to increased sludge formation. Incompatibility and the resulting sludge formation increase the requirement for separator cleaning. AMEROID DC has proven to be a highly effective maintenance solution where crew members are under pressure to clean their separators more quickly and more often.

2.6 Ultrasonic Tank Cleaning

ENVIROMATE 2000

ENVIROMATE 2000 is a water-based cleaner formulated to meet the marine industry's strict requirements for safety and performance. ENVIROMATE 2000, with its unique blend of cleaning agents, is a non-flammable, general purpose cleaner perfect for a broad range of surface, deck, engine, and offshore applications. This product is also suitable and recommended for ultrasonic cleaning applications.

III. MAJOR EQUIPMENT CLEANING – UPSETS

3.0 Iron Oxide Cleaning – Engine

FERROCLEAN

FERROCLEAN is a unique, patented, highly effective water-based cleaner containing penetrating, dissolving and dispersing agents. FERROCLEAN removes, dissolves and disperses iron oxide deposits from diesel cooling water systems while providing a temporary passivating film to protect the base metal from corrosion. FERROCLEAN was developed as a technical alternative to traditional acid based cleaners used for iron oxide removal. Iron fouling in cooling water systems can negatively affect the overall operation of the system resulting in reduced operating efficiency, increased maintenance costs and downtime as well as shortened equipment life.

3.1 Removal of Scale – Engine, Boiler, Economizer

SAF-ACID

SAF-ACID is a special blend of sulfamic acid, wetting agents and a color indicator. The wetting agent enhances the action of the sulfamic acid in removing deposits by its surface-active cleaning properties. The color indicator provides a simple means for determining whether the strength of the SAF-ACID solution is adequate for effective, efficient cleaning. SAF-ACID is recommended for removing mineral scale deposits from evaporators, heat exchanger heat transfer surfaces, and boilers. It is also effective in removing iron deposits when used in combination with salt. SAF-ACID descaling compound is effective in removing shell growth from seawater heat exchangers. SAF-ACID is Drew Marine's recommend descaler.

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3.2 Removal of Oily Deposits – Engine, Boiler, Economizer

HDE 777

HDE-777 is a low-foaming solvent emulsifier cleaner used for cleaning marine equipment that is seriously contaminated with fuel or lubricating oils. Oil deposits can be removed from boilers, L.P. steam generators, etc., by circulating a 2-5% solution of HDE-777 emulsifier through the equipment. HDE-777 emulsifier should never be used as an on-line cleaner; all cleaning should be done off-line.

3.3 Removal of Baked on Oil

FOT

FOT is a highly effective blend of self-dispersing solvents, surfactants, detergents and emulsifying agents. FOT is highly effective for removing baked on oil from oil-fired boilers. For more information contact your Drew Marine Representative.

DID YOU KNOW?

Drew Marine's engine room maintenance solutions can remove downtime costs.

IV. SANITATION SYSTEM MANAGEMENT

4.0 Organic Waste Management

ENVIROCARE VTC 4000

ENVIROCARE VTC 4000 is a unique blend of superior surfactants and specially selected bacteria designed to clean the toilet bowl and help prevent the formation of organic pipe blockages in waste systems. When used regularly, ENVIROCARE VTC 4000 will dissolve and reduce the typical biological build-up in waste systems. Regular use will prevent the biological build-up from redepositing on distribution piping, thereby increasing the overall efficacy of such systems.

ENVIROCARE WTE

ENVIROCARE WTE is a concentrated, synergistic blend of specialized bacteria strains scientifically developed to promote the rapid breakdown and digestion of various forms of black and grey water waste, including detergents, greases, fats, oils, paper, and other organic materials commonly found in marine sanitation devices. ENVIROCARE WTE helps to maintain marine sanitation devices, holding tanks, and sanitary systems operating at peak efficiency. When used regularly, ENVIROCARE WTE will continually promote the presence of powerful waste-degrading bacteria, ensuring the waste treatment system is biologically active. ENVIROCARE WTE reduces the buildup of sludge and deposits in holding tanks, vacuum tanks and equipment, and assists in keeping the waste treatment system running efficiently.

ENVIROCARE DLC

ENVIROCARE DLC drain line cleaner is a mixture of specially selected high performance bacterial strains and biodegradable surfactants formulated to degrade fats, oils, food-related greases, and general organic buildup in grease traps and graywater drain lines. The surfactants provide added detergency and cleaning power. When used regularly for preventative maintenance, ENVIROCARE DLC effectively eliminates odors and organic build-up in shower and galley drains and pipes as well as in pulper systems.

IV. SANITATION SYSTEM MANAGEMENT

4.1 Scale Removal

ENVIROCARE CF3000

Drew Marine's product, ENVIROCARE CF3000, is a descaling cleaner that effectively removes toilet bowl stains and waterside deposits, including mineral scale and metal oxides, in vacuum toilet systems and piping. ENVIROCARE CF3000 is fast-acting and water soluble. When used as directed, ENVIROCARE CF3000 prevents the formation of mineral scale in the effluent black water pipe system.

WHY CHOOSE DREW MARINE?

- Customer focused
- Knowledgeable account manager
- Global supply chain
- Onboard technical support
- Application know-how
- Regulatory support

V. CLEANING SYSTEMS

5.0 Ultrasonic Tanks

DREW ULTRASONIC TANKS are complementary to the chemical cleaning products of Drew Marine. They are designed for modern shipboard maintenance where highly effective cleaning results are required with little manual intervention. The tanks are made from 316 stainless steel, delivered complete with a stainless steel basket and lid. Heating and temperature controls are easily accessed.

Ultrasonic cleaning works on the principle of cavitation. High frequency (28 kHz) sound waves are generated and introduced in the cleaning liquid. The process of ultrasound creates numerous tiny vacuum bubbles in the cleaning solution which consequently implode. The energy released when these tiny bubbles implode on the surface of parts exposed to the cleaning solution causes an extremely effective cleaning force.

Drew Marine's recommended cleaner for Ultrasonic Tank Cleaning is ENVIROMATE 2000.

VI. SEALING PRODUCTS

6.0 Packing & Jointing Products

Drew Marine offers sealing technology that meets the rigid demands and high standards of the marine industry. We deliver high-quality, non-asbestos packing and jointing products that extend the service life of critical equipment and help minimize maintenance costs. We offer a complete line of standardized compression packing and sheet jointing. We can also engineer customized solutions for special requirements.

Wherever your vessels are calling, our worldwide distribution network and our technical support network ensure prompt resupply and application support for all our maintenance chemicals and products. For more information about the products in this brochure or for ordering information, contact your Drew Marine Representative.

Drew Marine — Vision and Mission

Our Vision

Drew Marine is the most trusted brand and preferred global resource for marine solutions that enhance the longevity and operating efficiency of ocean vessels.

Our Mission

To sustain the superiority of the Drew Marine brand by bringing environmentally and technologically superior products and services for the benefit of vessel owners and operators while increasing shareholder value.

Drew Marine

www.drew-marine.com