



SEAWOLF

MARINE CHEMICALS

ANMAR ENDÜSTRİYEL KİMYA SAN. ve TİC. LTD. ŞTİ.

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About Us

With an experience of more than 15 years, we are a young and highly motivated international team starting up as SEA-WOLF Marine Chemicals. Our priorities are in excellent service and emergency service, best product-price range, best enviromental conditions and finally in our international presence at different ports of the world. Since we are the producer, it is essential to us that our quality is certified by IMO and ISO 9001-14001.

SUPPLY PORTS

Turkey (All Ports)	Algeciras
Rotterdam	Piraeus
Suez	Panama
Mumbai	New Orleans
Durban	Singapur
Fujairah	Shangai
Gibraltar	Genova



Global Solutions



Experience



Customer Satisfaction



Fast Service



High Quality



WATER TREATMENT

* BOILER WATER TREATMENT	04-09
* COOLING WATER TREATMENT	10-14
* SEWAGE TREATMENT	15-17
* POTABLE WATER TREATMENT	18-20



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BT-01 – Boiler Water Treatment

Description:

BT-01 is a liquid blend of alkaline mineral salts, scale and corrosion inhibitors, oxygen scavenger and sludge conditioner.

Features:

BT-01 is suitable for use with all auxiliary boilers including waste heat, and exhaust gas boilers. Prevents scale formation and inhibits corrosion. Condition sludge/sediment particles to render non-adhering and to enable effective removal by routine blowdown.

Benefits:

- Saves up fuel and extends boiler's lifecycle: With scabs reducing heat transfer, a greater amount of fuel is consumed for unit vapor generation, which also causes boiler to consume more energy. BT-01 prevents scab formation and ensures saving up energy as well as expands stand-by period of boiler, which avoids wear and tear of the boiler.

- Reduces costs and extends boiler life: Corrosion causes holes in metal surfaces. Holes caused by corrosion in heaters and serpentines, in particular, lead to serious risks such as fuel or oil leakage to the boiler. These situations require high cost cleaning applications. Use of BT-01 avoids corrosion and saves up costs plus extends life cycles of boiler and all other circuit elements.

Usage:

For optimum results, BT-01 should be dosed directly into the boiler via a by-pass pot feeder installed in the boiler feed line. For low-pressure boilers without by-pass feeder, the product may be dosed into the hot well. Regular blow-down is necessary to remove sludge and solids.

P-Alkalinity ppm CaCO ₃	0	50	100	150	200	225	250	300	350
BT-01 (lt. per ton)	1	0,6	0,3	0	0	0	0	0	Blow-down

Initial dose for untreated system is 1 lt. of BT-01 per 1000 lt. water.

Recommended Limits

P-Alkalinity: 100-300 ppm CaCO₃

Condensate pH: 9-10

Chloride: Max.200 ppm Cl

Further Technical Data:

Form	Liquid
Appearance	Pale Yellow
Density	1,25
pH	13
Non Compatible Avoid aluminium, zinc and galvanised steel	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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BT-02 – Alkalinity Control

Description:

BT-02 is an excellent, strong alkaline boiler water treatment developed for use in the control of feedwater pH, neutralising any acid present and contributing to alkalinity levels. BT-02 also contains sludge conditioning and scale preventing polymers specially selected for their suitability for high temperature boiler applications.

Features:

BT-02 is added to the boiler water to maintain a optimum alkalinity level to prevent corrosion. Assists in precipitation and blowdown of magnesium and calcium salts. Neutralises acid conditions. Can be used in boilers of all pressures

Benefits:

Ensures a longer beneficial lifecycle for boilers and prevents corrosion. Maintains alkaline level. Can be used as a neutralizer after cleaning with acid-based chemicals. Doesn't require blow-down and saves up water. Allows efficiency to be maintained, and reduces maintenance

Usage:

BT-02 should be dosed directly into the boiler via a by-pass pot feeder installed in the boiler feed line. For low pressure boilers without by-pass feeder, the product may be dosed into the hot well.

Initial dosage for untreated water is 250 ml of BT-02 per ton of water.

P-Alkalinity level must be maintained:

- For low pressure boiler (max 28 bar) between 120 and 180 PPM.

- For medium pressure boiler (28-57 bar) between 80 and 120 PPM.

- For high pressure boiler (57-102 bar) up to 50 PPM.

- The normal method of raising alkalinity level is by adding the required quantity of BT-02 after testing for P-alkalinity, 0,25 ml will raise P-Alkalinity by 70 PPM.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,30
pH	14
Non Compatible aluminium, magnesium, zinc and tin	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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BT-03 – Condansate Control

Description:

BT-03 is a liquid blend of neutralising amines applied for the protection of steam and condensate pipework.

Features & Benefits:

Protects steam and condensate lines against corrosion. Extends beneficial lifecycle of steam and condensation lines, by protecting metal surfaces. Neutralizes acidic conditions occurring in condensate system.

Usage:

BT-03 should be applied with pH control along condensation line. Recommended pH range is 8,3 – 9. A typical dosage for a 10 ton system would require 2,5 lt. per day. Increase or decrease the dosage with 25% if the daily dosage does not result in the required pH value. BT-03 is dosed via; A chemical by-pass pot feeder equipped along feed pump suction line. A dosing pump equipped along feed or condensation line.

Further Technical Data:

Form	Liquid
Appearance	Colourless
Density	1,0
pH	13
Non Compatible Aluminium, Copper, Brass, Fiberglass, Galvanised Steel (Zinc)	

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Material Safety Data Sheet and / or Product label.



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BT-04 – Hardness Control

Description:

BT-04 is a dry powder product used for hardness reduction and phosphate control in boiling water systems.

Features:

This product is formulated to give an optimum phosphate level within boiler water systems. This ensures correct hardness levels at all times.

Benefits:

Eliminates calcium scale problems. Phosphate levels are optimised. Hardness salt forms are easily removed by blow down.

Usage:

Initial dosage for untreated water is 100 gr of BT-04 per tonn. of water. Dosage will be increased or reduced in accordance with result of Hardness and phosphates test. Keep in mind the following recommended limits:

- Hardness value must be zero
- Phosphate value 10/25 PPm for high pressure boiler, for low pressure boiler, 20/40.

Further Technical Data:

Form	Liquid
Appearance	Colourless
Density	1,05
pH	8
Non Compatible aluminium, magnesium, zinc and tin	

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Material Safety Data Sheet and / or Product label.



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BT-05 – Oxygen Control

Description:

BT-05 is a liquid sodium sulphite product used for oxygen scavenging in low and medium pressure boilers.

Features:

BT-05 reacts rapidly with dissolved oxygen in the boiler to form inert sodium sulphate. this prevents damage caused by oxygen pitting and corrosion in the boiler.

Oxygen Scavenger is a convenient to use liquid oxygen scavenger recommended for the complete removal of oxygen from deaerator heaters, feedwater storage areas, feedwater lines, condensate return lines, boiler internals and closed recirculating water systems.

Benefits:

The interior of the boiler is protected from oxygen corrosion attack. However please note that extra solids are produced in the process so additional blow-down will be required.

Usage:

A reserve of 30-50ppm sulphite should be maintained in the boiler. BT-05 should be dosed continuously to the boiler by means of a metering pump into the feed line after the recirculation line. Continuous dosing can also be achieved by dosing into the hotwell to a point as close to the feed water pump suction as possible, although efficiency is adversely affected by low hotwell temperatures. BT-05 should be dosed at a rate of 80-90 ml. / ton if liquid, at 45-50 gr. / ton if powder. This is the dosage required to maintain the desired 20 - 30 mg. / lt. of sodium sulfite in the boiler. The target usage is 30-50 ppm of sulphite. The product should be applied separately to CONDENSATE CONTROLLER and should not be mixed with any alkaline treatment.

Further Technical Data:

Form	Liquid
Appearance	Pale yellow
Density	1,3
pH	5

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.

BT-06 – Boiler Coagulant

Description:

BT-06 is a liquid sludge conditioner designed to prevent the formation of solid and sticky deposits in boilers.

Features:

BT-06 prevents the formation of sludge deposits on boiler internal surfaces. The sludge is kept dispersed in small particles and conditioned to be removed by normal blowdown. In this way tube overheating due to sludge deposition is avoided. The treatment can be used in conjunction with other chemical treatments.

BT-06 can also be used where oil contamination has been experienced, the oil being required to be coagulated for removal by blowdown. However, it must be noted that if oil contamination is continuous and excessive then offline cleaning will be required. The source of oil contamination must be stopped immediately.

Benefits:

BT-06 prevents the formation of adherent deposits and sledges in boilers and thereby reduces clean-downs.

Usage:

Normal dosage is 20ml daily/tonne of boiler water capacity. Typically this equates to 0,1-0,3 litres/day. This is the recommended initial dose. BT-06 should be dosed directly to the boiler via the bypass pot feeder installed in the boiler feed water line.

Further Technical Data:

Form	Liquid
Appearance	Yellow
Density	1,15
pH	4

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Material Safety Data Sheet and / or Product label.



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CT-01 – Nitrite Base Anticorrosion For Closed Circuit Cooling Water Systems

Description:

CT-01 is a nitrite and organics based corrosion inhibitor suitable for all types of engines and other closed re-circulating water systems.

Features:

CT-01 is a highly effective corrosion inhibitor for all types of cooling water systems using distilled or fresh water. The stable microfilmcoating that is provided prevents electrolytic corrosion, cavitational corrosion and controls scale and sludge in the system.

Benefits:

Contains dispersant for cleaner and more efficient cooling systems. It is also compatible with a wide range of hoses, gaskets and seals. Compatible with anti-freeze solutions.

Usage:

Initial dosage for an untreated system is 10 litres of CT-01 or 1,80 kg CT-01 POWDER/1000 litres of untreated distilled feed water. This will bring the treatment up to a suitable minimum level of 1000 ppm nitrite.

The dosage chart given below is for convenience in calculating the amount required to bring the level to the suitable point between the minimum and maximum - this being 1500 ppm nitrite.

Normal nitrite limits: - 1200 - 2000 ppm nitrite (NO₂).

Nitrite ppm NO ₂	0	200	400	600	800	1000	1200	1500	2000
CT-01 litres/1000 litres	6	5,2	4,4	3,6	2,8	2,0	1,2	0	0
CT-01 POWDER kg /1000 Litres	2	1,80	1,40	1,00	0,40	0,35	0,15	0	0

The condition of the cooling water treated with CT-01, should be within the following recommendation:

Nitrite: 1200 - 2000 PPM

Chloride: Below 100 PPM Cl

Hardness: Below 180 PPM CaCO₃

pH: 8,5 - 9,5

Further Technical Data:

Form	Liquid and Powder
Appearance	Pale Yellow
Density	1,10 (Liquid) – 1,05 (Powder)
pH	8 - 9
Non Compatible Avoid contact with zinc and aluminium	

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Material Safety Data Sheet and / or Product label.



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CT-02 – Diesel Cooling Water Corrosion Inhibitor (Safe for Ferrous Metals, Copper Alloys and Aluminium

Description:

Engine Water Treatment CT-02 contains a balanced mixture of corrosion inhibitors in liquid form, together with an antisclant. CT-02 is formulated to protect systems containing aluminium components.

Features:

The product is particularly effective at preventing corrosion in engine cooling systems. Protects all metals (including aluminium) in engine cooling systems from corrosion attack. CT-02 protects ferrous metals, copper alloys, lead, solder and aluminum, while not affecting rubber gaskets or hoses. The products is effective in hot and cold water and is compatible with glycol / antifreeze solutions.

Benefits:

Effective corrosion inhibitor of ferrous and non-ferrous metals, including aluminum. Controls formation of deposits. Keeps system free of sludge and scale. Does not affect gaskets or hoses. Contains specific copper corrosion inhibitor. Compatible with anti-freeze solution. Supplied in liquid form. Discourages bacteria in cooling water system.

Usage:

CT-02 should be dosed directly to the cooling system at the rate of 8 liters per m³ of water to give the correct product reserve of 700 to 1000ppm Nitrite (1000 to 1500ppm as Sodium Nitrite). CT-02 should be introduced after circulation of the cooling water has begun and is best added by means of a feeder installed on a bypass to the circulating system, or connected to a suitable dosing pump and storage tank.

Nitrite ppm	0	150	375	750	975	1000
CT-02 litres/1000 litres	8	4	3,5	2	0,25	0

Hardness: max. 180 PPM CaCO₃

pH: approx. 11

Further Technical Data:

Form	Liquid
Appearance	Colourless
Density	1,11
pH	8

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Material Safety Data Sheet and / or Product label.



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CT-03 – Antifreeze

Description:

CT-03 is an Ethylene Glycol based anti-freeze, which contains inhibitors to protect radiators and engines, including aluminium engines, against rust and corrosion.

Features&Benefits:

The anti-freeze should be left in cooling systems throughout the year and will thus give all year round corrosion protection. CT-03 contains no methanol and has a low flammability. It is biodegradable and does not present an environmental problem.

Usage:

A 25% solution (1 part anti-freeze to 3 parts water) will remain fluid down to -14°C . In severe winter conditions, increase to a 33% solution (1 part anti-freeze to 2 parts water) to give protection down to -17°C .

Further Technical Data:

Form	Liquid
Appearance	Red
Density	1,1
pH	-

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CT-04 – Liquid Evaporator Treatment For Evaporators

Description:

A Polymer- based additive to be used in Evaporators to prevent Scale Formation.

Features:

CT-04 is a liquid based on a low molecular weight polyacrylate which inhibits the formation of carbonate and sulphate scale deposits. In addition CT-04 will inhibit the deposition of precipitates by keeping them dispersed and conditioned to be removed by blowdown. CT-04 remains stable at high temperatures and does not hydrolyse & become ineffective.

Benefits:

Safe to use with evaporators where distillate is used for drinking purposes. Maintains optimum evaporator performance. Prevents scale formation and avoids the need for acid descaling. Reduces foaming and carry-over into the distillate. Does not contain phosphates. Not detrimental to distillate purity.

Usage:

The standard dosage applicable to the majority of systems is, 0,030 (30ml) litres of CT-04 per Tonne of distillate produced. This is based on the rated production capacity of the evaporator.

The treatment is added to the dosage tank & dosed at a rate satisfactory to the flowmeter. The brine density should not exceed a density of 1,038. The scaling potential increases rapidly over this level. An increase in the amount of CT-04 used will assist in retaining potential scale forming salts in suspension.

When used for treating marine evaporators, the product should be dosed continuously into the sea water feed line where all of the treatment will enter the evaporator. Since CT-04 is highly concentrated it should be pre-mixed with cool distillate in a separate dosing tank and dosed via a flow meter or metering pump.

Further Technical Data:

Form	Liquid
Appearance	Colourless
Density	1,10
pH	7

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CT-05 – Anti-Foulant And Corrosion Inhibitor For Sea Water Cooling Systems

Description:

CT-05 gives complete protection against corrosion and fouling by marine growth such as algae, moss, shellfish and micro-organisms in seawater cooling systems. It is also used as an effective biocide to treat diesel engine cooling water systems against micro-organisms and bacteria.

Features:

CT-05 is specifically designed to give prolonged antimicrobial protection by virtue of its slow acting biocidal activity. The medium to long term preservation effect conferred by CT-05 is tailored to suit the need for microbial control in the following applications:- Cooling Towers, Heat Exchangers, Holding ponds & reservoirs, Industrial fresh water systems, Paper Mill waters, Spray Booth water curtains. CT-05 has an outstanding effectiveness against algae & bacteria.

Benefits:

Prevents marine growth in filter boxes, sea water lines and heat exchangers. Filming properties protect system-s against corrosion. Ensures maximum thermal efficiency by keeping heat transfer surfaces free from deposits. Consistent usage provides long lasting protection. Reduces maintenance and down time. Non-toxic and non-pollutant product.

Usage:

Activity of CT-05 is at an optimum at 80ppm of the system capacity. Allowances should be made for losses. CT-05 is a slow acting biocide & should be dosed in slug doses every 2-5 days depending on the bleedoff and losses to maintain the 80 ppm level. 70 millilitres (0,07litres) per 1000 litres will provide approximately 80 ppm based on the total system.

Further Technical Data:

Form	Liquid
Appearance	Pale Yellow
Density	1,20
pH	12-13
Not compatible Aluminium, Zinc.	

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Material Safety Data Sheet and / or Product label.



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ST-01 – Biological Treatment Of Waste Waters In Marine Septic Tanks

Description:

Encourages the aerobic degradation of wastes in septic tanks. Therefore stops foul odors. Provides biological degradation and liquefying of solid deposits. Treats the wastewater. Acts as a start-up and maintenance product for waste water treatment plants. Increases the efficiency of the septic tank, prevents blockings and need for waste collection.

Features:

ST-01 consists microorganisms selected for their ability to degrade organic wastes, grease, proteins, cellulose and lignin in urban waste waters. The initial effect is provided by the enzymes in the product formulation. Decomposing the organic wastes these enzymes accelerate the action of microorganisms. Taking the action the aerobic microorganisms in the product degrade the wastes by means of aerobic oxidation. So the anaerobic microorganisms in the medium cannot find anything to feed on. By this action the anaerobic corrosion and foul odors are stopped. When dosed through toilets, working all the piping system like a biologic bed the microorganisms increase the contact time with wastes and significantly improve the plants performance.

Application areas:

Marine type septic tanks, waste water tanks. Waste water pipes in ships. Marine type waste water treatment plants

Benefits:

Eliminates the odours associated with sanitary systems which are overloaded or blocked. Cleans sewage holding tanks without the need for manual entry. Clears pipes and systems blocked by organic waste matter. Clears organic materials in slow draining pipes and scuppers. Restarts septic sewage treatment plant. Keeps complete sanitary systems in optimum operational condition

Usage:

Dose for a week:

75 gr. (Half a water glass) per four people. For larger systems apply 75 gr. per m3 of septic tank or waste water treatment plant. Repeating the above dose for 2-3 times for the first week accelerates the effect. While it is suggested that you dose the first week doses directly in the septic tank or the plant, It is possible to dose the maintenance doses from the toilets.

Further Technical Data:

Form	Mineral Powder
Appearance	Grey Beige
Density	1,1
pH	6,5 – 7,5
Smell	None

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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ST-02 – Liquid Biological Treatment And Cleaner Of Marine Sanitary

Description:

Stops foul odors generated by anaerobic microorganisms. Decomposes, liquefies and biologically degrades the organic deposits. Eases the cleaning of toilets.

Features:

The enzymes in ST-02 provide an instant decomposition process for the organic deposits. Then the microorganisms in the product take the action and biologically degrade the organic wastes in the toilets. This results in the liquefaction of organic wastes and solution to odor problems.

Application areas:

Toilets, sinks, showers, etc. and marine sanitariums.

Benefits:

Biodegradable. Suitable for use in all marine sanitary and sewage treatment systems. Safe, no special handling requirements. Replaces conventional cleaners potentially harmful to the biological sewage system.

Usage:

The dose of the product is 100 ml. This dose will be sufficient for the ships and etc. for about 1-2 weeks time, whereas the same dose must be renewed at each emptying of the ship toilets that take place in less than a week. For septic or commonly used portable toilets, repeat the dose a few times a week.

Further Technical Data:

Form	Liquid
Appearance	Blue
Density	1 - 1,05
pH	5,5
Smell	Pleasant

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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ST-03 – Chlorine Tablets For Sewage

Description: ST-03 contain an active ingredient of 70% calcium hypochlorite; when dissolved in water, release active chlorine in hypochlorous acid form and are used as oxidizing disinfectants for the conditioning by chlorination of sewage and waste water systems. ST-03 are used as a disinfectant of supply water and treatment of sewage systems.

Features & Benefits:

100% water soluble. Tablets dissolve slowly. Economical and easy to use.

Usage:

The water system to be treated must be fed by skimmers or in floating trays. The recommended initial dosage is 5 tablets for every 100 m³ of water for the treatment of waste water. A daily dosage of 1/10 of a tablet per 10 m³ of water may then be used as a standard dosage.

To disinfect sewage water, tablet is added into the water to maintain residual chlorine of between 0,2 to 0,5 PPM. Initial recommended dosage should be 1 to 2 tablets per 4 ton of water.

Recommended dosage is listed in the table below.

TONS OF WATER	NO. OF TABLETS
4	1-2
8	2-3
16	4-5
32	8-10
64	16-20

Further Technical Data:

Form	Solid
Appearance	White, 200 g tablet
Solubility	Soluble in water
Specific Gravity	2,35
Moisture	0,5 max
pH	3

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Material Safety Data Sheet and / or Product label.



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PWT-01 – Liquid Chlorine (12% Sodium Hypochlorite)

Description:

PWT-01 is a compound used to disinfect water in aqueducts or on board ships. Sodium Hypochlorite is universally recognised as a disinfectant and its use is allowed in all civil water supply lines. It is a general biocide substance which kills germs, microorganisms, algae and bacteria and can be used a general disinfectant.

Features:

PWT-01 is effectively used for water purification. It is also suitable for use in swimming pools, Jacuzzis, sewage and waste water systems for water disinfection and oxidation. PWT-01 has the advantage that microorganisms cannot build up any resistance to it.

Benefits:

Approved water disinfectant. Effective against bacteria and bio-film. Maintains residual sewage water clean. Eliminates bad smells. Can be used for disinfection of swimming and Jacuzzi pools. 100% water soluble. Economical and easy to use.

Usage:

PWT-01 may be applied by all conventional means. The product is treated as a general cleaner and can be used manually or automatically. Recommended Dosage: Residual chlorine in drinking water tanks should range between 0,5 and 2 (max) ppm, to ensure wide range antibacterial protection. To obtain 2 ppm in drinking water tank, put 20 ml of PWT-01 for every m3 of water.

Further Technical Data:

Form	Liquid
Appearance	Pale Yellow
Density	1,1
pH	9

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Material Safety Data Sheet and / or Product label.



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PWT-02 - Chlorine Tablets For Potable Water

Description: PWT-02 contain an active ingredient of 70% calcium hypochlorite; when dissolved in water, release active chlorine in hypochlorous acid form and are used as oxidizing disinfectants for the conditioning by chlorination of sewage and waste water systems. PWT-02 are used as a disinfectant of supply water and treatment of sewage systems.

Features & Benefits:

100% water soluble. Tablets dissolve slowly. Economical and easy to use

Usage:

The water system to be treated must be fed by skimmers or in floating trays. The recommended initial dosage is 5 tablets for every 100 m3 of water for the treatment of waste water. A daily dosage of 1/10 of a tablet per 10 m3 of water may then be used as a standard dosage.

To disinfect sewage water, tablet is added into the water to maintain residual chlorine of between 0,2 to 0,5 PPM. Initial recommended dosage should be 1 to 2 tablets per 4 ton of water.

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64	16-20

Further Technical Data:

Form	Solid
Appearance	White, 200 g tablet
Solubility	Soluble in water
Specific Gravity	2,35
Moisture	0,5 max
pH	3

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Description:

PWT-03 is a liquid combination of polyphosphates, having stabilising properties. The product effectively and economically provides scale and corrosion control in potable water and other shipboard once-through water systems.

Features & Benefits:

PWT-03 will improve water quality and have no deleterious effects on taste or colour of water. Treatable problems occurring in potable water include scale formation, iron oxide precipitation, foam generation and corrosion. PWT-03 is a potable water anti-scale product that is suitable for both hard and soft water and for hot and cold systems. PWT-03 is based on an inorganic phosphate product and will not cause any environmental or health problems. PWT-03 is efficient and effective and will give complete protection required in the modern potable water system. PWT-03 is cost-effective and will give the best anti-scale inhibition available.

Usage:

Potable Water Stabiliser Liquid is non corrosive to ordinary metals used in feeding equipment and may be fed with a simple by-pass feeder or suitable chemical dosing pump. Typical dosage rate is 15 to 25mls/m3 water.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,05
pH	10

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.





FUEL OIL & EXHAUST GAS TREATMENT

* FUEL OIL TREATMENT	24-28
* FIRE SIDE TREATMENT	29-30
* GAS SIDE TREATMENT	31



FOT-01 – Fuel Conditioner/Stabiliser

Description:

FOT-01 avoids sludge formation in tanks, ensuring a clean fuel system. It also prevents corrosion in tanks and components, by neutralizing fuel acids.

Features:

Various fuel components such as paraffin, asphaltene carbon residues and resins that prevail in the main machines, diesel generators and oil broilers of vessels lead to difficulties in oil separation and burning processes as well as oil component storing and transfer processes.

They precipitate at the tank bed and form sludge, which makes the transfer of oil in store tanks to the settling tank impossible, by even reaching the tank receiver. They also cause thick dirt formation on separator bawls and disks, apart from leading major amount of oil to the sludge tank via separators during separation process. They can even lead to deposits that block fuel system components and filter, in particular. FOT-01 avoids sludge formation in tanks, ensuring a clean fuel system. It also prevents corrosion in tanks and components, by neutralizing fuel acids. It provides necessary fine fuel for an improved combustion.

Benefits:

Avoids sludge formation in tank beds. Ensures a longer cleanness on separator and filters. Ensures a longer maintenance effect on fuel system elements such as fuel pumps and injectors. May be used in fuel hitter, injector, fuel pump, broiler nozzle and fuel filter cleaning. Disperses existing sludge. Improves atomization and combustion.

Usage:

FOT-01 is added directly to the fuel tank prior to bunkering either through a sounding pipe or a filling line to ensure properly mixing of the product into the fuel. Alternatively, FOT-01 may be introduced to the settling tank or during transfer from storage. The recommended dosage rate for fuel oil treatment is 1 liter of FOT-01 per 4000-6000 liters of fuel. If fuels with high sulfur and vanadium levels and / or high viscosity and solid particles: 1 to 2 liter for every 2000 lt. of fuel oil may be necessary. Periodically observe product effectiveness and increase dosage rate accordingly. The dose may be increased with no danger of causing any harm.

Further Technical Data:

Form	Liquid
Appearance	Colourless
Density	0,95
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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FOT-02 – Combustion Improver/Carbon Catalyst

Description:

FOT-02 improves combustion in boilers and diesel engines, while minimizing carbon build-up. It also avoids acid corrosion, helping save costs.

Features:

Fuel oils generate energy and power via combustion. During combustion, however, only volatile substances in fuel oil combust, leaving carbon residues in combustion rooms of diesel engines and fireboxes. Carbon residues thicken in the course of time and also; fill up in ring grooves and turn them into deadwood, build up in discs and sits of exhaust valves and prevent the full tightness of valves, which may even lead to valve burning, deposits in the ports of two-cycle machines, increase the pressure during scavenge air input and exhaust output, get mixed in oil on liner, fall down to oil pan and deform lubricant oils, block injector holes and deform fuel atomization. Sulphur in fuel generates sulphur trioxide, which form sulfuric acid that causes wear and tear and sludge. Sulfuric acid in exhaust gas leads to corrosion in pistons, segments, liners and valves as well as exhaust manifold, turbocharger turbine, chimney vessel and chimney pass.

FOT-2 improves combustion in boilers and diesel engines, while minimizing carbon build-up. It also avoids acid corrosion, helping save costs.

Benefits:

Increases combustion efficiency. Reduces carbon build-up in combustion zones. Inhibits formation of carbonaceous deposits. Minimizes low temperature corrosion by inhibiting conversion of sulfur dioxide to sulfur trioxide. Reduces piston ring groove and piston fouling resulting in longer life. Reduces ash deposit formation in turbochargers and on exhaust valves. Decreases smoke emissions. Fuel conditioning components stabilize fuel viscosity, preventing sludge formation in tanks, filters and pre-heaters. Improves water separation in settling tanks and separators

Usage:

There are several methods to introduce the product to the fuel. The recommended method, however, is to apply FOT-02 using a dosing pump into the fuel line prior to the suction side of the low-pressure feed pump. Alternatively, the product could be introduced into the suction side of the transfer pump when transferring into the settling or service tanks (after separation) or even into the bunker tanks prior to bunkering. Although these alternative methods are acceptable, the product's efficiency in these cases is reduced since mixing with the fuel is not optimum. When using a dosing pump, particular care should be taken to ensure that the pump feeding pressure will be at least equal to the man metric pressure on the point of injection, otherwise the fuel will flow back into the feeding circuit. Approved equipment should always be used. Dosage may vary from 1:1000 to 1:4000, depending on the engine or boiler condition and the quantity of emissions. The general dose should be 1:2000 and should be maintained for three to four (3-4) weeks.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,89
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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FOT-03 – Vanadium Conditioner

Description:

A Post-Combustion fuel ash modifier very efficiently reducing high temperature corrosion causing premature exhaust valve failure in low-speed and particularly medium-speed diesels

Features:

FOT-03 is a specially formulated blend of combustion catalysts, ash deposit modifiers and corrosion inhibitors that improve combustion efficiency while at the same time, keep emissions low and prevent ash and carbon deposit formation on exhaust gas affected engine or boiler parts. The product is designed to control corrosive deposits of sodium, vanadium, and sulphur on valve seats and turbocharger blades. It prevents vanadium converting sulphur dioxide to sulphur trioxide catalytically, thus helps reduce the acid formation resulting from sulphur trioxide and exhaust steam. The former is a by-product of combustion, originating from the reaction of vanadium and sulphur.

FOT-03 will modify fuel ash in small solid nonabrasive particles, thus reducing wear on valve seats and exhaust gas affected machinery parts. The product is not affected by fuel centrifugal separation.

Benefits:

Reduces high temperature corrosion. Reduces corrosion effects caused by vanadium and sodium impurities. Reduces fouling in post combustion zone such as turbo charges, exhaust valves, economizers. Separates emulsified water in fuel and enhances water separation at the separator. Reduces unburned particles and soot emission. Extends life of valves, cylinders etc.

Usage:

There are several methods to introduce the product to the fuel. The recommended method, however, is to apply FOT-03 using a dosing pump into the fuel line prior to the suction side of the low-pressure feed pump. Alternatively, the product could be introduced into the suction side of the transfer pump when transferring into the settling or service tanks (after separation) or even into the bunker tanks prior to bunkering. Although these alternative methods are acceptable, the product's efficiency is reduced since mixing with the fuel is not optimum. When using a dosing pump, particular care should be taken to ensure that the pump feeding pressure will be at least equal to the manometric pressure on the point of injection, otherwise the fuel will flow back into the feeding circuit. Approved equipment should always be used. Dosage may vary from 1:1000 to 1:4000, depending on the engine or boiler condition and the quantity of emissions. The general dose should be 1:2000 and should be maintained for three to four (3-4) weeks. Where product is not introduced by using a dosing pump, dose should be increased by 30-50% to account for insufficient mixing and product loss.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,89
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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FOT-04 – Low Sulphur Additive

Description:

FOT-04 is a fuel oil conditioner which improves lubricity in low-sulphur diesel fuels with poor lubricity characteristics. The blend of dispersants, surfactants, detergents and lubricity additives prevents wear of metal to metal contact surfaces and fuel instability.

Features:

FOT-04 is extremely effective at protecting rotary fuel injection equipment from wear when operating with fuels of low intrinsic lubricity, such as gas oil and diesel oil. FOT-04 demonstrates excellent lubricity improving characteristics by both HFRR and SLBOCLE bench test procedures. This product offers very good solubility and therefore does not negatively affect filterability characteristics of the doped middle distillate.

Benefits:

Usage in standard, low sulfur and ultra low sulfur diesel & 0,1% sulfur MGO fuels. Improves the lubricity of the fuel. Stabilizes the fuel. Improves the thermal stability of the fuel. Extends the life of components by minimizing metal-to-metal contact. Lubricates fuel pumps and injectors. Maintains clean injectors. Anti-scuff technology improving lubricity, evaluated by the High Frequency Reciprocating Rig (HFRR) test. Improved oxidation stability of hydrotreated fuels, certified according to ASTM D2274

Usage:

To obtain the benefits of the chemical treatment to the entire fuel oil system it is necessary to dose the product in the most appropriate ratio depending upon the nature and severity of the problem.

The dosage of FOT-04 varies depending on the fuel grade & performance targets to be met. Fuel oil should be sampled and analyzed on a regular basis to monitor the quality.

1. For low sulphur diesel fuel FOT-04 should be dosed at 1:5000 (5MT)
2. Dosage might have to be raised in case of residual fuel oil, 1:3000 (3MT)

Further Technical Data:

Form	Liquid
Appearance	Amber
Density	0,89
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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Fot-05 – Fuel Oil Biological Bacteria Control

Description:

FOT-05 is a specially designed liquid additive, which provides control against microorganisms and bacteria that contaminate fuel storage tanks and systems.

Features:

FOT-05 will diminish microbiological growths in layers between water and oil, where bacteria is most active while maintaining fuel stability and reducing system corrosion caused by fermentation. Kills micro organisms in fuel oil. Keeps filters and nozzles free from clogging. Prevents corrosion in fuel systems and doesn't form any corrosive combustion products. Safe for use on all materials, including metal and synthetic rubber.

Benefits:

Effective against bacteria and algae in oil. Special surface active component ensures complete coverage over large areas. Simple control / monitoring program. Easy to use liquid. Cost effective in maintaining fuel system clean. Good environmental acceptability.

Usage:

For Marine Diesel Oil and Gas Oil:

FOT-05 is self dispersing and can therefore be added directly to the fuel tank.

The recommended dosage rates are:

Preventive treatment: 0.20 litres/ton continuously (meaning that all new oil charged to the fuel tank is treated with 0.20 litres/ton) or 0.6 litres/ton in periodic dosing to the tank every 2 months, independent of how much fuel that has passed through the tank. Decontamination of contaminated oil: 0.8 litres/ton Shock dosing: 3 litres/ton (biomass can be seen, filter blockage)

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,95
pH	-

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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FST-01 – Soot Remover Liquid

Description:

FST-01 is formulated for effective prevention of soot and firescale deposits from boilers and diesel engine exhaust systems.

Features:

FST-01 should be applied to the hottest part of the exhaust gas system. Application is via a pressure pot and injection lance operated with compressed air at 50 - 100 p.s.i.. Injection should be as near to the turbocharger outlet as possible.

Benefits:

Easy to use liquid. Effective soot removal from exhaust gas economiser. Aids/maintains economiser efficiency. Minimise exhaust gas particulate matter. For on-load removal and prevention of fire-side deposits in exhaust gas systems. Vaporises quickly and is distributed throughout the exhaust gas system impregnating deposits such as soot, bonded vanadium or sulphatic compounds. Modifies deposits chemically and physically allowing them to be easily removed by soot blowing or manual cleaning. Existing deposits may be loosened and disintegrate after a few weeks of treatment. Will maintain the condition of clean exhaust gas systems. Ideally suited for ballast and other tank protection during ship lay-up periods.

Usage:

The recommended dosage will vary between 5 - 20 litres per system depending upon the heating surface area. Following the injection FST-01, 5 litres of fresh water should be injected via the dosing pot in order to keep the injection nozzle clean. If the nozzle becomes blocked cleaning should be effected by immersing the nozzle in hot water. The frequency of Soot Remover addition will depend on the nature and severity of the problem, varying from daily for severe deposition, to weekly as a maintenance dosage. It is not necessary to ease the system loading or interfere in any way with normal operations when using FST-01.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,55
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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FST-02 – Soot Remover Powder

Description:

FST-02 is a compound of combustion chemicals, specially formulated to safely remove soot and fireside deposits from boilers and diesel engine exhaust systems.

Features:

To remove unburned carbon slag deposits from:- Boiler furnaces, super heaters, economisers, air heaters and exhaust path/stacks.

Benefits:

Reduces soot and slag deposits by transforming them into dry, powdery ashes, which are easily removed. Reduces cold end corrosion by neutralizing sulphuric acid deposits on surfaces where the temperature is lower than the dew point of the exhaust gas. Improves heat transfer and aids soot blowing due to reduction in deposits. Increases boiler efficiency. Reduces cleaning costs by decreasing maintenance and frequency of cleaning. No need to shut down boiler or plant when dosing. Available in easy-to-use stick form.

Usage:

For oil-fired boilers, the daily dosage depends on the fuel oil consumption per boiler, per day

DOSAGE CHART FOR BOILER

Steam Raised - Tons/Hr	Boiler Fuel - Tons/Day	Dose Rate - Kg/Day
3	5,5	1,0
6	11	2,0
9	16	3,0
12	21	3,5
15	27	4,0
23	41	4,5
31	55	5,0
46	82	5,5
62	110	6,5

DOSAGE CHART FOR DIESEL ENGINE

Fuel Consumption – Tons/Day	Dose Rate – Kg/Day
10	1,5
20	3,0
30	3,5
40	4,0
50	4,5

Further Technical Data:

Form	Powder
Appearance	Red
Density	1000 kg/m3
pH	-

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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GST-01 – Asteroids

Description:

GST-01 - Asteroids are organic materials with controlled particle size used for cleaning blades of gas side of exhaust - gas turbochargers in modern diesel engines.

Features:

GST-01 are totally organic compounds cleaning for blades of gas side exhaust gas turbochargers. When Asteroids released into the exhaust gas lines before the gas inlet by compressed air, they act as abrasive and clean the turbine. When they are injected in to the turbine, the asteroids completely burn and release in to atmosphere through the stack without causing any chemical reaction. A turbine should be cleaned every 24 to 48 hours of operation.

Benefits:

Don't cause reduction of the rpm during cleaning process. Doesn't form corrosive acids. When used regularly, Asteroids increases the time between maintenance services. Maintaining the turbine in perfect clean condition results trouble free operation. 100% organic

Usage:

Please contact our technical department for usage details.

Further Technical Data:

Form	Solid
Appearance	Brown
Density	
pH	-

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Material Safety Data Sheet and / or Product label.



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CLEANING AND MAINTENANCE PRODUCTS

- * CARBON REMOVERS 34-36
- * DEGREASERS & GENERAL CLEANERS 37-53



SEAWOLF
MARINE CHEMICALS

CR-01 – Air Cooler Cleaner

Description:

CR-01 is a powerful solvent emulsion cleaner for the cleaning of diesel engine air coolers, scavenging air systems and compressor sides of turbochargers.

Features:

CR-01 is used in air coolers, turbochargers, and the scavenging system of marine engines, either when running or idle. The product is also used to remove carbonaceous residue from machinery parts.

Benefits:

Effective removal of oily contaminants. On-line cleaning saves time and maintenance costs. Completely combustible in the cylinder. Does not damage cylinder oil film. Safely used on all surfaces of scavenge air systems and air coolers, no harmful effect to engines. Can also be used as carbon cleaner.

Usage:

A - Injection method

Using a permanently installed or portable injection apparatus spray a solution of CR-01 in water in the air trucking system, so that the solution jet flows in the opposite direction to the turbocharger forced air stream. Continue injection for 10-15 minutes and allow 15 minutes for the product to act. When injection is complete, inject an equal amount of water to rinse. For turbocharger air side and air cooler cleaning, use a 30-50% solution of CR-01 in fresh water depending on the amount of deposition. When cleaning turbocharger exhaust side, reduce the content of CR-01 down to 10%.

Note: The cleaning frequency largely depends on the amount of air cooler fouling. At the early stages, it is recommended to repeat the cleaning procedure every 24 hours and slowly reduce the frequency of application. The dosage rate, however, should remain constant regardless of the application frequency.

B - Hand spray method

The engine is stopped and the air cooler drain valves are opened. Using a pressure hand spray, CR-01 is applied undiluted to the cooler coils. The product is allowed to penetrate for a minimum of one (1) hour and then, using a high pressure water jet, all loosened deposits are being removed. The process is repeated if necessary and the system is thoroughly rinsed prior to closing the drain valves.

C - Soaking Method

This method is used to clean carbonaceous deposits from machinery parts. Soak parts in a bath of undiluted CR-01 for as long as necessary (min. of 2 hours) so that deposits are loosened and can easily be removed with a high pressure water jet and wire brush. Rinse well with fresh water.

Further Technical Data:

Form	Liquid
Appearance	Pale Yellow
Density	0,97
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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CR-02 – Carbon Remover

Description:

CR-02 is a non-toxic powerful solvent for carbonaceous deposits removal. It is a hydrocarbon solvent blend, which does not contain any hazardous cresylic acid or other chlorinated solvents.

Features:

CR-02 breaks down and separates residual combustion products and by-products of distillation of mineral oils. It quickly dissolves deposits containing carbon, resins or varnishes in:

- Heavy fuel heaters
- Filters for lubricants or fuel oils
- Burner tips
- Oil coolers
- Diesel engine injectors
- Machine parts: pistons, piston rings, valve springs, valve cages, connecting rods etc

Benefits:

Does not contain nonylphenol ethoxylates or other estrogenic compounds. Non-corrosive, safe on all light metals, including aluminium. Quickly dissolves deposits containing carbon, resins or varnishes. Simple and economical to use by soaking or circulation method. Eliminates need for hard scraping. Low toxicity. Low evaporation rate. No phenolic or chlorinated compounds. Safe for the environment and the user.

Usage:

A - Soaking Method

Place the parts to be cleaned in a steel bath filled with undiluted CR-02 and let them soak until deposits are completely dissolved and can be removed, (usually 4 to 8 hours). Remove parts from the bath and spray them with a powerful water jet. Dry with a cloth or compressed air.

B - Brush method

For large, heavy pieces, CR-02 is applied with a brush. Brush the treated area until the deposits are saturated, loosened and can be easily removed. Spray with water to rinse and then use a cloth to dry.

Form	Liquid
Appearance	Pale Yellow
Density	0,97
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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CR-03 – Filter Cleaner

Description:

CR-03 is a specialized product, containing anionic surface-active agents to remove oil depositions, carbonised oil and sludge from metal and ceramic oil filters.

Features:

CR-03 is mainly used for the cleaning of metal/ceramic oil filters, from carbonised oil depositions.

Benefits:

Preserves and protects the operational capabilities of filters. Prevents the formation of coke-type components, which are difficult to remove. Safe to use on all types of filters. Quick and effective. Easy to apply and use. Non-corrosive.

Usage:

CR-03 Filter is used undiluted at cleaning temperatures not exceeding 60°C. The cleaning effect is obtained by filling and/or circulating the product. Cleaning will take 8 to 24 hours depending upon the degree of contamination.

Form	Liquid
Appearance	Pale Yellow
Density	0,97
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-01 – Solvent Based Oil And Grease Remover

Description:

DG-01 is a heavy duty degreaser based on petroleum solvents, emulsifying agents and surfactants. This product is excellent for use on soiled surfaces, bilges and machinery parts.

Features:

Most suitable for removal of oil and grease from machinery parts, tank tops, bulkheads, decks and floor plates and especially for Tank cleaning. DG-01 is also used for cleaning of cargo tanks, bunker tanks and for spot cleaning.

Benefits:

Multipurpose powerful degreaser, wide range of applications. Removes oil contamination from machinery, engine parts and bilges. Non-acid, non-alkaline. Easy to rinse with water, leaves no residue. Safe to use on most metal surfaces and equipment.

Usage:

This degreaser can be applied neat with a brush, by hand spray, immersion, soaking etc. The contact, or soaking, time should be between 15 minutes to 2 hours before washing off with hot or cold water. Hot water will improve the result of the cleaning.

A. Spray Method

Spray over soiled areas neat and allow 15-20 minutes to act. Rinse off by hosing using hot fresh water. Where deposits persist, allow longer action time (30') and scrub soiled areas with undiluted cleaner. Then rinse off with hot pressurised water or steam.

B. Soaking Method

Use a solution of DG-01 in kerosene or other suitable petroleum solvent for a light cleaning operation, or use neat for heavily soiled parts. Soak items to be cleaned for at least 20 minutes and then rinse off with hot water.

Further Technical Data:

Form	Liquid
Appearance	Red Brown
Density	0,98
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-02 – Solvent Based Bilge Cleaner

Description:

DG-02 is a solvent based heavy-duty bilge, engine room and cargo tank cleaner, specially formulated with self-splitting action. It allows the slop water to break into separate oil and water phases.

Features:

The main applications of DG-02 are for cleaning in the engine rooms, tank tops and on decks. It may also be used for general cleaning, where slops will be passed through oily water separators.

Benefits:

Compatible with all types of oily/water separators and coalescers. Rapid penetration. Used for general cleaning of machinery spaces, bulkheads, decks, tank tops and any oil/grease soiled areas. Low Toxicity. Reduces disposal costs and associated problems. Low toxicity, non corrosive.

Usage:

DG-02 can be applied by brushing or soaking. It should not be sprayed, nor should contamination or washing with other cleaners be allowed. Either of these events can drastically reduce the effectiveness of the splitting process.

At least 30 minutes should be allowed between the use of DG-02 and the operation of the separator. The most common source of contamination is from air side turbocharger washings containing air cooler cleaner type products. It is suggested that the cleaner and washings are prevented from entering the bilge by collecting them from the drain of the air side of the turbocharger.

Quickbreak can be used for cargo tank cleaning of mineral oils and petroleum based chemicals. It is used also for cleaning and degreasing of grease soiled surfaces such as:

1. Oil side of fuel and lube oil heat exchangers
2. Boilers
3. Engine cooling water systems

Further Technical Data:

Form	Liquid
Appearance	Red
Density	0,95
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-03 – Heavy Duty Water Based Degreaser

Description:

DG-03 is a water-based general purpose degreaser with an excellent cleaning efficiency. It effectively removes grease, wax, vegetable and animal fat, oil, sludge, soot, carbon deposits, traffic film, dirt and grime.

Features:

DG-03, although mostly used on decks, has numerous applications, including engine room and engine cleaning, Ro/Ro and ferries car deck bulkhead cleaning, refrigeration spaces, fishing vessel holds, cargo holds and tanks cleaning and general ship, yacht and pressure boat exterior cleaning.

Benefits:

Excellent cleaning efficiency. Retains strong degreasing properties when diluted. Good for use on decks. Contains no solvents or caustic-based cleaners. Safe on all materials. Pleasant aroma. Low-toxic product. Easy to apply, cost-effective

Usage:

DG-03 may be used for different types of cleaning and in a number of ways. Apply a solution of DG-03 (5-20%) in warm water on soiled surfaces using brushes, rags or hand spray. Allow 5-10 minutes for the product to act and rinse off with plenty of water. Where soiling persists, the product may be applied undiluted provided that all necessary precautions have been taken.

If high pressure washing is used, use a solution of 1- 20% DG-03 in warm water.

Further Technical Data:

Form	Liquid
Appearance	Red Brown
Density	0,98
pH	7-8

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-04 – Multipurpose Liquid Detergent

Description:

DG-04 is a superior liquid detergent with good foaming properties. The active wetting agents give rapid penetration to remove light oil and dirt from all surfaces.

Features:

DG-04 has a wide range of applications. It is suitable for general accommodation and deck cleaning, for refrigerator and paint brush cleaning and may be used on any type of surface.

Benefits:

Very effective general-purpose cleaner. Suitable for use on areas where food might be stored or handled. Suitable for accommodation cleaning of woodwork, leather, desks etc. Suitable for cleaning of toilets and showers. Can be used for cleaning of dishes. Can be used for cleaning of windows and port holes. Biodegradable, non-flammable. Pleasant odour, leaves no residue on surfaces. Neutral pH, acts as a neutralising agent. Easy to apply and use.

Usage:

Depending on the degree of contamination DG-04 shall be mixed with warm water at a dose rate of 50 to 200 ml per 10 litres, i.e. 1 cup to a bucket of water. DG-04 solution can be applied simply by mops, brushes or rags, or dip the soiled articles into the DG-04 solution. After cleaning, rinse off with cold or warm water. Due to high foaming properties, DG-04 is not recommended for laundry washing machines.

Further Technical Data:

Form	Liquid
Appearance	Blue
Density	1,0
pH	8

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Material Safety Data Sheet and / or Product label.



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DG-05 – Environmental Cleaner Degreaser

Description:

DG-05 is a micro-emulsion water based cleaner/degreaser. This product is low toxic, biodegradable and safe to use. It is based on natural citrus oil solvent linked with an advanced surfactant formulation.

Features:

DG-05 has a broad range of marine applications. It provides enhanced removal of difficult carbon deposits and heavy greases, oil and sludge, dirt and grime, while leaving no residues. Suggested applications include cargo holds, bilges, tank tops, tools, parts, equipment, general deck and engine room maintenance.

DG-05 can be used for all types of cleaning and degreasing and can be applied by brushing, spraying or soaking. It may be applied neat or diluted (5-20% solution) in fresh warm water, depending on the degree and nature of soil to be removed.

Benefits:

No risk of water pollution during disposal operation. Compatible with oil / water separators. Promotes a healthy and pleasant smell in the working area. Very economical dilution rate. Compatible with all types of tank coatings. Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Suitable to use with hot or cold high pressure equipment.

Usage:

A. General Cleaning

DG-05 can be used for all types of cleaning and degreasing and can be applied by brush, hand spray or used in ultrasonic cleaning tanks. Can be used neat or diluted from 1 part up to 15 parts of water according to the amount of soil to be removed. After use as an engine room cleaner, bilge slops must be given sufficient time to separate before passing through an oily water separator.

B. Spot Cleaning

DG-05 can be hand sprayed neat or diluted up to 5 parts water and left for about 20–30 minutes before washing off with water.

Further Technical Data:

Form	Liquid
Appearance	Orange
Density	1,0
pH	7-8

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-06 – Water-Based, Low Toxic Oil Spill Dispersant

Description:

DG-06 is a biodegradable, water-based oil spill dispersant which is highly efficient for use on a wide range of oils. It has extremely low toxicity, is totally biodegradable and contains no petroleum solvents.

Features:

DG-06 converts hydrocarbons into fine emulsions that can be biodegraded much more quickly in sea water. It can be applied by boat or aerial spraying. When authorized, this product can be used as a concentrate or diluted for many types of oil cleaning operations at sea, on rocky shoreline and beaches. DG-06 is non toxic and biodegradable.

Benefits:

Water-based concentrate dispersant containing no hydrocarbons. Biodegradable, non toxic to marine life. Converts oil spills to hydrophilic droplets that are easily biodegradable. Minimizes environmental damage. Does not contribute further to pollution. Cost effective and economical. Easy to handle and apply. Applicable to mineral oils, crude oils, fuel oils, kerosene, white spirit and lubricant oils. Non flammable.

Usage:

A. Oil Spills At Sea

DG-06 oil spill dispersant should be sprayed onto the oil slick using spraying equipment connected to booms with spray nozzles supplied by a pump from storage tanks. When using the product the sea surfaces should be agitated using breaker boards, boat propellers, bow wave ect. to help disperse the oil. When dealing with small spills from vessels, use hand spray pump or an eductor and fire hoses or monitor. This will mix the dispersant with seawater, and agitating the sea will help break up the oil slick as well as applying the dispersant. This technique has also proved valuable when dealing with small spills in ports and harbors between ships side, wharfs and pilings, ect. or any area which has difficult access.

B. Beach & Shore Line

DG-06 may be used for beach and shore cleaning as it meets the high technological standards required for this area of cleaning. Where application is justified, the most appropriate method of use will depend on the type of shore line, the type of oil and the extent of contamination. When a beach has oily liquid from a spill, it is advisable to remove as much as possible of the liquid mechanically, before applying DG-06. The type of dispersant to be used will depend on the type and the amount of oil. For light to medium crude and fuel oils, a solution of DG-06 would most probably prove sufficient. For heavier oils, use the product concentrate. Apply the product over the oil working from the low water mark upwards, before a rising tide. In calm areas, use hoses to wash down the shore line and to remove the oil from the beach and rocks.

Further Technical Data:

Form	Liquid
Appearance	Red Brown
Density	0,95
pH	7-8

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-07 – Solvent-Based, Low Toxic Oil Spill Dispersant

Description:

DG-07 is a biodegradable hydrocarbon based product with high dispersing efficiency and low toxicity. DG-07 is used to disperse and clear accidental oil spills on deck and in the sea.

Features:

DG-07 is applied as an oil dispersant to counter oil spill pollution on water. It may also be used as a cleaner of oil on solid surfaces, such as docks, decks and piers. It is suitable for use on oil spills that may occur during loading or discharging of cargo or bunkers where allowed.

Benefits:

Type I ready to use product. Very effectively disperses mineral oils, crude oils, residual fuel oils, diesel fuel oil, kerosene, white spirit and lubricant oils. Biodegradable and very low toxicity to marine life. Diminishes the overall damage to the environment. Rapidly converts hydrocarbons into very fine emulsions accelerating the breakdown of the oil by marine bacteria. Diminishes the overall damage to the environment.

Usage:

A. Oil Spills At Sea

DG-07 is used undiluted by direct spraying to clean up oil spills at sea. It can be applied by hand spray, work boats with mounted spray booms, or fire hoses with injectors. Allow some time for the oil to absorb the DG-07 and then disperse mixture by vigorous agitation using fire hoses, ship's propeller, breaker boards towed behind work boats, etc.

B. Oil On Beaches And Shore Line

DG-07 should be applied neat by spraying over oiled areas. Allow time for the oil to absorb the DG-07 then follow by washing down the beach or rocks, etc. The treatment rate depends on the type and thickness of the oil spill, also on the age and condition. Under conditions where it is a thin slick of oil, 1 litre of DG-07 is enough to treat approximately 10 square metres of oil. In many cases, several applications may be necessary.

C. Shipboard Application (Docks, Decks, Piers, Etc.)

Remove as much of the oil as possible, then spray DG-07 over area covered by the oil and allow some time for it to be absorbed. Disperse the mixture with water by means of a fire hose. Depending on the type of oil it may be necessary to use several applications.

Further Technical Data:

Form	Liquid
Appearance	Amber
Density	0,90
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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DG-08 – Slow Drying Cleaner & Degreaser For Electrical Parts

Description:

DG-07 is a very effective product, to remove grease, oil and carbon deposits from electric parts and equipment without damaging them. This product has a controlled evaporation rate.

Features:

DG-07 is used in any electrical and machinery part, including electrical installations, with no need for rinsing.

Benefits:

Fast penetrating action, removes contamination from all common electrical parts. Can be applied with non-atomizing spray avoiding the need to dismantle parts. Slow evaporation allows parts to be cleaned in a bath. Leaves surfaces completely clean after drying. Contains no chlorinated solvents. Safe to use on painted or varnished metal surfaces. Non-corrosive and non-conductive. Cost effective, easy to apply and ready to use.

Usage:

DG-07 is used undiluted on well ventilated areas either by spraying, soaking or brushing. Do not dilute or use any solution or emulsion. It is recommended that all rubber parts are being removed prior to cleaning or tested for tolerance on the product. When cleaning electrical motors and/or generators, test winding insulation after cleaning to ensure it is within the accepted standards.

A. Spray Method

Spray the appropriate quantity of DG-07 over parts to be cleaned until all fouling is removed. Blow clean low pressure, compressed air on parts to speed up evaporation if needed.

B. Soaking Method

Immerse small parts into a bath of DG-0 and brush off oil or grease residues. Repeat the process if necessary.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,98
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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DG-09 – Fast Dry Electrical Cleaner

Description:

DG-09 is a solvent that effectively and quickly dissolves grease, tar, wax and oil from electrical equipment on contact. It dries in seconds and leaves no residue.

Features:

DG-09 is used for the cleaning and degreasing of generators, motors, electric parts, machines and oil machines, inlet valves, etc.

Benefits:

Non flammable. Rapid penetration. Fast and powerful solvent. Quick, controlled evaporation. Complete evaporation leaving clean dry surface. High dielectric constant. Disruptive force more than 20,000 volts. Non-Corrosive, Non-Flammable. Safe to apply on all kinds of surfaces. No need to rinse-off.

Usage:

DG-09 is used undiluted on well ventilated areas either by spraying, soaking or brushing. Do not dilute or use any solution or emulsion. Good ventilation is a must. Solvent resistant gloves and safety glasses, with splash protection, are required.

A. Spray Method

Spray the appropriate quantity of DG-09 over parts to be cleaned until all fouling is removed. Blow clean low pressure, compressed air on parts to speed up evaporation if needed.

B. Soaking Method

Immerse small parts into a bath of DG-09 and brush off oil or grease residues. Repeat the process if necessary.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,55
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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DG-10 – Environmental Non-CFC's Containing Electrocleaner.

Description:

DG-10 is a biodegradable, low-toxic product that dissolves oil, grease, wax and other soils from electrical parts. It has a controlled evaporation rate and leaves a clean surface. It is a low-toxic, nonflammable product, safe to use on all surfaces.

Features:

DG-10 is used in any electrical and machinery part, including electric motors, generators, switches, contact points and other electrical assemblies.

Benefits:

Special degreasing agent for removal of oil & grease from electrical components, machine parts, ball bearings...etc. Odorless, evaporates without leaving residue. Does not contain chlorinated hydrocarbons or harmful chemicals. 100% Biodegradable, non-chlorinated 'electro-cleaner'. Environmentally-safe, CFC and HCFC free. Harmless to electrical equipment. Promotes a pleasant and healthy working environment. Does not emulsify in water. Oil can be separated via oil/water separator.

Usage:

DG-10 is applied undiluted either by spraying with a hand spray gun, soaking in a tank, by brushing or wiping with a clean cloth. There is no need for rinsing.

A. Immersion Baths

In immersion baths DG-10 is used undiluted. No heating required. Put the parts to be cleaned into the bath for several hours. Then take the parts out of the bath and spray clean with a forceful waterjet. Attention: parts that needs to be rust-free and dry (such as electrical components) should not be sprayed with water but with DG-10 and blown completely dry to avoid risk of fire (in case residues are left behind).

B. General Cleaning

For cleaning soiled parts use DG-10 undiluted. Moisten the parts to be cleaned thoroughly with the product. Depending on the degree of contamination, allow the product to soak for 5 to 60 minutes, brushing in between. Then rinse thoroughly with water.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,8
pH	-
May swell rubber and synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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DG-11 – Heavy Duty Liquid Acid Descaler

Description:

DG-11 is an easy to use acid compound for removing water scale and iron dioxide deposits. It is inhibited to protect metal surfaces. This product is suitable for removal of calcium carbonate and magnesium salts as well as ferrous oxides from metal surfaces.

Features:

DG-11 is recommended for descaling boilers, evaporators, condensers, heaters and coolers. It may also be applied for scale removal from steam pipes and air conditioners.

Benefits:

Fast and efficient removal of scale and iron oxides. Contains descalant accelerator to increase reactions. Contains protective corrosion inhibitor against attack on ferrous metals. Can be used on most common metals. Easily rinsed, non volatile, water – soluble.

Usage:

DG-11 can be used by all conventional methods. However, recirculation and soaking methods have proven to be the most efficient.

First of all, inspect the components to be cleaned and if they are contaminated with oil, sludge or any other similar product, use either DG-01 – Solvent Based Oil And Grease Remover as pre-cleaners. The amount of DG-11 to be used depends on the extent and nature of contamination. For general cleaning, use a solution of 10-30% of DG-11 in fresh water. Remember that DG-11 is an acid so you should always pour acid into the water, never do the reverse! Once cleaning is complete, rinse thoroughly with plenty of fresh water and also rinse with a solution of 1-2% of BT-02 – Alkalinity Control in fresh water. This step is necessary to make steel surfaces passive and to neutralize any remaining acid. Aluminum, zinc, tin and galvanized surfaces should be avoided.

A. Recirculation Method Heat Exchangers, Evaporators, Condensers

Heat a 10-30% solution of DG-11 in water for best results (up to 50°C). Recirculate the solution through the heat exchanger by use of a pump for at least 6-10 hours and maintain solution temperature if possible. Periodically test solution acid strength and add DG-11 as required. Rinse off by connecting the heat exchanger to a supply of fresh water. The last step involves circulation of a 1-2% solution of BT-02 – Alkalinity Control for a minimum time of 3 hours or until a neutral pH is obtained.

B. Cooling Water Systems

Follow same procedure as above. A sufficient quantity of chemical will be required to maintain acid strength throughout the cleaning operation. Place scale samples in easily observed positions to monitor the progress.



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DG-11 – Heavy Duty Liquid Acid Descaler

C. Boiler Scale Remover

Prepare a DG-11 solution in a mixing tank (no more than 60-70°C) and either arrange gravity feed of the solution directly into the boiler or connect the mixing tank to the circulation line between the water blow down flange and the pump. Use auxiliary feed line to feed the solution into the boiler so it flows via the economizer to the steam drum and then to the water drum, through the boiler tubes and subsequently out of the blow down connection. Secure all connections, half fill the boiler with fresh water and slowly add the product to obtain a solution of 10-30% and then start the circulation pump. Maintain the circulation for 8-16 hours, making sure that the acid strength of the solution remains stable by checking periodically and adding product as required. Periodically test the solution strength. If it quickly neutralizes even after DG-11 addition, drain off and re-start with a fresh solution. Rinse thoroughly the boiler with fresh water and circulate a 1-2% solution of BT-02 – Alkalinity Control for at least 3 hours or until a neutral pH is obtained.

D. Soaking Method

This method will produce acceptable cleaning results where recirculation, especially on heat exchangers, cannot be arranged. Disconnect exchanger from circuit and drain. Use one of inlet/outlet connections or cleaning plugs to provide a steam feeding pipe into the exchanger. Leave uppermost connection/plug open for ventilation. Fill the exchanger with warm water. Check the acid solution strength. Allow the product to act and periodically apply steam to maintain temperature. Thoroughly flush with fresh water and as a final step use a solution of 1-2% of BT-02 – Alkalinity Control to neutralize the remaining acids.

Further Technical Data:

Form	Liquid
Appearance	Blue
Density	1,15
pH	1
Avoid aluminium, zinc, tin and their alloys and galvanized surfaces. May swell synthetic rubber	

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Material Safety Data Sheet and / or Product label.



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DG-12 – Descaler Powder

Description:

DG-12 is a special mixture of dry powder acid, wetting agents, corrosion inhibitors and antifoaming agents, designed to remove rust and scale deposits. The wetting agent enhances the action of the sulfamic acid in removing deposits by its surface active cleaning properties.

Features:

DG-12 is recommended for descaling boilers, evaporators, condensers, heaters and coolers. It may also be applied for scale removal from steam pipes and air conditioners.

Benefits:

Fast and effective scale and rust remover. Contains descaling accelerators that reduce the cleaning time. With inhibitors against corrosive attack. Contains pH sensitive indicator. Powder product - safe handling and storage. Safe to use on all metals.

Usage:

Descaling can be accomplished by circulation, for large components and systems, by in-situ soaking, or by soaking in an immersion bath for small components. The most effective method is by circulation as it ensures renewal of acid film in contact with the scale. If the deposits to be removed are covered with oil or grease, a degreasing treatment with a solution of 2% to 8% DG-01 – Solvent Based Oil And Grease Remover with water should be carried out prior to descaling. Circulate the solution for 4 to 6 hours. To accelerate the cleaning process the solution should be heated up to a temperature of 60°C.

A. Recirculation Method Heatexchangers, Evaporators, Condensers

Heat a 5-10% solution of DG-12 in water for best results (up to 50°C). Recirculate the solution through the heat exchanger by means of a pump for at least 6-10 hours and maintain solution temperature is possible. Periodically test solution acid strength and add DG-12 as required. Rinse off by connecting the heat exchanger to a supply of fresh water. The last step involves circulation of a 1-2% solution of BT-02 – Alkalinity Control for a minimum time of 3 hours or until a neutral pH is obtained.

B. Cooling Water Systems

Follow same procedure as above. A sufficient quantity of chemical will be required to maintain acid strength throughout the cleaning operation. Place scale samples in easily observed positions to monitor the progress.



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DG-12 – Descaler Powder

C. Boiler Scale Remover

Prepare a DG-12 solution in a mixing tank (no more than 60-70°C) and either arrange gravity feed of the solution directly into the boiler or connect the mixing tank to the circulation line between the water blow down flange and the pump. Use auxiliary feed line to feed the solution into the boiler so it flows via the economizer to the steam drum and then to the water drum, through the boiler tubes and subsequently out of the blow down connection. Secure all connections, half fill the boiler with fresh water and slowly add the product to obtain a solution of 5-10% and then start the circulation pump. Maintain the circulation for 8-16 hours, making sure that the acid strength of the solution remains stable by checking periodically and adding product as required. Let the steam run into the solution to maintain a temperature of 60°C. Periodically test the solution strength. If it quickly neutralizes even after DG-12 addition, drain off and re-start with a fresh solution. Rinse thoroughly the boiler with fresh water and circulate a 1-2% solution of BT-02 – Alkalinity Control for at least 3 hours or until a neutral pH is obtained.

D. Soaking Method

This method will produce acceptable cleaning results where recirculation, especially on heat exchangers, cannot be arranged. Disconnect exchanger from circuit and drain. Use one of inlet/outlet connections or cleaning plugs to provide a steam feeding pipe into the exchanger. Leave uppermost connection/plug open for ventilation. Fill the exchanger with warm solution of DG-12 in fresh water. Check the acid solution strength. Allow the product to act and periodically apply steam to maintain temperature. Thoroughly flush with fresh water and as a final step use a solution of 1-2% of BT-02 – Alkalinity Control to neutralize the remaining acids.

Further Technical Data:

Form	Powder
Appearance	Colorless
Specific Gravity	2,15
pH	1-2
Non Compatible Avoid aluminium, zinc and galvanised steel	

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Material Safety Data Sheet and / or Product label.



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DG-13 – Cement Remover

Description:

DG-13 is strong acid compound specially designed for the removal of cement deposits from most common surfaces.

Features:

DG-13 is used for removing cement residues from all common metal surfaces. It must not be used on zinc, aluminum, galvanized materials and stainless steel.

Benefits:

Acid-based product of mild odour. Contains powerful inhibitors for surface protection. Perfect and quick action. Water-soluble, non-flammable. Does not contain any hydrocarbon or chlorinated solvents. Cost effective: dilute for most cleaning needs. Biodegradable and non flammable.

Usage:

The product may be used undiluted or diluted, depending on the case. Where heavy deposit buildup occurs, use DG-13 undiluted. Where light deposition on large surfaces occurs, use DG-13 as a solution of 50% water. DG-13 is used by many conventional means, such as brush, spraying machine, sponge or tank for immersion. Allow 15 minutes for the product to act and then wash thoroughly with water.

Further Technical Data:

Form	Liquid
Appearance	Red
Density	1,10
pH	1
Avoid aluminium, zinc, tin and their alloys and galvanised surfaces	

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Material Safety Data Sheet and / or Product label.



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DG-14 – Rust Stain Remover

Description:

A liquid, acid based rust remover and surface brightener.

Features:

DG-14 is used to remove stains from painted surfaces, steel, glass, porcelain, and terrazzo, ceramic tiles, marble and wood. It is suitable for removing rust stains from all types of ferrous metals and leaves metal surfaces passivated so they will resist atmospheric corrosion. DG-14 can also act as a rust proofing agent on steel surfaces prior to any painting or coating application.

Benefits:

Multi-purpose cleaner. Quick removal of rust and rust stains from painted, wooden and ceramic surfaces. Protects surfaces from corrosion and brightens non-ferrous metals. Acts as a rust proofing agent on metal surfaces. Safe to apply on all kinds of surfaces including aluminium. Metal brightener: cleans & brightens aluminium and copper. Biodegradable, non-flammable.

Usage:

DG-14 should always be used in a plastic bucket. The acid should always be added to water, never the reverse. For removal of rust stains and oxide stains on aluminium, brass, copper and stainless steel, apply DG-14 (after removal of oil and grease) neat with a brush, rag, etc. Wash off after 15 minutes. Repeat if necessary. Do not let DG-14 dry on surfaces as it may leave a hard white deposit. For steel surfaces remove oil, grease and old paint. Wet down the entire surface with neat DG-14 and allow to dry. Second wash may be necessary. Surface should have a grey/white appearance when the DG-14 is dry. Steel surfaces will have a resistance to rust and will render a good base for paint. For removal of rust stains on painted surfaces and wood, DG-14 should be applied at full strength for heavy stains, or diluted to 30-50% for light stains. Allow to soak for 20 to 30 minutes and wash off with water. A second application may be necessary to remove the stubborn stains.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,20
pH	1-2
Long term exposure will cause corrosion of mild steel, cast iron, aluminium and alloys, brass, tin or galvanised material	

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Material Safety Data Sheet and / or Product label.



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DG-15 – Separator Disc Cleaner

Description:

DG-15 is an especially formulated blend of surfactants, solvents and acids designed to remove carbonaceous and varnish deposits from lube-oil and fuel-oil separator discs.

Features:

DG-15 can be used for cleaning all types of separators and separator discs. It is suitable for cleaning of disassembled units parts.

Benefits:

Removes carbonaceous and varnish deposits from discs. Cleans all types of separator discs. Reduces cleaning time. Safe to use and does not corrode disc material. Leaves a residue-free surface. Reduces downtime. Non-flammable.

Usage:

DG-15 is used diluted in water. Dose rates of DG-15 mostly governed by the degree of contamination, the heating conditions and the available downtime. For moderate contamination, use a 25% solution of DG-15 in water. For best results, heat water to 50-60°C. The required cleaning time fluctuates between 1-3 hours, depending on the contamination level.

A. Cleaning without dismantling:

Circulate the required amount of product through the separator for 1-3 hours and rinse off with water. (Note that heating will enhance performance).

B. Soaking Method:

Place discs in a hot bath (non-galvanized) of DG-15 solution and circulate. After immersion, remove discs and rinse off with plenty of water. Persistent deposits may require the use of a wire brush.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,1
pH	1
Long term exposure will cause corrosion of mild steel, cast iron, aluminium and alloys, brass, tin or galvanised material	

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Material Safety Data Sheet and / or Product label.



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TANK CLEANERS



TC-01 – Heavy Duty Alkaline Tank Cleaner

Description:

Strong alkaline liquid degreasing agent for the removal of vegetable, fish and animal oils and fats from epoxy / polyurethane coated or stainless steel tanks by injection or circulation method.

Features:

TC-01 has an extensive application on most tank cleaning operations. It is applied as a diluted solution to remove greases, vegetable and animal oils, pet coke deposits, dirt and grime. It is also suitable when there is a large amount of soil to be cleaned. TC-01 may be used as an effective deodoriser of refrigerating cargo holds, or petroleum-based tanks. It is very effective on dried oil films. When cleaning from "black" to "white" and from "black" to grain it is a useful final treatment.

Benefits:

Rapid emulsifier of vegetable, animal and fish sediments. Final treatment for cleaning tanks from black to white or grain. Ideal to use for cleaning after coal and pet coke. Free from petroleum solvents, Non flammable. Can be used as an acid-neutralising agent. Can be mixed in all proportions with fresh or seawater. Cleaning refrigerated holds, containers and cargo holds. Safe to use on most ferrous metal surfaces. Easy to use and can be automated.

Usage:

A. Tank Recirculation Method

TC-01 is added to a mixing tank containing a fresh water quantity of 1-2 % of the capacity of the tank to be cleaned. Using a cleaning solution of 1-3 % heated to 60-80°C, wash the tanks by circulation for 2-6 hours, after which the solution can be recycled to the mixing tank for reuse. One solution can normally be used to wash several tanks, after circulation rinse thoroughly with water.

B. Direct Injection Method

Inject 1-3 litres of TC-01 per 100 litres of wash water directly into the tank washing system. Heat to 60-80°C. After cleaning rinse thoroughly with water.

C. Rinsing

In many cases an after treatment with TC-01 solution is recommended for the removal of white lime deposits originating from sea water and/or residues out of the cargo. Inject 0,5 litre TC-01 per 100 litres of wash water directly into the tank washing system for approx. 20 minutes. The recommended temperature is 75-85°C. Finally wash the tanks thoroughly with cold fresh water.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,40
pH	13-14
Non Compatible Avoid aluminium, zinc and galvanised steel	

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TC-02 – Non-Caustic Alkaline Tank Cleaner

Description:

TC-02 is a powerful non caustic alkaline cleaner formulated for cleaning vegetable and animal oils, fatty acid and greases, whether or not hardened or carbonised. The product is safe to use on epoxy-coatings. It is suited to use on most metals except for aluminium, tin, zinc and galvanised material.

Features:

TC-02 is a powerful cleaner for cleaning of cargo tanks after discharge of drying, semi-drying and non-drying natural oils and fats. Alkleen Liquid can be used for tank sanitising and deodorising prior to changing to food-stuffs. To achieve the high standard of cleanliness required, a final wash will be necessary by using this product.

Benefits:

Adds substantial degree of safety to the washing process due to its noncaustic base. Minimizes the extreme hazards to ship's personnel in handling caustic based materials. Biodegradable, non-toxic, nonpollutant. Can be used as deodorizing wash. Also used on chemical contamination in tanks. Suitable on Ferro metals and stainless steel. TC-02 is easily washed out of tanks. Can be used in water with high Cl contents. TC-02 contains a water-hardness stabiliser. Can also be used as final treatment for cleaning tank from black to white or grain. Can be used for hydrocarbon freeing of cargo tanks.

Usage:

A. Prewashing

Prior to cleaning with TC-02, it is advised to wash with hot water of approximately 80°C. In case of drying and semi-drying oils, prewashing is to be done with cold water.

B. Spraying

Depending on the amount and character of the contamination, TC-02 is to be used pure or diluted at a temperature of 20 - 60°C. Allow the product to work for 20 to 60 minutes and pray afterwards with a powerful high pressure waterjet. Warm water is to be preferred.

C. Recirculation

With this method, the cleaning chemicals are added to a prior determined amount of cleaning chemicals is usually 1% of the capacity of the tank is to be cleaned.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,30
pH	13-14
Non Compatible Avoid aluminium, zinc and galvanised steel	

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TC-03 – Non-Toxic, Water-Based Safety Alkaline Cleaner

Description:

TC-03 is a non-toxic, water-based alkaline cleaner. It contains fast penetrating and wetting agents to remove soils and corrosion inhibitors to prevent corrosion on zinc, aluminium copper, tin or brass.

Features:

TC-03 provides an excellent alternative to solvent-based and highly-alkaline cleaners. It can be applied for cleaning of cargo tanks, containers or cargo holds or following the discharge of drying, semi-drying or non-drying natural oils or fats. Simple, light-rust preventive oils and water-soluble coolants are easily removed with mildly alkaline cleaners at moderate temperatures.

Benefits:

Multi-purpose cleaner to be used where alkaline cleaner is not suitable. Prevents re-depositing by maintaining a suspension solution of solid particles. Suitable for gas and hydrocarbon freeing of tanks. Non corrosive to ferrous metals, suitable for all tank coatings. Minimizes the extreme hazards to ship's personnel in handling caustic based materials. Minimization of environmental concerns.

Usage:

A. Prewashing

Precleaning tanks with high pressure warm water is highly recommended since large deposits of oil or other residues in the tank must be removed to ensure an effective cleaning operation. In the case of drying or semi-drying oils, prewash with cold water.

B. Injection Method

Spray the sides of the tanks with a 2-4% solution of TC-03 until they are properly coated. Allow the product to act for 30 minutes. Rinse with warm water for 45 minutes. Best results are achieved in temperatures between 60 to 80°C.

C. Recirculation Method

Prepare a 5% solution of TC-03 in a separate mixing tank. Using an automatic tank washing machine, recirculate for 4 to 6 hours. Best results are achieved in temperatures between 60-80°C. Heat is normally achieved by the use of heating coils in tanks or by heating the system outside the tank. Ensure that there is sufficient cleaning solution in the tank for continuous recirculation.

D. Rinsing

An important part of the cleaning process is the rinse stage. As the substrate leaves the cleaner stage, it carries spent cleaner, emulsified soils and other contaminants. If not immediately rinsed, these contaminants can redeposit on the part and become difficult to remove. The rinse must remove these unwanted materials and not interfere with subsequent operations. Hot water can assist in rinsing; however, care must be exercised so that drying does not occur just before the rinse tank. Double rinsing is common, using either deionized water for spot-free parts or adding a corrosion inhibitor to the final rinse if rusting is a problem.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,10
pH	13
Non Compatible Avoid aluminium, zinc and galvanised steel	

For detailed information on safety and health, please refer to
Material Safety Data Sheet and / or Product label.



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TC-04 – Heavy Duty Concentrated Tank Cleaner

Description:

TC-04 is a heavy duty, highly concentrated low-toxic, biodegradable solvent based tank cleaner with strong emulsifying action and low odour. This product is excellent as a tank cleaner and degreaser.

Features:

TC-04 has a wide range of applications. It is suitable for cleaning double bottom, deep tanks, cargo tanks and bilges or generally fuel oil storage tanks. It may also be used for engine room and/or deck cleaning and degreasing.

Benefits:

Super concentrate (solvent/detergent content: 94%). Hydrocarbon free (contains water soluble solvents and detergents). Leaves no smell in cargo tanks. Contains no acids, alkali and phosphates. Cause no danger to the environment and is no dangerous good in regulation of transport and storage. Can be used for cleaning and gas-freeing of double bottom, deep and fuel oil tanks. Can be used for cleaning and gas-freeing of crude and refined mineral oil cargo tanks. Can be used for cleaning and degreasing of bilge spaces and engine rooms. Safe for use on most common metals, epoxy, polyurethane and zinc silicate coatings. Easy rinse off, leaving clean and oil-free surfaces. Economical, very low dosage rates.

Usage:

A. Prewash

Before cleaning with TC-04, it is recommended to pre-wash with hot water at approximately 50°C. For drying and semi-drying oils a pre-wash with cold water should be applied.

B. Direct Injection Method

Introduce a solution 0,1-2,0% of TC-04 directly into the tank wash water line by means of an eductor or a small pump. The tank should be stripped continuously while washing. Rinse the tank with ambient temperature water immediately.

C. Recirculation Method

It is recommended to use a solution of seawater and TC-04 for this method. The total quantity of product should be increased by 30-40% over the direct injection method to produce equivalent results. The procedure is the same as the direct injection method except for the fact that the tanks being washed are stripped back to the recirculation tank. Care should be taken to observe when the solution becomes saturated.

D. Spot Cleaning

TC-04 can be sprayed neat onto tank surfaces to be cleaned. Optimum results are achieved when hot water (between 60 to 80°C) is used and when contact time is at least 30 minutes. Bulkheads/walls can be washed down by the use of tank washing machines or high pressure cleaning machines.

Further Technical Data:

Form	Liquid
Appearance	Red
Density	0,90
pH	-
May swell rubber and synthetic rubber	

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TC-05 – Solvent Based Tank Cleaner

Description:

TC-05 is a specially formulated chlorinated hydrocarbons-free tank cleaner and degreaser, based on low odour solvents, emulsifiers and surfactants.

Features:

TC-05 is suitable for cleaning Cargo Tanks, Bilge Tanks, Holds, Pump & Engine Rooms. It can also be used in oil coolers, fuel oil pre-heaters and heat exchangers.

Benefits:

Multipurpose emulsifier with a wide range of applications for cleaning and degreasing. Can be used for general removal of oil, grease and petroleum-based chemicals from soiled surfaces. Can be used for cleaning and gas-freeing of double bottom, deep and other fuel oil tanks at sea. Can be used for cleaning and gas-freeing of crude and refined mineral oil cargo tanks. Safe to use on most metal surfaces, does not affect coatings. Lower total operating costs for the cleaning job, due to reduced cleaning time and lower utility consumption.

Usage:

A. Prewash

Before cleaning with TC-05 it is recommended to prewash with hot water at approx. 50°C, except for drying and semi-drying oils where a prewash with cold water should be used.

B: Recirculation Method

In this method TC-05 is added to a separate tank containing a previously determined quantity of water. The quantity of water required for cleaning the tank usually amounts to 1% of the capacity of the tank to be cleaned. The solution is heated by means of heating coils in the tanks. The tanks are washed using a cargo pump after which the used solution is recycled to the mixing tank. In the recirculation method use is often made of the sloptank for the preparation of the cleaning solution. One solution is normally used to wash 2-3 tanks after which a new batch must be prepared. TC-05 must be circulated as a 2-6% emulsion. Allow this emulsion to circulate for 1-3 hours at a temperature of between 20-50°C. After the circulation period, rinse thoroughly with water.

C. Spray method

Spray the tank walls with undiluted TC-05 until they are thoroughly dampened. Allow the product to soak for at least 30 minutes. Rinse each tank compartment for 45 minutes with water at 60°C.

D. Spot Cleaning

For spot cleaning, use the manual Spraying method described above. However, TC-05 is not suitable for hydrocarbon free cleaning operations. In such cases it is recommended to use TC-06 (Heavy Duty Water Based Hydrocarbon Free Tank Cleaning Agent).

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	0,98
pH	-
May swell rubber and synthetic rubber	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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TC-06 – Heavy Duty Water Based Hydrocarbon Free Tank Cleaner

Description:

TC-06 can be used for the removal of vegetable and / or animal oils, fats, and light mineral oils in aluminum and /or zinc-silicate coated tanks. TC-06 is formulated with neutral pH Grease cutting nonionic surfactants to efficiently dissolve and clean organic soils from delicate tank surfaces.

Featutres:

TC-06 is extremely efficient to remove vegetable fats, animal fats and oils from epoxy and zinc-silicate coatings and from most metal surfaces (ferrous alloys, tin, zinc, aluminum and galvanized surfaces). On epoxy coatings, it is recommended that the product is used diluted. Hand-spray the product, after hydrocarbon cleaning processes, to achieve Gas-Free results. It is free from Hydrocarbon solvents and minimizes the extreme hazards to personnel in handling materials.

Benefits:

Heavy duty water based tank cleaner. Effectively removes all vegetable and animal fats and oils, and light mineral oils, dry or not. Suitable to use when strong alkaline cleaners are not recommended. Removes Grease, oil, carbon deposits, soil and grime. Keeps loosened deposits in suspension preventing re-deposition. Low toxic, Non-flammable. Free from hydrocarbon solvent. Effective and economical in use, water-based cleaner. Non-corrosive to ferrous metals. Safe to use on epoxy and zinc-silicate coatings. Suitable for all tank-coatings. Can be used for gas and hydrocarbon freeing of tanks.

Usage:

A. Prewash

Pre-wash before cleaning with TC-06. It is recommended to prewash with hot water at 50°C. For drying and semi-drying oils a pre-wash with cold water should be carried out immediately after discharge of cargo to retard oxidation and hardening of oil residues.

B. Re-circulation method

A chemical solution is prepared in an empty slop tank or one of the after tanks near the pump room, circulated via the automatic tank washing system pump and heater to the tank to be cleaned, where the solution is returned to the chemical solution tank via the stripping line. Usually it is not possible to recirculate the chemical solution through the tank washing system heater (to maintain solution temperature) without making a temporary connection between the chemical solution tank and the tank washing pump. Capacities of solution tank, pipeline and pumps etc. should be calculated carefully to ensure sufficient volumetric quantity for a continuous recirculation. Depending on size and condition of tanks to be cleaned and quantity of chemical solution, a drawback in this method is that usually only 3 (three) tanks can be cleaned with one solution after which a fresh solution should be made and heated before cleaning can continue. Depending on the degree of contamination TC-06 is circulated as a 5% solution for a period of 2-6 hours. The water temperature should be approximately 20-60°C. After the circulation period rinse thoroughly with water.



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TC-06 – Heavy Duty Water Based Hydrocarbon Free Tank Cleaner

C. Spray Method

Spray the hot tank surfaces with undiluted TC-06 until the surfaces are well soaked and let the product act for at least 30 minutes. Then rinse all tank surfaces with water at approximately 60°C for 45 minutes.

D. Hydrocarbon Free Cleaning

After cleaning with TC-06 and rinsing with hot fresh water at a maximum temperature of 60°C, hand spray a 15% TC-06 solution in fresh water on to the hot tank surfaces and let it act for 30 minutes. Rinse thoroughly with hot chloride free water when cleaning is completed. If fresh water is used, steam tanks afterwards to remove any chlorides which may cause delay in passing the chloride test for methanol, etc.

Further Technical Data:

Form	Liquid
Appearance	Red
Density	0,95
pH	7--8
Non Compatible Avoid aluminium, zinc and galvanised steel	

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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TC-07 –Water Based Neutral Tank Cleaning Detergent

Description:

TC-07 a pH-neutral, liquid concentrated detergent with good cleaning qualities. It contains effective but mild and environmentally safe wetting agents and surfactants that allow rapid penetration to remove fats and oils.

Features:

TC-07 efficiently cleans surfaces from animal oil, vegetable oil, fish oil, fat and waxes. Suitable for use on most tank coatings including aluminum, zinc alloy and other light metal alloys. It can be used on most common metals, synthetic materials, rubber and hardened paints and lacquers.

Benefits:

Light detergent power. Non-caustic, pH neutral. Solvent free. Non-flammable. Leaves grease-free surfaces. Rapid penetration. Rapid rinsing. Can be used on ferrous metals, aluminum, tin, zinc, copper and their alloys. Saves time and reduces labor costs. Non corrosive. Non flammable

Usage:

A. Recirculation Method

The most economical method of using TC-07 is by recirculation, using tank cleaning machines. The solution should have a strength of approximately 2–5% in preferably fresh water. Whenever possible, the cleaning solution should be heated to 50–80°C. Rinse off with hot fresh water.

B. Hand Spraying Method

TC-07 may be used by hand-spraying on the tank, using a 20–50% solution. Allow the chemicals to stay on the tank surface and finally rinse with hot water. When the tank is cleaned to a “water white standard”, remove any free water and ventilate until the tank is dry.

C. General Cleaning

TC-07 may be applied undiluted or diluted in water, just like any other common liquid soap with conventional ways such as a brush, sponge and/or a mop.

Further Technical Data:

Form	Liquid
Appearance	Blue
Density	1,0
pH	8

For detailed information on safety and health, please refer to

Material Safety Data Sheet and / or Product label.



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TC-08 – Stainless Steel Passivating Liquid

Description:

TC-08 is only suitable for use on austenitic stainless steel. The product is mainly used for passivating stainless steel installations and tanks.

Features:

TC-08 is used for passivating the already pickled installations and tanks. The product can also act as a cleaning agent on austenitic steel that is in a good state but has been contaminated with dirt.

Benefits:

Fast passivating reaction. Shall be used only after pickling has occurred. Shall be used undiluted on stainless steel. Non-Flammable, Non-Conductive and Non-Toxic. Cost effective, easy to apply and use. Forms uniform protective oxide film. Suitable for cleaning aluminum.

Usage:

A. Circulation Method

This method is applied in pipe systems. Fill the systems with undiluted TC-08. Use the product cold and allow approximately 2 hours for it to act. Drain the system and rinse thoroughly with demineralized water until the system is free of acid.

B. Spraying Method

This method is mainly used for treatment of large surfaces such as cargo and storage tanks. The product is sprayed as a 10% solution using suitable tank washing machine. The treatment procedure is the same as the circulation method.

C. Soaking Method

Fill a plastic or plastic-lined bath with undiluted TC-08. Place the components to be pickled in the bath and leave them to soak for 1 to 6 hours. Then, remove from the bath and spray demineralized water using a powerful water jet. Passivation with TC-08 should follow immediately.

D. Aluminum Cleaning

The product is diluted with water (1:1 ratio). Residence time is approximately 2 hours. Rinse thoroughly with water until the parts are free of acid. The cleaning solution must be cold and neutralized before draining.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,1
pH	1-2
Long term exposure will cause corrosion of mild steel, cast iron, aluminium and alloys, brass, tin or galvanised material	

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TC-09 – Stainless Steel Pickling Liquid

Description:

TC-09 is based on nitric acid, hydrofluoric acid and non-ionic surface-active substances. The fluid may be used only on austenitic stainless steel as it corrodes other materials. It removes weld slag, annealing scale, grinding dust and iron parts etc.

Features:

TC-09 is only suitable for use on austenitic stainless steel. The product is mainly used for pickling stainless steel installations and tanks.

Benefits:

Shall be used only on stainless steel. Removes weld slag, annealing scale, grinding dust and iron particles. Fast pickling reaction. Forms uniform protective oxide film. Suitable for cleaning aluminum. Prepares for proper passivation. Non-Flammable, Non-Conductive and Non-Toxic. Cost effective, easy to apply and use

Usage:

A. Circulation Method

This method is mainly applied in pipe systems. Fill the system with undiluted TC-09. Use the product cold and allow a residence time of approximately 1 to 6 hours to act, depending on the degree of soiling and on the type of steel. Do not pickle longer than necessary. Drain the system and rinse thoroughly, preferably with demineralized water. After rinsing, passivation with TC-09 should follow immediately.

**** Neutralize the pickling liquid with slaked lime before its disposal.****

B. Spraying Method

This method is mainly used in tank washing devices. Spray pickling can be done on-site but should be done with the appropriate safety and acid disposal procedures and equipment. The product is sprayed undiluted. A spray time that varies between 1 to 6 hours is sufficient. After spraying, the pickling liquid is pumped and the tank is rinsed with demineralized water until it is free of all acid. After drying, passivation with TC-09 should follow immediately.

C. Tank Immersion Method

The immersion pickling usually involves off-site pickling. It has the advantage of treating all the surfaces for optimum corrosion resistance and uniformity of pickled finish. Fill a plastic or plastic-lined bath with undiluted TC-09. Place the components to be pickled in the bath and leave them to soak for 1 to 6 hours. Then, remove from the bath and spray demineralized water using a powerful water jet. Passivation with TC-09 should follow immediately. Note that immersion temperature and duration affect the result of the pickling process.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,1
pH	1
Non Compatible Avoid aluminium, zinc and galvanised steel	

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TC-10 – Rust and Stain Remover

Description:

A liquid, acid based rust remover and surface brightener.

Features:

On some coatings, washing with hot sea water after discharge of caustic or different lye cargoes, may result in white stains or stripes on tank surfaces. TC-10 can be used to remove these white stains/stripes.

Benefits:

Cleans and brightens aluminium and copper. Removes rust stains without risk to paintwork. Safe on most common metals. Removal of white stains/stripes on tank coating.

Usage:

Inject 0,5 litre of TC-10 for every 100 ltrs of washing water, directly into tank washing system (Butterworth system). Wash each tank for approx. 20-30 minutes (1 washing cycle). Recommended temperature of washing water is 75 - 80°C. Finally rinse each tank with fresh water. Always add TC-10 to water. TC-10 should not be used on galvanised or tinned surfaces.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,1
pH	1
Long term exposure will cause corrosion of mild steel, cast iron, aluminium and alloys, brass, tin or galvanised material	

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Material Safety Data Sheet and / or Product label.



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TC-11 – Dye Remover From Tank Coatings

Description:

TC-11 is a specially formulated water based alkaline tank cleaner. TC-11 is bio-degradable and free from hydrocarbon solvents and estrogenic compounds. Safe to be used on epoxy coatings. It removes traces of discolouration, before loading sensitive cargoes.

Features:

TC-11 is extremely efficient to remove red and/or yellow dye discolouration/stains in cargo tanks in Tankers caused by carriage of dyed gasoline cargoes.

Benefits:

Heavy duty water based alkaline tank cleaner. Removes dye discoloration. Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Biodegradable. Free from hydrocarbon solvents. Completely safe to use on epoxy coatings. Effective and economical in use.

Usage:

Make a 2% solution in seawater in one of the slop tanks. Usually 2% solution is sufficient. Suggested water quantity: 30 – 50 tons depending upon ship's size. Re-circulate this solution in 3 cargo tanks over 6 hours. 1 solution is usually sufficient for 3 tanks. Proceed to make a wall wash test on the surfaces, testing for colour. Rinse the tanks with either seawater or freshwater depending upon the next cargo.

Further Technical Data:

Form	Liquid
Appearance	Pale Yellow
Density	1,20
pH	12

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CARGO HOLD CLEANER



CH-01 – Heavy Duty Alkaline Cleaner High Foam

Description:

CH-01 is a heavy duty alkaline cleaner with good foaming qualities specially formulated for cleaning cargo holds on bulk carriers and OBOs. CH-01 is highly concentrated, comprising special detergents, surfactants and corrosion inhibitors.

Features:

CH-01 can be used to clean cargo holds on bulk carriers and OBOs, tanks and refrigeration vessels after coal, pet coke, oily residues, concentrates, and other difficult cargoes. Further diluted, it removes lighter grease and dirt deposits. CH-01 can be quickly dissolved in water for cleaning after coal, pet coke, oily residues, concentrates, and other difficult cargoes.

Benefits:

Heavy Duty alkaline water based cleaner. Specially formulated for the cleaning of cargo holds. Does not contain nonyl phenol ethoxylates or other estrogenic compounds. Biodegradable. Free from hydrocarbon solvents. Ideal for cleaning after coal, pet coke and other difficult cargoes. Effective and economical in use. Completely safe on epoxy coatings

Usage:

Precleaning tanks with high pressure warm water is highly recommended since large deposits of oil or other residues in the tank must be removed to ensure an effective cleaning operation.

Dilute from 5 to 20% of CH-01 in fresh water. Spray the solution onto the surface, using spray foam equipment. Allow solution to penetrate soil for 10-30 min. and then wash off thoroughly with high pressure fresh water. Always wash off before chemicals dry on the surface.

The high foaming action of CH-01 allows the chemicals to stick to the surface longer, before drying. For heavily soiled areas, a preliminary cleaning is required. If surface is heavily contaminated, higher concentrations of the product in water can be used.

For general use, dilute appropriately, depending on the contamination and use conventional cleaning methods, such as brushing, scrubbing or spraying. Allow the product to act and then rinse off with fresh water before drying.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,30
pH	13-14
Non Compatible Avoid aluminium, zinc and galvanised steel	

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Material Safety Data Sheet and / or Product label.



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CH-02 – Rust Remover For Cargo Hold Surfaces

Description:

Liquid detergent compound containing phosphoric acid and nonionic surfactants, used for rust removal and as a surface brightener.

Features:

CH-02 is used to remove stains from painted surfaces, steel, glass, porcelain, and terrazzo, ceramic tiles, marble and wood. It is suitable for removing rust stains from all types of ferrous metals and leaves metal surfaces passivated so they will resist atmospheric corrosion. CH-02 can also act as a rust proofing agent on steel surfaces prior to any painting or coating application.

Benefits:

Multi-purpose cleaner. Quick removal of rust and rust stains from painted, wooden and ceramic surfaces. Protects surfaces from corrosion and brightens non-ferrous metals. Acts as a rust proofing agent on metal surfaces. Safe to apply on all kinds of surfaces including aluminium. CH-02: cleans & brightens aluminium and copper. Biodegradable, non-flammable.

Usage:

CH-02 should always be used in a plastic bucket. The acid should always be added to water, never the reverse.

For removal of rust stains and oxide stains on aluminium, brass, copper and stainless steel, apply CH-02 (after removal of oil and grease) neat with a brush, rag, etc. Wash off after 15 minutes. Repeat if necessary. Do not let CH-02 dry on surfaces as it may leave a hard white deposit.

For steel surfaces remove oil, grease and old paint. Wet down the entire surface with neat CH-02 and allow to dry. Second wash may be necessary. Surface should have a grey/white appearance when the CH-02 is dry. Steel surfaces will have a resistance to rust and will render a good base for paint.

For removal of rust stains on painted surfaces and wood, CH-02 should be applied at full strength for heavy stains, or diluted to 30-50% for light stains. Allow to soak for 20 to 30 minutes and wash off with water. A second application may be necessary to remove the stubborn stains.

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,1
pH	1
Long term exposure will cause corrosion of mild steel, cast iron, aluminium and alloys, brass, tin or galvanised material	

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Material Safety Data Sheet and / or Product label.



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Description:

CH-03 is a water based liquid product specially formulated to leave a thin, temporary film on cargo hold surfaces. The film provides a barrier between the cargo and the cargo hold surfaces making the cleaning operation after unloading quicker and easier, and optimal cleaning result is achieved.

Features:

CH-03 is a unique blend of natural ingredients and film stability improvers, that can be easily applied by ships own crew before loading. CH-03 effectively prevents stains and footprints of cargoes adhering to the surfaces of cargo holds and/or causing corrosion and are difficult to clean. Therefore, cargo holds can be kept “grain clean” with much less effort and cost.

CH-03 acts as a barrier and release agent between the cargo hold surface and the next cargo. It should be applied on clean surfaces.

CH-03 has been found to be harmless to normal cargoes, coatings and the environment.

Benefits:

Water soluble cargo hold barrier – easily removable with water. Saves cleaning time and cleaning chemicals. Ideal when cleaning after coal, pet coke and other difficult cargoes. Completely safe on all coatings. Prevents even the most difficult cargo to adhere to the coating. Easy to apply – easy to remove. Provides temporary protection against corrosion. Water based – free from hydrocarbon solvents.

Usage:

The cargo hold surfaces should be as clean and dry as possible before treatment. CH-03 is supplied at ready-to use concentration and may be applied directly from the drum. Spray the liquid on the cargo hold surfaces by the use of suitable low-pressure spraying equipment. As soon as the surface appears water wet, a proper film is created; do not apply more than necessary. 1 litre CH-03 will cover 15–20 m2. Allow the film to dry completely before loading the cargo. Depending on air temperature and humidity this will take 1–2 hours. After reloading, apply a 2–5% solution of a cleaning agent in water to avoid re-deposition of contaminants, and finally flush with clean, high pressure water. Suitable cleaning agents are:

CH-01 – Heavy Duty Alkaline Cleaner High Foam

TC-03 – Non-Toxic, Water-Based Safety Alkaline Cleaner (on zinc silicate coatings)

TC-02 – Non-Caustic Alkaline Tank Cleaner.

After flushing with water, let the surfaces dry and then repeat the treatment with applying CH-03 before next cargo

Further Technical Data:

Form	Liquid
Appearance	Colorless
Density	1,0
pH	7



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RAW MATERIALS

D.I. WATER
METHANOL
HYDROCHLORIC ACID
NITRIC ACID
SULPHURIC ACID
CAUSTIC SODA FLAKES
POTASSIUM HYDROXIDE FLAKES
SODIUM HYPOCHLORITE
ISO PROPYL ALCOHOL
BUTYL GLYCOL
ACETONE
METHYL ETHYL KETONE
METHYL ISO BUTYL GLYCOL
MONO ETHYLENE GLYCOL
MONO PROPYLENE GLYCOL
METHYLENE CHLORIDE
TOLUENE
WHITE SPIRIT
KEROSENE
XYLENE



MARINE GASSES

OXYGENE GASSES / OKSİJEN GAZI
ACETYLENE GASSES / ASETİLEN GAZI
FREON GASSES / SOĞUTUCU GAZLAR



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EQUIPMENTS

WALL-WASH TEST KIT
COOLING WATER TEST KIT (TABLET TYPE)
COOLING WATER TEST KIT (DROP TYPE)
BOILER WATER TEST KIT (TABLET TYPE)
BOILER WATER TEST KIT (DROP TYPE)
OIL SPILL KIT
DOSING PUMP
LAB. TEST EQUIPMENTS



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