EVERTEC
Est 1994

RUST CONVERTERS, WATER TREATMENT & FUEL TREATMENT

Product catalog January 2020
Including Comparison- and Problem & solution guide

RUST CONVERTERS, WATER TREATMENT AND FUEL TREATMENT

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RUST CONVERTERS

WATER TREATMENT

FUEL TREATMENT

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ETR 300 RUST REMOVER, PRIMER

Very fast acting and efficient rust removing agent

APPLICATIONS

- For removal of rust
- Used as a protective pre-treatment for iron and steel, prior to painting
- For removal of tarnish from brass, copper, steel, aluminium, chrome and stainless steel
- Removal of rust stains from painted surfaces, vitreous enamels, porcelain, terrazzo, ceramic tiles, glass and wood
- For pickling iron and steel surfaces after a welding repair
- For removal of flash rust from mild steel cargo lines and tanks
- To remove discoloration from stainless steel and epoxy coated tanks
- Removal of partly solidified cement and lime

FEATURES & BENEFITS

- Removes rust and rust stains
- Fast acting, saves time and effort
- Forms a protective coating on steel surfaces which inhibits further rusting and gives key to which paint will adhere readily
- Cost effective
- Cleans and passivates ferrous metal surfaces, inhibits further corrosion
- Removes tarnish from non-ferrous metals
- Non-flammable

DIRECTIONS FOR USE

ETR 300 should be used in a plastic bucket. Remove loose rust, rust scale, grease and oil prior to using ETR 300.

- For severely corroded surfaces and pickling of welding repairs use neat to 50% solution. Leave until the surface has dried and has a grey/black appearance, any loose white powder on the dry surface should be brushed off, start painting immediately.
- For less severely corroded surfaces and tarnish on copper and brass use a solution of 20-50% and rinse off surface after 15-40 minutes with water.
- Aluminium. Use a solution of 10-30% but rinse off surface approximately 5 minutes after application.
- Rust stains on painted surfaces, a solution of between 10-30% should be sufficient. Rinse off with water 15-20 minutes after application.
- Rust stains on ceramic tiles, enamels, porcelain, glass, etc. A solution of between 20-50% depending on stains and soiling. Rinse off with water after 20-40 minutes.
- Removal of cement and lime. Apply 50% solution and high pressure hose down after 30-40 minutes.
- Flash rust in cargo lines and tanks and discoloration of stainless steel and epoxy tanks. For re- circulation, a solution of 5-10% ETR 300 should be used, (when injected, use a 5% solution). Recirculate or inject until rust or discoloration is removed.

CLEANING

Rinse with water

PRODUCT PROPERTIES

Appearance	Colourless liquid
Density	ca. 1,2 kg/lit
Flash point	n.a.
pH	ca. 0,1
Compatibility	
Metal	Corrosive to mild steel, cast iron. aluminium an alloys, brass, tin or galvanised material.
Rubber	No known effect.

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ETR 302 RUST WASH

Passivates iron and steel surfaces

APPLICATIONS

- For removal of rust or rust stains, light dirt and grease
- For removal of tarnish from brass, copper, steel, aluminium, chrome and stainless steel
- Removal of rust stains from painted surfaces, porcelain, ceramic tiles
- For removal of flash rust from mild steel cargo lines and tanks
- To remove discoloration from stainless steel and epoxy coated tanks

FEATURES & BENEFITS

- Removes rust stains
- Fast acting
- Reduces mechanical cleaning
- Economical
- Multi purpose, effective cleaning
- Prevents flash rusting
- Contains emulsifiers
- Cleans and passivates iron and steel surfaces, inhibits further corrosion
- Non-flammable

DIRECTIONS FOR USE

ETR 302 should be used in a plastic bucket.

- To remove light rust from floor plates, bulkheads, painted surfaces, etc., remove loose dirt, scale and rust by sweeping or brushing.
- Aluminium. Rinse off surface approximately 5 minutes after application
- Rust stains on ceramic tiles, porcelain, etc. A solution of between 30-50% depending on stains and soiling. Rinse off with water after 30-50 minutes

CLEANING

Rinse with water

PRODUCT PROPERTIES

Appearance:	Colourless liquid
Density	ca 1,0 kg/lit
Flash point	n.a.
pH	ca. 1,0
Compatibility	
Metal	Corrosive to mild steel, cast iron. aluminium an alloys, brass, tin or galvanised material.
Rubber	No known effect.

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ETR 303 METAL BRIGHTENER

Liquid for rust dissolving and passivating of metal surfaces

APPLICATIONS

- For removal of light rust and flash rust
- Surface brightening
- Removal of rust stains from metal, painted surfaces, tiles and wood

FEATURES & BENEFITS

- Fast acting, saves time and effort
- Economical
- Safe on Brass, Copper, Aluminium, Stainless Steel and Chrome
- Cleans and passivates ferrous metal surfaces, inhibits further corrosion
- Forms a protective coating on steel surfaces to which paint will adhere readily
- Non-flammable

DIRECTIONS FOR USE

ETR 303 should be used in a plastic bucket. Remove loose rust, rust scale, grease and oil prior to using ETR 303.

- For removal of light rust and rust stains on aluminium, brass, copper and stainless steel, apply ETR 303, after removal of oil and grease, neat with a brush, rag, etc. Wash off after 15 minutes. Repeat if necessary.
- For steel surfaces, remove oil grease and old paint. Wet down entire surface with neat ETR 303 and dry. Second wash may be necessary. After drying the surface ETR 303 leaves a glossy and shining metal surface. Steel surfaces will have a resistance to rust and will present a good key for bonding paint.
- For removal of rust stains on painted surfaces and wood, ETR 303 should be applied at full strength for heavy stains, or diluted to 20-40% for light stains. Allow to soak for 20-30 minutes and wash off with water. A second application may be necessary to remove the stubborn stains.

CLEANING

Rinse with water

PRODUCT PROPERTIES

Appearance	Colourless liquid
Density	ca. 1,06 kg/lit
Flash point	n.a.
pH	ca. 1,3
Compatibility	
Metal	Corrosive to steel
Rubber	No known effect.

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ETR 304 RUST RELEASING OIL

Efficient and fast acting rust releasing, penetrating, lubricating and rust preventing oil.

APPLICATIONS

- Lubricates
- Protects and prevents rust on disassembled equipment
- Loosens frozen, rusted and seized mechanics

FEATURES & BENEFITS

- Multi-purpose lubricant, penetrant, protectant
- Thin oily film
- Reduces wear caused by friction and corrosion
- Fast acting penetrant, loosens rusted and frozen parts
- Excellent protective coating for hand and machine tools
- Removes moisture
- Fluid also at low temperatures
- Water repellent

DIRECTIONS FOR USE

ETR 304 should be poured, dripped, sprayed on objects to be treated. Smaller parts can be immersed in a bath of ETR 304.

- ETR 304 provides a light oily coating that can be used on all types of equipment both indoors and outdoors
- Its fast penetrating action gets into hard-to-reach areas and helps loosen rusted nuts, bolts, screws, etc.
- ETR 304 lubricates hinges, springs etc.
- ETR 304 has a very low surface tension and replaces moisture before anti-corrosive treatment
- Leaves a thin water repellent and temporarily rust protective film on metal surfaces. Cleaning Wipe off with a rag or use ETC 400 or ETC 401.

PRODUCT PROPERTIES

Appearance	Light brown
Density	ca. 0,92 kg/lit
Viscosity	11 sec. Ford cup no. 4
Flash point	40°C
Drying time	Non drying
Compatibility	
Metal	No known effect
Rubber	May swell.

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ETW 500 BOILER WATER TREATMENT

Removes efficiently scale and deposits and reacts both physically and chemically

APPLICATIONS

- Auxiliary boiler water treatment and corrosion inhibitor

FEATURES & BENEFITS

- Removes existing scale and prevent new formations
- Reduces and prevents corrosion by surface preparation and oxygen reduction
- Reduce hardness and maintain a suitable pH of the water
- Modifies the sludge to a condition that makes blow-down easy
- Reduces foaming and carry-over

DIRECTIONS FOR USE

ETW 500 should be added with 1,5 litres/m3 for each 100 ppm CaCO3 p-alkalinity level for the first dosage to untreated evaporated water. Normally a dosage of 0,15-0,20 litres/m3 can be used with moderate waste water and topping up volume. The dosage can be made either to the suction side of the feed water pump or to the boilers feed line, select the dosage point which gives the most adequate and even dosage. Continuous dosage by pump where the volume is controlled by a pH sensor is recommended. In order to protect all surfaces, the system circulation pump for the exhaust gas boiler should be in service at least part of the time in harbour. The condense tank should be kept at highest possible temperature (90-95°C), use thermostat controlled steam heating. Best possible deairating should be maintained through venting lines with sufficient cross section without restrictions.

Test methods
In order to maintain a constant good boiler water quality, tests must be done frequently regarding pH, conductivity and P-alkalinity. Occasionally, chloride- and M-alkalinity should be checked. Provided that tests figures are good and a pH controlled dosage is used, water tests twice/week should be sufficient for low pressure boilers (max. 30 bar). All figures should be recorded, consider boiler makers recommendations.

pH-value
Measure the pH value, preferably with an electric instrument. Recommended pH is 8,8 - 9,2 at 20°C for feed water and 11,0-11,8 at 20°C for boiler water. Low pH is compensated by increased dosage and high value by decreased dosage, possibly combined with blow-down.

Conductivity
Conductivity is measured with an electric instrument and is expressed in micro- or millisiemens/cm (1/micro-ohm or micro MHOS/cm). The conductivity increases with the content of dissolved salt and is an indication of leakage in the system due to low blow-down. The conductivity also depends on the content of inhibitor and should be related to the P-alkalinity. For boiler water, treated with ETW 500, the following formula could be used.

Max. accepted conductivity = P-alkalinity x 3,5 + 500, where the conductivity is microsiemens/cm and P-alkalinity ppm CaCO3. If test show a higher conductivity than calculated above, it indicates a high concentration of foreign particles and the content of chloride and M-alkalinity, should be tested.

P-alkalinity
P-alkalinity is expressed in ppm CaCO3 or mval/l (1mval/l = 50 ppm CaCO3). The P-alkalinity figure is expressed as volume sulphuric acid needed to change (neutralise) the colour in a water sample to which phenolphthalein is added.

- Fill the measuring cylinder (5,83ml) with the water to be tested and pour it into the mixing bottle.
- Add the content of one Phenolphthalein indicator powder pillow. Swirl to mix.
- If the water stays colourless, the P-alkalinity is 0
- If the colour changes to pink, add Sulphuric acid standard solution (0,035N), one drop at the time and swirl to mix after each drop.
- Count the number of drops needed to neutralise the pink colour.
- Number of drops x 20 = P-alkalinity ppm CaCO3.

Recommended P-alkalinity in boiler water is;
- Boiler pressure <6 bar = 250-500 ppm CaCO3 = 13-25 drops
- Boiler pressure 6-15 bar = 150-400 ppm CaCO3 = 8-20 drops
- Boiler pressure 15-30 bar = 100-300 ppm CaCO3 = 5-15 drops

Low P-alkalinity is compensated by increased dosage and high P-alkalinity by decreased dosage, possibly combined with increased blow-down. The result should be followed up by frequent tests.

M-alkalinity
M-alkalinity is expressed in the same way as P-alkalinity, but the indicator Methyl red is used.
- Add the content of one Methyl red indicator pillow to the

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remaining sample from the P-alkalinity test. Swirl to mix and the colour will change to blue.
- Add Sulphuric acid standard solution (0,035N) to change the colour from blue to pink and add to the number of drops for P-alkalinity.

Total number of drops x 20 = M-alkalinity ppm CaCO3.
M-alkalinity result should be relatively constant. An increase in the difference indicates foreign particles in the water, oil, etc. The reason should be investigated. M-alkalinity should not be higher than twice the P-alkalinity.

Chloride
Salt content in boiler water, caused by leakage in the heat exchangers, is expressed by the content of Chloride (Cl).
- Pour the volume of one measuring cylinder (5,83 ml) in the mixing bottle and add the content of one Chloride indicator powder and mix.
- With the Silver Nitrate pipette in vertical position, add Silver Nitrate (0,049 N), one drop at the time and mix carefully after each drop.
- Count the number of drops needed to change the colour from yellow to red/brown.

Number of drops x 20 = ppm Chloride. Low content of Chloride, below 100 ppm, can be measured more accurately by filling the mixing bottle with water to the 23 ml mark. Number of drops x 5 = ppm Chloride. Recommended max. content of Chloride in boiler water is 200 ppm.

Instrument and test kits
EverTec AB can supply you with Instruments and Test Kits suitable to EverTec's products. Normally most Instruments and Test Kits are applicable.

PRODUCT PROPERTIES

Appearance	Clear liquid
Density at 20°C	ca. 1,15 kg/l
Flash point	n.a.
pH	ca. 13,5

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ETW 501 COOLING WATER TREATMENT

Very good lubricating and protecting properties for use on wire, bolts, etc.

APPLICATIONS

- Cooling water scale and corrosion inhibitor

FEATURES & BENEFITS

- Forming a solid and passivated film, preventing corrosion
- Passivates oxygen
- Contains dispersant for cleaner and more efficient cooling systems
- Compatible with anti-freeze solutions
- Reduce hardness and maintain a suitable pH of the water

DIRECTIONS FOR USE

Engine cooling systems should be drained, flushed and if necessary, chemically cleaned, use ETC 413, to remove old rust and scale deposits before treatment with ETW 501 is begun. Cases of unusual coolant loss should be checked and remedial action taken. Dosage can be made by a feeder installed on a by-pass to the circulating system pump or manually in the header tank, providing that, at least part of the water is circulating.

ETW 501 should normally be added with 4 litres/m3 in a untreated system, to reach a min. level of 1.000 ppm and 6 litres for a medium level of 1.500 ppm, to give the correct product reserve. It is recommended that a minimum of 1.000 ppm of sodium nitrite to be maintained in the circulating cooling water at all times, this may be increased to give corrosion protection at higher than normal temperatures. If the reserve falls below this figure, then ETW 501 should be added with 3 litres/m3.

Test methods

By proportional adding of ETW 501, in connection with topping up the system with evaporated water, tests measuring concentration of Nitrite (No2), pH and Chloride (Cl) should be carried out twice a week. Consider engine maker¹s recommendations.

Nitrite

- Using the 2 ml syringe, fill 1 ml cooling water into the mixing bottle.
- Using the 10 ml syringe, add another 9 ml evaporated or deionised water into the mixing bottle.
- Add 0,5 ml sulphuric acid, as delivered (conc. acid/water) 1:1), and mix.
- With the Potassium Permanganate bottle in vertical position, add Potassium Permanganate (0,18 N), one drop at the time, and mix carefully after each drop.
- Count the number of drops needed to change the colour to pink (lasting for at least 15 seconds).
- Number of drops x 160 = ppm Nitrite. Recommended max. content of Nitrite: 1.000 -2.000 ppm.

pH-value

Measure the pH value, preferably with an electric instrument. Recommended pH is 8,5 - 10, (measured at 20°C).

Chloride

Salt content in cooling water, caused by leakage in the heat exchangers, is expressed by the content of Chloride (Cl).
Low range, 0-100 ppm Chloride:

- Fill the mixing bottle with water, that is to be tested, to the 23 ml mark. Add the content of one Chloride indicator powder pillow and mix carefully.
- With the Silver Nitrate pipette in vertical position, add Silver Nitrate (0,049N), one drop at the time, and mix carefully after each drop.
- Count the number of drops needed to change the colour from yellow to red/brown.
- Number of drops x 5 = ppm Chloride.

High range, 0-400 ppm Chloride

- Fill the plastic measuring tube (5,83 ml) with water, that is to be tested. pour it into the mixing bottle and add the content of one Chloride indicator powder pillow and mix carefully.
- With the Silver Nitrate pipette in vertical position, add Silver Nitrate (0,049 N), one drop at the time and mix carefully after each drop.
- Count the number of drops needed to change the colour from yellow to red/brown.
- Number of drops x 20 = ppm Chloride.

Recommended max. content of Chloride, 50 ppm.

Instrument and test kits

EverTec AB can supply you with Instruments and Test Kits suitable to EverTec's products. Normally most Instruments and Test Kits are applicable.

PRODUCT PROPERTIES

Appearance	Light yellow
Density at 20°C	ca. 1,14kg/l
Flash point	na
pH	ca. 13,5
Freezing point	-40°C

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ETW 502 EVAPORATOR TREATMENT

Very good lubricating and protecting properties for use on wire, bolts, etc

APPLICATIONS

- Evaporator treatment

FEATURES & BENEFITS

- Easy to handle
- Supplied in liquid form
- Economical

DIRECTIONS FOR USE

ETW 502 should be dosed continuously to the evaporators salt water inlet, using a metering pump or a flow meter. Standard dosage is 25 ml. concentrated ETW 502 per ton produced water, for production of 12 ton fresh water each 24 hours, use 300 ml. concentrated ETW 502/24 h. ETW 502 could also be diluted with water, add 20 litres of water per litre ETW 502, for production of 12 ton fresh water each 24 hours, use 6l/24h diluted ETW 502

PRODUCT PROPERTIES

Appearance	Light brown
Density at 20°C	ca. 1,1 kg/l
Flash point	na
pH	ca. 7

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ETF 700 SOOT REMOVER

For the reduction of corrosive deposits on exhaust valve seats and turbo charger components

APPLICATIONS

Used for removal of carbon slag deposits from boiler furnaces, superheaters, economisers, air heaters and exhaust path/stacks. For reduction of cold end corrosion by neutralising sulphuric acid deposits on surfaces where the temperature is lower than the dew point of the exhaust gas.

FEATURES & BENEFITS

- Removes unburnt carbon and slag deposits
- Improves heat transfer
- Reduces cold end corrosion
- Reduces cleaning costs by decreasing maintenance and frequency of cleaning
- Aids soot blowing
- Increases boiler efficiency
- No need to shut down boiler or plant when dosing

DIRECTIONS FOR USE

ETF 700, soot remover provides greater fuel efficiency and, prevents acid formation in areas where severe corrosion could result in expensive damage, i.e. heat exchangers, superheaters, economisers, exhaust paths/stacks.

Because of the catalytic action of ETF 700, the ignition temperature of the soot/firescale will be reduced to approximately 300°C and, the carbon deposits are then ignited, leaving an easily removed ash.

Determine the quantity of ETF 700 required by quantity of fuel consumed per boiler per day. See product dose.

Introduce the appropriate amount of ETF 700 into the hottest part of the boiler furnace by adopting any of the following methods;

[a] Open a boiler peephole or furnace and throw in the required amount of ETF 700

[b] Remove the burner and shoot the required amount of ETF 700 through the body of the burner housing into the furnace and replace the burner.

[c] If the boiler is equipped with dosing injector simply pour the amount of ETF 700 into the injectors and direct the nozzle towards the hottest area of the flame.

SAFETY AND HANDLING

Hazards
May be irritating to eyes and skin
Protective measures
Wear suitable protective clothing,<gloves and eye/face protection
Spillage
Collect with non-combustible absorbent material
Fire
Water spray, fog or mist

Storage
Keep in cool, dry, ventilated storage and closed containers. Keep away from oxidisers, heat and flames

Transport
IMDG Class/page - not classified
UN Number - not classified
ADR - not classified
Packaging 20 kg drum

FIRST AID

Eyes
Promptly wash eyes with lots of water for at least 15 minutes and get medical attention.
Skin
Promptly wash contaminated skin with soap and water.
Inhalation
Move exposed person to fresh air at once.
If swallowed:
Do not induce vomiting. Promptly let victim drink lots of water to dilute the swallowed chemical. Never make an unconscious person vomit or drink fluids. Get prompt medical attention.

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PRODUCT DOSE

- For oil-fired boilers, the daily dosage depends on the fuel oil consumption per boiler, per day (see table)
- For coal-fired boilers, the approximate daily dosage is 3 kg of ETF 700 per 30 tonnes of coal consumed per boiler every 24 hours.

Oil consumption									
Tonnes/day	20	40	60	80	100	120	140	160	180
Dosage Kg	1	2	4	6	9	12	14	16	18

PRODUCT PROPERTIES

Appearance	Grey powder
Specific gravity	1,2 - 1,4
Flash point	na

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ETF 701 FUEL CATALYST & SLUDGE CONTROL

Concentrated liquid compound acting as a catalyst in order to improve combustion

APPLICATIONS

Improves atomization and combustion using low grade heavy residual fuels. Sludge dispersion and water separation.

FEATURES & BENEFITS

- Improves combustion
- Reduces carbon/ash deposits, reduces smoke emissions and soot development.
- Completely and readily soluble in marine fuel oils.
- Minimizes cold end corrosion
- Separates emulsified water
- Disperses and suspends sludge in fuel

DIRECTIONS FOR USE

ETF 701 can be introduced into bunker tank during or prior to filling. ETF 701 can also be added directly into the fuel line prior to the burner by means of a metering pump. Add normally 1 litre of ETF 701 per 4 tons of fuel, the higher Sulphur and Vanadium content in the fuel, the dosage should be increased.

SAFETY & HANDLING

Hazards
Irritating to eyes, skin and respiratory system
Protective measures
Wear suitable protective clothing, gloves and eye/face protection
Spillage
Collect with non-combustible absorbent material
Fire
Foam, carbon dioxide, dry chemicals, sand, earth, do not use water jet
Storage
Keep in cool, dry, ventilated storage and closed containers. Keep away from acids.
Transport
IMDG Class/page - not classified
UN Number - 1302
ADR - 3,32(c)
Packaging 25 l can

FIRST AID

Eyes:
Promptly wash eyes with lots of water for at least 15 minutes and get medical attention.
Skin:
Promptly wash contaminated skin with soap and water and get medical attention.
Inhalation:
Move exposed person to fresh air at once. Get medical attention.
If swallowed:
Do not induce vomiting. Promptly let victim drink lots of water to dilute the swallowed chemical. Never make an unconscious person vomit or drink fluids. Get prompt medical attention.

PRODUCT PROPERTIES

Appearance	Dark liquid
Specific gravity at 20°C	ca. 0,92 kg/l
Flash point	71°C

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ETF 702 COMBUSTION/CATALYST MODIFIER

Contains combustion catalysts and ash modifiers

APPLICATIONS

Used for deactivation of erosion problems associated with sodium and vanadium contamination of poor quality heavy residual fuels.

FEATURES & BENEFITS

- Increases efficiency and reduces maintenance
- Ash problems throughout the exhaust system are limited
- Completely and readily soluble in fuel oils.
- Reduces low and high temperature corrosion
- Reduces heavy metal deposits such as Vanadium, Sulfur and Sodium

DIRECTIONS FOR USE

ETF 702 should be dosed automatically using a metering pump to dose into the fuel feed line as near to the injector or burner pump as possible. ETF 702 can also be dosed directly to the day tank prior to refilling or directly to the bunker tanks.

Dose rate: 1 ltr ETF 702 per 4 tons of fuel, based on a fuel oil of 100ppm Vanadium content.
Dosage to be varied based on test results of fuel and Vanadium content of fuel.
Analyze Vanadium content periodically.

SAFETY & HANDLING

Hazards
Irritating to eyes, respiratory system and skin. Avoid prolonged contact with the product.
Protective measures
Wear suitable protective clothing, gloves and eye/face protection.
Spillage
Collect with non-combustible absorbent material.
Fire
Foam, carbon dioxide, dry chemicals, sand, earth, do not use water jet.
Storage
Keep in cool, dry, ventilated storage and closed containers. Keep away from oxidisers, heat and flames.
Transport
IMDG Class/page - not classified
UN Number - 1202
ADR - 3,32 (c)
Packaging
25 l can

FIRST AID

Eyes
Promptly wash eyes with lots of water for at least 15 minutes and get medical attention.
Skin
Promptly wash contaminated skin with soap and water and get medical attention.
Inhalation
Move exposed person to fresh air at once. Get victim medical attention.
If swallowed
Do not induce vomiting. Promptly let victim drink lots of water to dilute the swallowed chemical. Never make an unconscious person vomit or drink fluids. Get prompt medical attention.

PRODUCT PROPERTIES

Appearance	Dark reddish liquid
Specific gravity at 20°C	ca 0,9 kg/l
Flash point	87°C

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COMPARISON GUIDE - RUST CONVERTERS

EVERTEC	DREW	NALFLEET	UNITOR/ROCHEM	VECOM	MARITECH	FERRYL	OTHERS
ETR 300	Rust stain remover	9-061 Rust remover	Metal Brite HD	Vecosan Rustcleaner/L 704	Marisol RW+	Ferrycid	Neutra Rust 661, Ferro-Bet 125, Ems-Togo, Annitrol Marichem, Rust shield phos., Rocol rust converter fluid
ETR 302	Rust stain remover	Rust rem. & Metal Brightner, 9-061	Metal Brightner	Rust cleaner, Cold Phos.	Marisol RW	-	Norus Rust vask, Ferro-Bet rushwash
ETR 303	-	-	Metal Brite	-	Marisol MB	-	Norus Metal Brightner
ETR 304	-	-	Penetron Plus Corroless MDP	Anti Moist R41	-	Rustoil	Valvoline Penetrating Oil Statoil, Fri rost Dinitrol, Rustoff LPS, Liquid wrench no.1, CRC rustrel.oil, Rocol multi lube, Lenson 1012

COMPARISON GUIDE - WATER TREATMENT

EVERTEC	DREW	NALFLEET	UNITOR/ROCHEM	VECOM	MARITECH	FERRYL	OTHERS
ETW 500	AGK 100, LP BWT	BWT Liquid 9-150, 9-464 C (powder)	Liquitreat One Shot, BWT Combitreat (powder)	BWT QC 3	Marisol BT	-	Norus Boiler water treatment LP, BWT One Shot
ETW 501	Liquidewt Maxiguard DEWT-NC (powder), Ameroid OSC HDE -777	9-108, Nalcool 2000, 9-131 C, 9-121 (powder), Max 2	Rocor NB Liquid Liquiguard, Dieselguard (powder), Rocor NB (powder)	CWT Diesel/QC 2, CWT Diesel/QC 2 (powder)	Marisol CW	-	Norus Cooling water treatment, NCLT
ETW 502	Ameroyal	Maxivap	Gamavap Vaptreat	FWG Evaporator Treat QC 1	Marisol ET	-	-

COMPARISON GUIDE - FUEL TREATMENT

EVERTEC	DREW	NALFLEET	UNITOR/ROCHEM	VECOM	MARITECH	FERRYL	OTHERS
ETF 700	LT Soot release	Soot remover	Soot remover	Soot remover	Marisol SR Rexus	- -	Uniserv Soot remover Marichem Soot cleaner
ETF 701	Bunkersol D	Combustion catalyst	Dual purpose plus	Combustion catalyst	Marisol FT	-	Uniserv FOT Dual purpose
ETF 702	Amergy 100, Amergize	Maxi Mize regular	Dieselite/Vansulite	Dieselite	Marisol SR-L	-	Marichem F.O.T. 10 Uniserv FOT Catalyst Marichem Dieselite/Vansulite

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PROBLEMS & SOLUTION GUIDE - WATER TREATMENT

REQUIREMENT	SOLUTION	PRODUCT (S)
Scale deposits in auxiliary or low pressure boilers causing reduced efficiency.	Precipitate hardness salts for blowdown. Maintain optimum pH for scale and corrosion control.	ETW 500
Scale deposits in sea water evaporators, causing restriction of water flow, reduced heat transfer efficiency, lower output, risk of foaming, carryover and contamination of condensate.	Reduce adherence of crystalline solids in brine, attack existing scale deposits and suppress foam formation.	ETW 502
Corrosion in low pressure boilers as a result of high boiler water acid levels (low alkalinity).	Increase alkalinity to neutralise acids, precipitate salts and control ″under deposit″ corrosion.	ETW 500
Closed circuit cooling water system efficiency reduced by scale deposits causing insulation and water flow restriction, e.g. diesel engine cooling systems.	Prevent deposits adhering and causing damage. Stabilize pH.	ETW 501
Corrosion in closed circuit cooling or heating systems - e.g. diesel engines.	Passivate metal surfaces, control scale to prevent ″under deposit″ corrosion and maintain stable pH to prevent damage to vulnerable metals.	ETW 501

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