



Marine Products



General Catalogue 17/18

ABCON MARINE PRODUCTS

Stop Leak & Water Ingress Additives for Lube Oil Systems

Wear Reducing Additives

For Mineral or Bio Based Systems

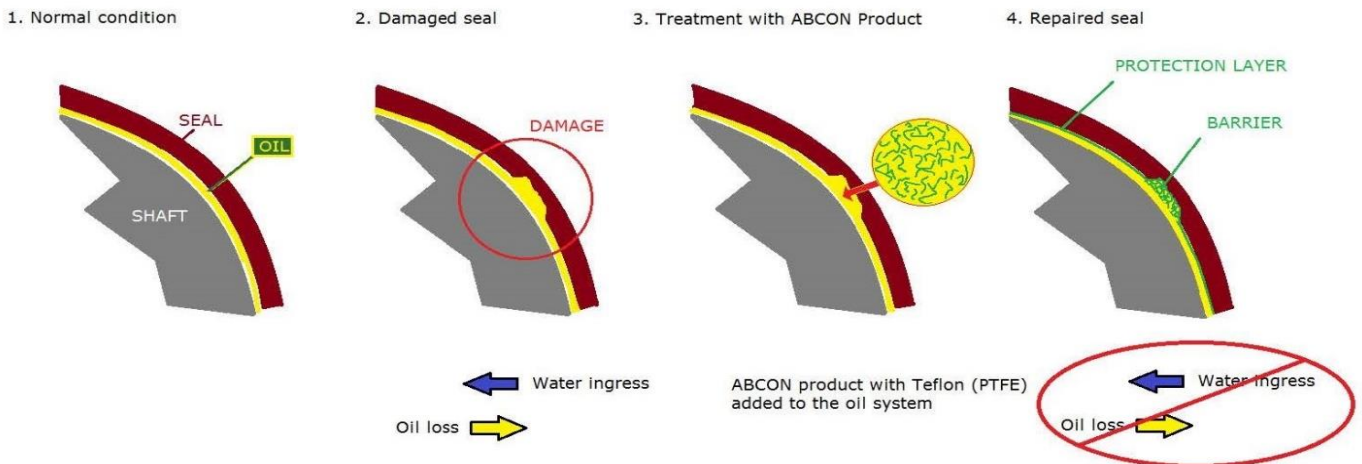
Info@abcon.eu

www.abcon.eu



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The Teflon particles are very much adhesive to materials containing carbon. Similar to a magnet, the teflon particles are going to stick to the rubber material. Layer by layer the teflon particles are building a barrier which is closing the gap between seal and shaft.

The ABCON product does contain next to the teflon material, several other ingredients which have a revitalizing character to rubber materials.

How Our STOP LEAK Additives Work

It starts as a small leak but sooner or later it becomes a major leak. Imagine a simple additive that'll stop the leak and water ingress keep your vessels sailing until next planned dry docking.

Normally leaks can occur in stern tubes, tunnel thrusters and CPP's. The usual way of dealing with a leak is expensive and time-consuming compared to using ABCON® MARINE SL (Stop Leak additives).

Cause of Leaks

There are several causes of leak such as insufficient lubrication of seals during dry docking, air locks in thruster systems and CPP's after assembling, oil film pressed out during stand still, fishing lines pulled into seals, sand and other impurities damaging seals when passing through shallow waters (e.g. harbors and rivers).

The ABCON® Way – SL (Stop Leak) Additives

Our specifically designed teflon particles form a barrier in the gap between the rubber seal and shaft surface. This strongly reduces the leak or stops it all together thereby avoiding untimely dry-dock or other expensive repairs thus enabling the vessel to continue sailing until planned dry-dock where the problem can be fixed. We recommend that small leaks are dealt with once they are discovered. Not only is it illegal many places nowadays but it is also cheaper as less of ABCON's product is needed.

| BIO OIL based systems. All ABCON bio based products comply with the 2013 EPA VGP requirements as environmentally acceptable |

Furthermore, once the leak has reached a level where even our SL can't stop it, the owner will have no option but to take it out of service and on dry-dock. Our SL products are available in mineral oil and bio degradable base oil.

Examples – SL Additives

- Lip seal (Simplex type) systems: SL for ordinary leakages.
- Lip seal (Simplex type) systems: SLL for large leakage.
- Face seal (Cedervall type): CSL for small and large leakages.

All our products are delivered as a concentrated paste which results in a lower product price, lower transportation prices and it makes it easy to handle. By using ABCON Stop Leak the vessel doesn't lose time on its schedule.

A Real Example. 7.100 DWT Drill Ship, leaking 40 L per 24 hours, status after adding ABCON MARINE STERN TUBE SL: Your product helped us our really good. Within minutes our seals stopped leaking. We are now in scheduled dry-dock, and everything has been repaired. Thank you very much for all your help and information. If we have any problems in the future, we will think about your company.



How Our Maintenance + Additives Work

Our + additives are teflon based maintenance additives. As conventional lube oil products have their limits we have designed an additive that improves the capability of lube oil, under all operating conditions.

Teflon is known as the material that provide the least amount of friction, and it is also an extremely durable material which is why ABCON developed teflon based marine products.

Reynolds Law Applies

ABCON AS manufactures teflon based lube oil additives for the maritime industry. ABCON MARINE+ products, as they are called, are designed to reduce operating expenses of equipment by decreased wear and tear and reduced friction. *Ref. Pounder's Marine Diesel Engines and Gas page 122: A typical surface finish for the cylinder liner of a modern engine in service is around 0.5μ , while the oil film thickness of three times this value (1.5μ) - required to prevent asperity contact - may not be established until some distance down the stroke from top dead center. The conditions for adhesive wear are therefore present at around top dead center. The conditions for adhesive wear are therefore present at around top dead center.*

What Does ABCON Teflon Particles Do?

To the right is a micro surface picture that illustrates what happens. Experiments have proven that after using ABCON MARINE + there is less metal contact even at lower velocity. Wear metals found in used oil show the degree of non-performance. Oil analysis show that ABCON additives have been proven to reduce the wear metals by 50% and more.

Cylinders

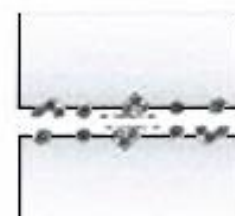
In the ideal world lube oil keeps two mechanical parts from contact, but it doesn't if the velocity is low enough as shown in the image below to the right. In this example, it takes 1-2 rotations to establish full oil pressure to keep the surfaces apart.

A Real Example. 16,000 DWT. ferry In dry dock:

Thruster motor shaft bevel was worn, hardened gear tooth surface was compromised and iron content in lube oil was exceeding limits. Supplier could not supply replacement shaft immediately so therefore ABCON-THRUSTER+ was added (40 L total volume). The teflon particles permanently adhered to surface of gear teeth, provided lubrication which reduced gear friction and iron levels in lube oil to allowable limits. No replacement part ordered until 2011 as the ferry Superintendent reports: Shaft continues to function well and since iron level is still acceptable, class approved for continued operation.

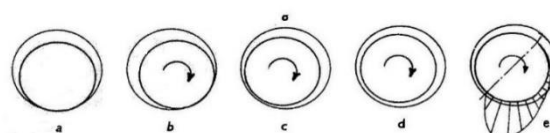


Before: Roughness depth $0,5 \mu$



After: ABCON teflon particles fill the grooves

→ less metal contact





Stern Tubes – Lip Seal & Face Seal

ABCON MARINE STERN-TUBE SL is a Stop Leak and water ingress paste, specifically designed for stern tubes. We have a broad assortment of additives that work with all types of stern tubes. It stops leaks and water ingress on stern tube seals and other similar systems where mineral oil based engine oil is used.

Lip Seals

In the case of a smaller leak below 15-20 liters per day, then the STERN TUBE SL is the best product to use.

Larger Leaks

If you have a larger leak than 15-20 liters, then our STERN TUBE SLL is the relevant choice. It has the same properties as STERN TUBE SL, but with the addition of some larger teflon particles it has an increased effect against larger leaks.

Properties of STERN TUBE SL

The unique properties of our stop leak products are their abilities to produce a teflon barrier at leak as well as reducing wear and tear. It also protects against corrosion. It is environmentally friendly as it reduces leakages.

Face Seals

For face seals, we have our ABCON MARINE-STERN TUBE CSL which is designed to stop leaks in small and large Cedervall type seals.

Function

The high content of teflon particles produce a kind of teflon seal. The effect is that the leakage is significantly reduced or stopped. Should there be water in the lube oil, the stern tube paste will provide a substantial safety margin as teflon maintains its lubrication properties even in water.

STERN TUBE SL, SLL and CSL can be blended with all types of mineral lubrication oil. It can be used with all types of stern tube seal materials.

Above mentioned products are also available with Bio degradable oil based version. They all comply with 2013 EPA VGP requirements. They are all named with a B (BSL, BSLL, BCSL)

Preventive Care: ABCON MARINE STERN-TUBE+

To reduce the risk of leak STERN TUBE+ is recommended. It is a teflon based paste which produces a teflon surface layer at the seals thus reducing risk of leakages. It is extremely protecting against wears on the bearing and the seals and it protects against corrosion as well. STERN TUBE+ can be used as a start-up lubrication for all types of stern tube bearings and seals.



Thruster

ABCON has Stop Leak additives specifically designed for thrusters as well. We have additives that are compatible with all kinds of thrusters with either mineral oil or bio degradable oil.

If you have a problem with a leak below 0,5 liters per hour or 10 liters per day, then the THRUSTER SL is your choice. It can stop leakages from rotating and tunnel thruster units and it can stop leakages from controllable pitch propeller systems where there is a suspicion that the O-rings are worn or damaged.

Larger leaks

If you have a larger leak than 10 liters per day, then our THRUSTER SLL is the relevant choice. It has the same properties as THRUSTER SL but we have added some larger teflon particles which increases its effect against larger leaks.

Properties of THRUSTER Stop Leak

All our THRUSTER Stop Leak products have a hydraulic oil as a base oil. This means that it is compatible with gear oil and hydraulic oil, and can therefore be used on fixed propellers and CPP propeller systems. It produces a teflon barrier at the leaking seal. In addition, it protects the bearings and seals against wear and tear.

We also deliver to rotating thrusters, both Azimuth and Azipot.

Function

The high content of teflon produces a kind of a sealing layer on top of the seal. The effect is that the leakage is significantly reduced or stopped.

When SL or SLL is blended with the existing systems oil the blend produces an excellent lubrication, which due to the teflon content, maintains its' lubricating effect even if there is some saltwater in the oil.

Above mentioned products are available in Bio degradable base oil. Those products are called THRUSTER BSL and THRUSTER BSLL. All ABCON Bio based products comply with the 2013 EPA VGP requirements as environmentally acceptable.

Preventive Care: ABCON MARINE-THRUSTER+

To reduce the risk of leak THRUSTER+ is recommended. THRUSTER+ is a hydraulic oil and teflon based paste, which produces a teflon layer on all surfaces and thereby reduces risk of leakages. It is extremely protecting against wears on the bearings and the seals. It is used as an additive in existing hydraulic oils.

A Real Example from Scandlines. MV Prins Richard. ABCON was used on all the thrusters. After adding ABCON MARINE-THRUSTER+ they could wait 4 years instead of 2 years before changing the lip seals.



Lubrication Paste

ABCON lubrication products are designed to improve the specific wear resistance of the ship.

ABCON MARINE-SEAL PROTECT+

When assembling systems with rubber seals, such as hydraulic cylinders, there is always a risk at start up that heat is produced in the small area between rubber and metal. This is damaging to the rubber surface and hence lead to later leakage. A much higher protection can be established by using ABCON MARINE-SEAL PROTECT+. It is applied in a thin layer on the rubber surface. Even at longer stand still it maintains its full lubricity capability and therefore reduce the risk of later damage to the seals. ABCON MARINE-SEAL PROTECT+ is a complex teflon based lubrication paste, which protects against start up rotations in the machinery or linear movements in cylinders.

ABCON MARINE-MLP

The ABCON MARINE MLP is a Multi-Lubrication Paste for all places, where you need extremely high film strength, adhesion and protection. MLP does not harden with age, and protect exposed components against rust and other corrosion; even aluminum in contact with stainless steel will be protected. MLP protects well against seawater. Its benefit is that it functions at up to 250 degrees Celsius. In addition, it makes it easier to disassembly the machinery even after long time and it offers a high degree of residual lubrication.

It seals ring surfaces without adhering. It minimizes initial start-up damage, it reduces risk of seizing and it reduces wear and tear. It also protects against corrosion.

ABCON MARINE-MLP – Numerous Applications

Here are some of the various applications for ABCON MARINE MLP. For engines, it can be used on:

- Camshafts and rollers
- All bearings and surfaces
- Oil seal and gaskets
- Hinge pins
- Exhaust system and hot bolts
- Engine assembly
- Threads (particularly those to be torqued)
- Pump assembly
- Winches and open gears
- Hatch bolts
- Treads, bolts etc. which are exposed to seawater



Hydraulic & Transmission Additives

We have several different additives for specific uses. Both stop leak and maintenance additives for hydraulic systems and transmission systems.

ABCON MARINE HYDRAULICS SL

Leaking hydraulic systems can easily be treated by adding a small quantity of HYDRAULICS SL to the system.

The high content of teflon particles produce a barrier when they pass the leaking seal area such as the moving cylinders. The effect is that the leakage is dramatically reduced or even stopped. A side effect of using teflon is its ability to create a cushion effect on mating surfaces in e.g. pumps. It not only reduces the wear but also reduces the “period noise” often experienced in hydraulic systems.

ABCON MARINE HYDRAULICS+

HYDRAULICS+ is a teflon based wear reducing additive. When added to the existing lube oil it reduces the friction between mating surfaces especially where there is metal to metal contact e.g. pumps.

The smaller teflon particles impregnate the metal surfaces which leads to reduces friction and thus wear.

The larger particles, which circulate with the hydraulic oil, create a cushion effect. This in turn will reduce the “period noise” caused by minor irregularities from mating surfaces such as gear teeth surfaces.

ABCON MARINE TRANSMISSION+

The TRANSMISSION+ product is a gear oil additive for treatment of gearboxes and transmission systems. TRANSMISSION+ with teflon offers maximum lubrication and anti-wear protection to the gear and bearing surfaces of all types of gears (helical, spur and worm drive).

The smaller teflon particles in TRANSMISSION+ range from 0,4 to 40 microns.

The smaller teflon particles in TRANSMISSION+ when subjected to pressure and temperature, impregnate the friction surfaces thus reducing friction and offering corrosion resistance even during lay-up periods and residual lubrication at start up after lay-up periods. The larger teflon particles, which circulate with the gear lubricant will create a cushion between gear surfaces, thereby strongly reducing gear pitting. This cushion effect is also important because it reduces noise caused by minor irregularities of mating surfaces, which are responsible for the very common “period noise”.

TRANSMISSION+ has the benefits of reducing friction and thereby reducing operation temperature, improves extreme pressure protection, it reduces friction and thus extends components life, reduces risk of oil leaks and results in a quitter operation.

ABCON MARINE TRANSMISSION SL

Oil spill from gear boxes can be reduced or be eliminated by adding a small quantity TRANSMISSION SL to existing lube oil. Lube oil often leak from small openings in the gear box such as where the shafts go out or along the lines where the box is assembled. Due to the content of special shaped teflon particles in TRANSMISSION SL the gap will soon be filled and a teflon barrier is established.

In addition, the capabilities of TRANSMISSION+ are applicable to adding TRANSMISSION SL.

About ABCON MARINE PRODUCTS

ABCON MARINE PRODUCTS has a strong history and profound knowledge when it comes to stopping leaks and reducing wear and tear in vessels.

ABCON AS has for years been specialized in producing and selling special additives specifically developed for the maritime market. ABCON was founded on the basis of teflon knowledge and over the years more emphasis has been on specialized products to the maritime market. The products have been developed in close corporations with some Danish shipping lines and the products have been tested on board their ships before they were put on to the market.

Global Company

In 2010 the product range was extended with a full line of STERN TUBE and THRUSTER Bio products which comply with the 2013 EPA VGP requirements as environmentally acceptable.

ABCON AS has become a global company which every year is selling ABCON MARINE additives to more than 100 vessels around the world. This is a proof of the effectiveness and quality of the products. Furthermore, we have sales representatives covering more than a dozen regions. The ABCON MARINE products are produced in own facilities near Copenhagen, Denmark, and from there it is distributed directly to the customers all over the world within few days.

Our Service

Stopping a leak is more than just ordering the right product. We ensure that our customers get the right product in the right quantity for the specific problem. We arrange for transport and we check that our product can arrive before the agreed upon date. Finally, we follow up to ensure that our customers are satisfied with the result.

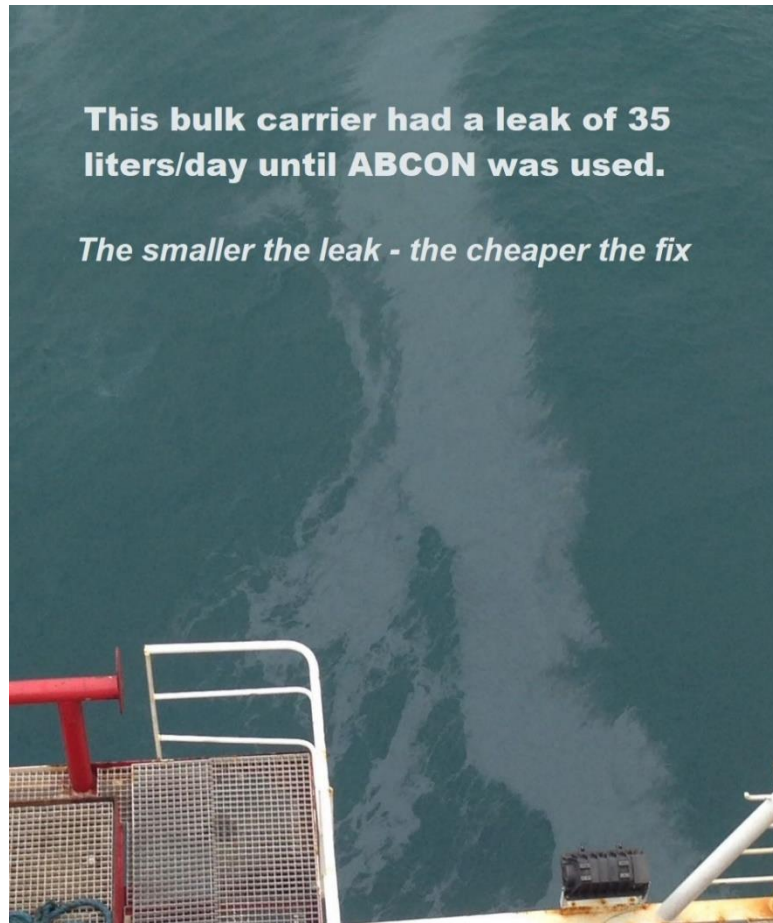
ABCON's products - Easy to Use

Our products are easy to apply which can be done by the ship's own crew. This means that no special repair crew is needed.

If you have a problem with a leakage or you want to know more about the areas, which can be successfully treated, please contact our experienced staff who can draw upon knowledge from our extensive database which holds information from all deliveries. We have successfully helped anything from tugboats to VLCC's.

This bulk carrier had a leak of 35 liters/day until ABCON was used.

The smaller the leak - the cheaper the fix



Experienced Personal

Our technical advisers have between them more than half a century of experience in the oil industry. This ensures a very comprehensive knowledge of the many different types of vessels and their systems.

ABCON® Guarantee

- Our objective is to provide the best guidance for our individual customers by working closely together with them to obtain maximum benefit from the products.
- Deliver the best and most innovative solutions for our individual customers.
- We always work to improve our product to increase their effectiveness even in the most demanding of cases.

Mission

Our mission is to reduce the operation cost of our customer's vessels by avoiding unplanned dry dock, reducing pollution in our oceans and we do it by providing unique, simple and user-friendly products. Also, today ABCON is always working on new ways to improve the products.

Increasing Focus on Leaks

With today's increasing focus on leaks ABCON offers solutions that are simple for the customer and doesn't take a day out of the vessels schedule.



What Our Customers Say

August 2012

Yesterday we received your product. I must confess I am on the verge of being religious. For more than 16 years I have worked in various ships, fishing and off shore, but never have I seen anything more effective. After 3-4 hours the leakage had so to say gone.

Alternatively, we would have had to go to dry dock plus 6 weeks waiting time for a new stern tube seal.

Med vennlig hilsen / Best regards
Sigmund Roksvåg
Chief Engineer
MV Eidsvaag Vega

September 2014

DECK CRANE GEARBOX LEAK

We faced a problem with a small leak from a cargo crane gearbox. The gearbox is un-pressurized, and the leak was a minor "drip" from an O ring seal, however, during annual inspect we were given a class condition. We were informed that to dismantle the gearbox and replace the O ring would take two makers' technicians four days. ABCON was used and the leak stopped, to the satisfaction of the classification society, and the relief of the owners – price EUR 900

German ship-owner

November 2016

Regarding your product Abcon Marine Thruster-SL which was used to minimize or eliminate oil leakage from bow thruster 1 year before vessel's dry-dock, kindly note that leakage was reduced from 20-30 litres per month to 2-3 litres per month which was more than ok until vessel was dry-docked and oil seal was changed.

Thank you and best regards
Mr. Lazaridis
Technical Department



List of Products

For all Seal Rings

- ABCON MARINE-SEAL PROTECT+ reduce the risk of damage to seals at start up

Mineral Oil Based Additives for Stern Tubes and Other Systems Filled with Engine Oil

- ABCON MARINE-STERN TUBE + reduce wear
- ABCON MARINE-STERN TUBE SL stop leak below 15-20 ltrs/day for lip seals
- ABCON MARINE-STERN TUBE SLL stop leak over 15-20 ltrs/ day for lip seals
- ABCON MARINE-STERN TUBE CSL Stop Leak-Cedervall

For Tunnel Thrusters, Azimuth Thrusters, Stabilizers, CPP's & Steering Systems Filled with Hydraulic Oil

- ABCON MARINE-THRUSTER+ reduce wear all
- ABCON MARINE-THRUSTER SL stop leak 10 μ filter
- ABCON MARINE-THRUSTER SLL stop leak filter over 150 μ

Other Products

- HYDRAULICS+ reduce wear all
- HYDRAULICS SL stop leak all
- TRANSMISSION+ reduce wear all gears
- TRANSMISSION SL stop leak and reduce wear all gears

Multi Lubrication Paste

- ABCON MARINE-MLP anti-seize lubrication paste

For Stern Tubes and Other Systems Filled with Bio Engine Oil

- ABCON MARINE-STERN TUBE B+ reduce wear
- ABCON MARINE-STERN TUBE BSL stop leak below 15-20 ltrs/day for lip seals
- ABCON MARINE-STERN TUBE BSLL stop leak over 15-20 ltrs/ day for lip seals
- ABCON MARINE-STERN TUBE BCSL stop leak all Cedervall

For Tunnel Thrusters, Azimuth Thrusters, Stabilizers, CPP's & Steering Systems Filled with Bio Hydraulic Oil

- ABCON MARINE-THRUSTER B+ reduce wear all
- ABCON MARINE-THRUSTER BSL stop leak 10 μ filter
- ABCON MARINE-THRUSTER BSLL stop leak filter over 150 μ

General

Container size	1L	5L	10L	20L
SEAL PROTECT+ and MLP	x	x		
STERN TUBE+ and THRUSTER+	x	x	x	x
All STERN TUBE SL and THRUSTER SL		x	x	x
All TRANSMISSION and HYDRAULICS	x	x	x	

ABCON AS

DK-2970 Horsholm

DENMARK

TEL +45 45 161 163

CELL +45 40 440 628

info@abcon.eu

www.abcon.eu

Follow us on LinkedIn:

www.linkedin.com/company/abcon-as

