

Marine Lubricants



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Application Areas

- Wire Ropes
- Propeller Caps
- Marine Environment
- Rudder Carrier Bearings
- Open Gears
- Oil to Water Interface
- Deck Piping / CUI
- Hydraulic Oils
- Deck Machinery
- Rough Locations
- Jacking Equipment

About LanoPro

LanoPro is an independent company focusing on developing and offering high performance environmentally friendly and specialty lubricants.

We market and supply our range of lubricants globally through our world wide stock points and regional distribution & sales partners.

Since our inception in 2006 we have been investing and focusing on developing high performance specialty lubricants in response to the increasing demand for environmentally friendly / biodegradable lubricants.

LanoPro is today offering an extensive range of Environmentally Acceptable Lubricants (EALs) and specialty lubricants for Marine, Oil & Gas and General Industry applications.

Unique technology, environmentally friendly, compliant, high performance and corrosion protection prevention lies at the core of our lubricants' properties. Simultaneously the products have all the favorable characteristics common to conventional petrochemical based solutions.

LanoPro is proud to offer a comprehensive range of specialty greases & oils with over a decade of proven track record with premier end users. Through our well progressed sales & distribution channels and world class supply partners we offer high performance & conventional lubricants at commercially competitive terms.

Our office locations include Singapore and Oslo.



Our Mission:

LanoPro shall offer high performance specialty lubricants with minimal environmental impact

Our Vision:

Making environmentally friendly lubricants the preferred choice

Why LanoPro?

- Quality and Compliance
Specialty Performance Products
- World Wide Distribution
High Availability
- Commercially Competitive
One Global Price
- Proven Supplier
Strong Track Record



What do we supply?

- EAL Lubricants
Greases
Hydraulic Oils
Oils
Coatings
- Mineral Lubricants
Greases
- Specialty Products
Leak Stop





ENVIRONMENTALLY ACCEPTABLE LUBRICANTS *

| Product | Product | Product | Product |
|---|--|---|--|
| LanoPro Marine Grease EP0 EAL | LanoPro Marine Grease EP2 EAL | LanoPro Wire Grease ST2 EAL | LanoPro Multi Grease EP0 EAL |
| Performance | Performance | Performance | Performance |
| | | | |
| NLGI | NLGI | NLGI | NLGI |
| 0 | 2 | 2 | 0 |
| Thickener | Thickener | Thickener | Thickener |
| Calcium | Calcium | Inorganic | Calcium |
| Base Fluid | Base Fluid | Base Fluid | Base Fluid |
| Synthetic esters | Synthetic esters | Proprietary blend | Polymer vegetable oil |
| Temp Range | Temp Range | Temp Range | Temp Range |
| -40°C to +100°C (max +110°C) | -40°C to +100°C (max +110°C) | -10°C to +90°C | -20°C to +80°C (max +100°C) |
| Applications | Applications | Applications | Applications |
| Deck-equipment slides, hinges submerged pumps propeller cap, stern roller rudder carrier. | Deck-equipment slides, submerged pumps, stern roller, wire rope. | Mooring wires, davit wires, towing wires, crane wires, umbilicals, wire rope. | Deck-equipment slides, hinges, propeller cap, stern roller, ruder carrier wire rope. |



ENVIRONMENTALLY ACCEPTABLE LUBRICANTS

| Product | Product | Product | Product |
|---|---|--|---|
| LanoPro Multi Grease EP2 EAL | LanoPro OG Grease HD0.5 EAL | LanoPro Offshore Grease HD2 EAL | LanoPro Universal Grease HD2 EAL |
| Performance | Performance | Performance | Performance |
| | | | |
| NLGI | NLGI | NLGI | NLGI |
| 2 | 0.5 | 2 | 2 |
| Thickener | Thickener | Thickener | Thickener |
| Calcium | Lithium Calcium Complex | Calcium/Lithium Complex | Lithium Complex |
| Base Fluid | Base Fluid | Base Fluid | Base Fluid |
| Polymer vegetable oil | Readily Biodegradable ester | Biodegradable ester | Synthetic esters |
| Temp Range | Temp Range | Temp Range | Temp Range |
| -40°C to +80°C (max +100°C) | -25°C to +100°C (max +110°C) | -35°C to +110°C (max +120°C) | -30°C to +140°C (max +180°C) |
| Applications | Applications | Applications | Applications |
| Wires Deck-equipment slides, hinges propeller cap, stern roller rudder carrier. etc. | Jack-Up equipment heavy loaded open gears anti-seize grease swivel joints, skidding open gears and pinions. | Heavy loaded open gears pipe dope, thread compound, anti-seize grease, drill pipe connections, casing and tubing, main shaft connection | Multi purpose, roller bearings, ball bearings, slide bearings, etc. |



Save TIME & MONEY with LanoPro Leak Stop

LanoPro are proud to launch a new product to help shipowners, Ports & Terminals and the offshore industry to reduce their repair and maintenance costs and stem pollution from leaking seals. Seals such as O-rings and most types of gaskets harden with time, consequently, shaftdeterioration and leakages will occur.

LEAK STOP HAS TWO MAIN BENEFITS

Maintenance: Add 1% LanoPro Leak Stop with the total oil volume as an additive for gears, thrusters, propeller shafts, transmissions and engines to prevent and stop leaks and sweating from gaskets. Gaskets cure and harden over time which results in oil / liquid leakages. The product has a positive effect whilst also adding lubrication and reducing friction.

DESCRIPTION

LanoPro Leak Stop is a premium additive for gears,

transmissions and engines to prevent and to stop sweating with resulting leakage from gaskets.

Gaskets will over time harden resulting in oil/ liquid leakages. The product is quick to act. LanoPro Leak Stop also add lubricity and reduces friction on high loads.

LanoPro Leak Stop is suitable for mineral oils, synthetic oils and biodegradable esters.

NOTE: LanoPro Leak Stop is not suitable for use in vegetable type oils.

On inspecting the replaced damaged gaskets it could be seen they had hardened, causing minute harmful cracks to develop on their surfaces. LanoPro Leak Stop prevents this from happening. The use of conventional mineral oils are the main cause of these problems, as they extract substances from the gaskets which results in their hardening and cracking.



“We added 3% of LanoPro Leak-Stop as instructed. The crew and chief onboard confirms that the leak has stopped including water ingress into the oil.”

Xavier Rebello
Seaspan Ship Management

Damage Control: Add 3% LanoPro Leak Stop into the total oil volume to stop uncontrolled leakage for gears, thrusters, propeller shafts, transmissions and engines. If the seals are not physically broken the leakage will stop. This is important to submerged equipment such as propeller shafts or thrusters to stop pollution and to save huge emergency repair costs.

APPLICATION

Add LanoPro Leak Stop letting the engine idle or you can use the equipment immediately to ensure an adequate mixing.

Add 1% of the total oil quantity as a preventive maintenance on every oil change or add yearly.

Add 3% of the total oil quantity to stop leakages. If still leakages still occur after a period of operation, the seals are most likely physically damaged, beyond repair and must be replaced.



Viper Wire Rope Lubricators

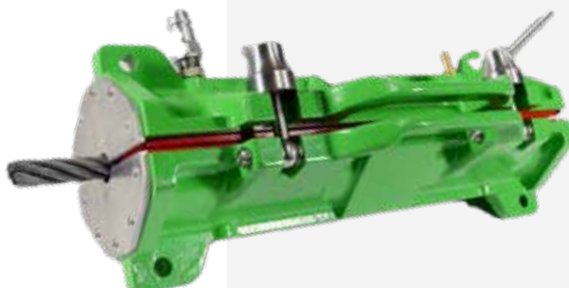
Viper Mini MK3

The Viper Mini MK 3 provides a lightweight, easy-to-use option for smaller or hard-to-access wire ropes. It cleans and lubricates wire ropes quickly, efficiently, and safely. Suitable for wire ropes with a diameter between 6mm and 44mm, the Viper Wire Rope Mini MK 3 System lubricates ropes at up to 2000m/hour. The Viper Wire Rope Lubricator provides grease penetration, moisture displacement, and total coverage by forcing lubricant into the core of the rope.



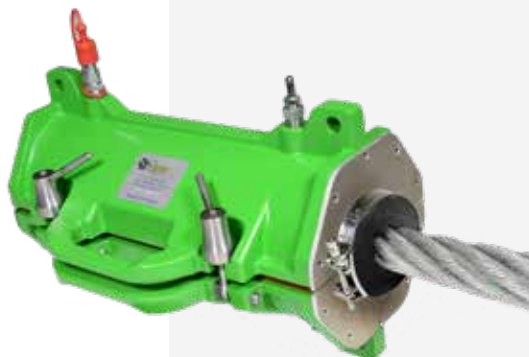
Viper Mid MK2

Fast and effective lubrication of wire ropes with a diameter between 6mm and 67mm. The Viper Mid MKII lubricates ropes at up to 2000m/hour. Recommended for use with Wharf Cranes, Ship Cranes, ROV Cables, Mine Winders, Mobile Cranes, Oil & Gas Platforms, Anchor Ropes, Deck Winches, Overhead Cranes, and Ship Loaders. The Viper Wire Rope Lubricator provides grease penetration, moisture displacement, and total coverage by forcing lubricant into the core of the rope



Viper Maxi MK2

Fast and effective lubrication of wire ropes with diameters between 50mm and 165mm. The Viper WRL MKII Maxi lubricates ropes at up to 2000m/hour. Recommended for use with ROV Cables, Vessel Crane Ropes, Underwater Offshore Wire Ropes, and Drag Lines. The Viper Wire Rope Lubricator provides grease penetration, moisture displacement, and total coverage by forcing lubricant into the core of the rope



Speed

LUBRICATE UP TO 2000M OF ROPE PER HOUR

Life Time

IMPROVED LUBRICATION IS INCREASED EQUIPMENT AND ROPE LIFE

Light Weight

EASY TO INSTALL AND OPERATE

Less Risk

SAFER THAN MANUAL LUBRICATION



KIT INCCLUDES:

- VIPER COLLAR, HIGH PRESSURE PUMP
- COMPLETE WITH AIR-REGULATOR AND AIR ISOLATION VALVE TO ENABLE SAFER OPERATION
- GREASE PUMP COMPLETE WITH DRUM COVER, CARRY HANDLE, FOLLOWER PLATE AND 4M HOSE WITH QUICK CONNECTS AT EACH END
- RETAINING RATCHET STRAPS & SHACKLES
- ROBUST CORROSION RESISTANT ALUMINIUM STORAGE CASE

LanoPro Jack-Up Grease

LanoPro OG Grease HD0.5 EAL is a high performance lithium/calcium complex thickened grease based on readily biodegradable high viscosity esters; a modern premium grade grease for sensitive environments, such as marine, offshore and mining industries.

The grease has superb mechanical stability, corrosion protection and excellent water resistance. The extreme load carrying capacity and anti-seize properties make the product a perfect choice for heavily loaded open gears, such as Jack-Up rack and pinions and similar applications where surfaces separation under static loads are essential. Also suitable for open gears on ships and as a wire protective grease.



Tested and used by leading Jack-Up Vessel operators including GustoNOV designs, and tested by leading OEM's of centralized lubrication systems, such as Bijur Delimon and Woerner.

EAL approved according to VGP requirements.
HOCNF Categories: YELLOW Y1, OCNS Group D.

| Properties | Test Method | LanoPro OG Grease HD0.5 EAL |
|----------------------------|-----------------|-----------------------------|
| Thickener | | Lithium calcium complex |
| Base fluid | | Readily Biodegradable ester |
| Colour | Visual | Beige |
| NLGI grade | ASTM D 217 mod | 0.5 |
| Dropping point | IP 396 | >220°C |
| Base oil viscosity at 40°C | ASTM D 7152 | 462 mm2/s |
| Penetration 60 strokes | ISO 2137 | 335-365 |
| 4-ball weld load | DIN 51350:4 | 7000 N |
| FZG A/2, 76/50 Load Stage | DIN 14635:3 mod | >14 |
| Emcor 20 mL salt | ISO 11007 | 2 |
| Copper corrosion 100°C/24h | ASTM D4048 | 1a |
| Water resistance at 90°C | DIN 51807:1 | 0 |
| Water wash out at 79°C | ISO 11009 | <5% |
| Flow pressure at -20°C | DIN 51805-2 | < 1400 mbar |
| Temperature range | | -20°C to +80°C (max +100°C) |
| Density | IP 530 | 1,04kg/m3 |

Wire Oil for maintenance of wires

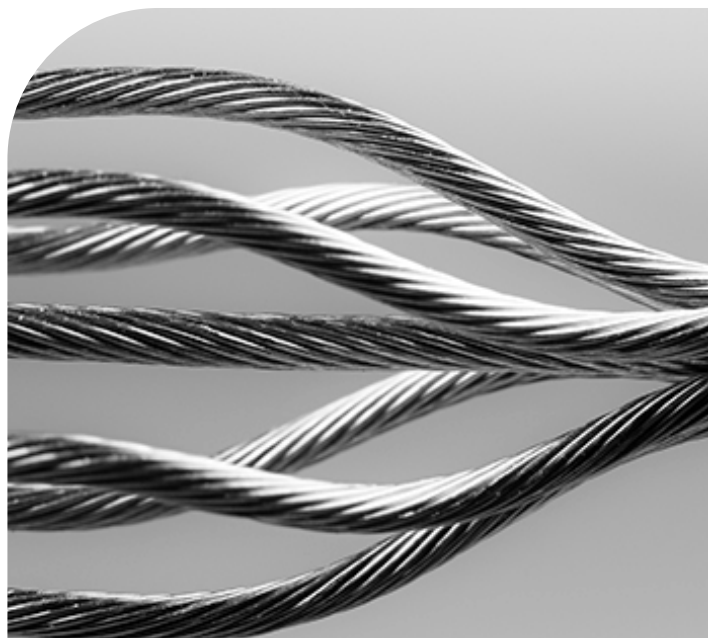
LanoPro Wire Oil 30 EAL is a premium grade oil formulation for frequent use in harsh conditions, whilst minimising lubricant build up and abrasive particle contamination. Designed for maximum lubrication and protection against degradation and corrosion.

The product forms a protective shield and will if heated penetrate deep into the wire core. It can be applied by brush or broom, but it is highly recommended to use a sprayer with heater (between 25°C to 40°C) to make the product thin so that it penetrates the wire more effectively.

Suitable for wires and chains on e.g. tower cranes, mobile cranes and dockside cranes. It is compatible with most mineral oils or other petroleum based products, a test before application is recommended.



EAL APPROVED ACCORDING
TO VGP REQUIREMENTS
HOCNF CATEGORIES: YELLOW Y1, OCNS GROUP D



PBC Environmentally Acceptable Grease

When installing a propeller boss cap on a vessel, typically after a dry dock, grease is needed to fill void space in the propeller boss and to prevent water ingress. As an alternative to conventional products, HHI can offer together with our partner LanoPro two EAL products that are suitable for this application. It is an environmentally acceptable grease used by world leading shipping companies. The product is calcium based which makes it the perfect choice for this application due to its properties. Both products are approved and listed on the HHI makers list.

Why Calcium Grease in PBC?
 Calcium thickened greases have the inherent extreme pressure (EP) properties that make them an ideal choice for multipurpose, high loaded applications. Calcium based greases also generally have higher dropping points. The all-round properties include good mechanical stability, load carrying capacity, water resistance and corrosion protection.

These properties makes LanoPro Multi Grease and Marine Grease the perfect choice for PBC installations.

| Properties | Test Method | LanoPro Multi Grease EP2 EAL | LanoPro Marine Grease EP2 EAL |
|----------------------------|----------------|------------------------------|-------------------------------|
| Thickener | | Calcium | Calcium |
| Base fluid | | Polymer vegetable oil | Synthetic esters |
| Colour | Visual | Brown | Transparent green |
| NLGI grade | ASTM D 217 mod | 2 | 2 |
| Dropping point | IP 396 | >140°C | >150°C |
| Base oil viscosity at 40°C | ASTM D 7152 | 130 mm2/s | 500 mm2/s |
| Penetration 60 strokes | ISO 2137 | 265-295 | 265-295 |
| 4-ball weld load | DIN 51350:4 | 2800 N | 3200 N |
| Water resistance at 90°C | DIN 51807:1 | 0 | 0 |
| Water wash out at 38°C | ISO 11009 | <10% | <10% |
| Emcor salt water | ISO 11007 | ≤2-2 | ≤2-2 |
| Temperature range | | -20°C to +80°C (max +100°C) | -40°C to +100°C (max +110°C) |



“Due to the good feedback received from our crew, the technical performance of the lubricants and favorable commercial terms we have since 2013 fully rolled out LanoPro’s complete marine product range across our entire fleet. I would like to in particular highlight the quality and performance of their VGP EAL approved lubricants. LanoPro has proven to be a reliable and professional supplier in terms of order management, on-time deliveries and high product availability across their stock points globally.”

Surajit Chanda | General Manager and Head of Fleet Supervision | BW Fleet Management

“We would like to highlight the strong results obtained from our internal testing, the technical performance of the lubricants and responsiveness from the Lanopro team both in Europe and locally here in Korea. This combined with favorable commercial terms has resulted in a partnership over the last years where we now are using Lanopro EAL wire grease on our EAL wire rope products. Lanopro has also proven to be a reliable and professional supplier in terms of order management, on- time deliveries and general business manners.”

Mr. Kim Minyong | QM Team manager | DSR Wire Corp

“We have been using LanoPro’s wire rope lubricants since the beginning of 2010, initially starting off with their wire oils on selected vessels. Due to good feedback received from our crews, the technical performance of the lubricants and favorable commercial terms we are now using LanoPro as the primary supplier of our wire rope lubricants across our fleet. By using LanoPro’s lubricants we have experienced pro-longed life time of our wire ropes enabling us to optimize our operation and costs.”

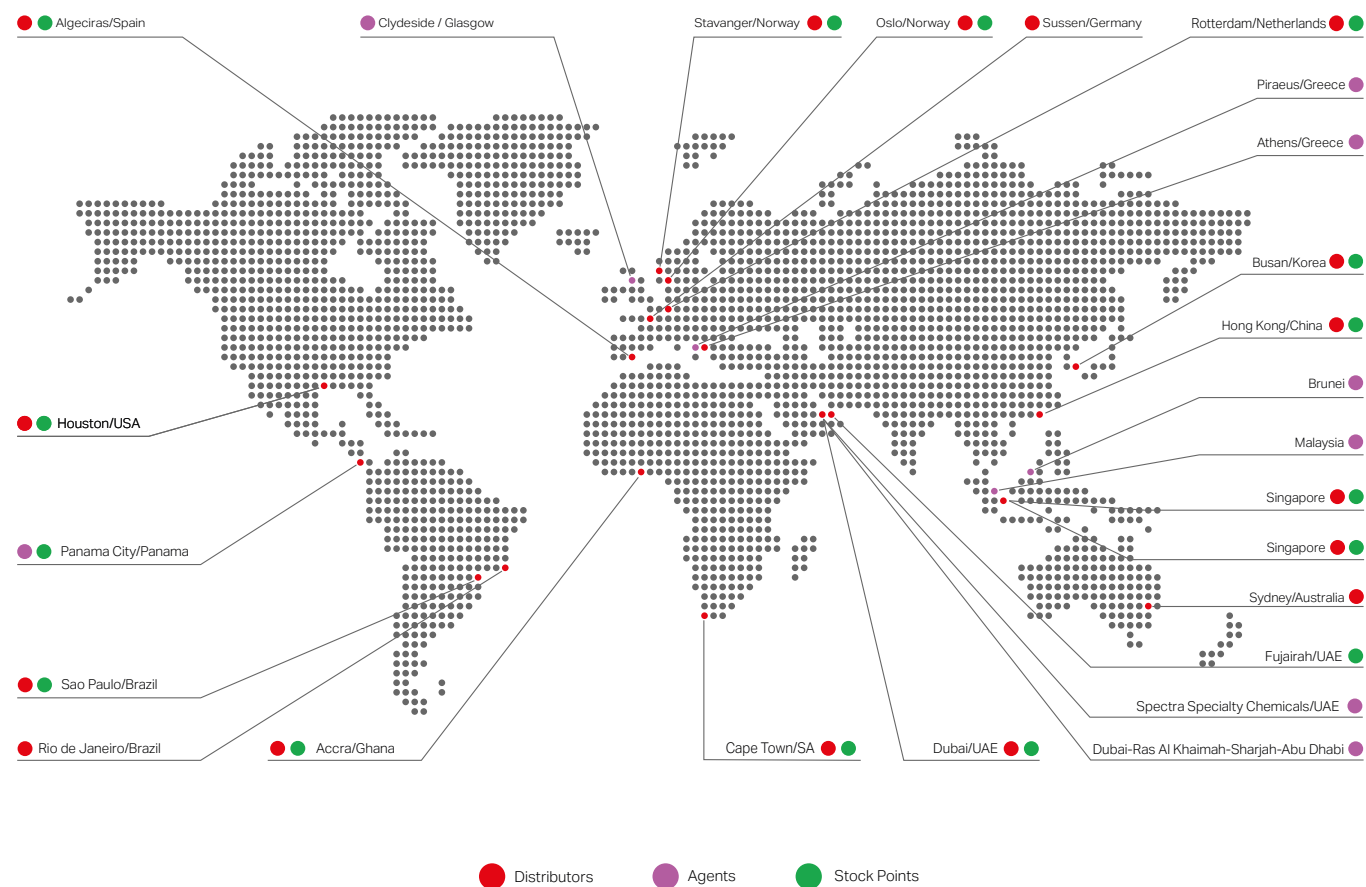
Lars Sverre Hemnes | Crane Operation Supervisor | Solstad Shipping AS

“We have been using LanoPro’s Leakstopper onboard a few vessels that had issues with leakage of gear oil from the bow thruster. We added 3% of LanoPro LeakStop as instructed. The crew and chief onboard confirms that the leak has stopped including water ingress into the oil. We can safely recommend LanoPro Leak stop as a specialty product for use in case of seal leaks which are not accessible for renewal.”

Xavier Rebello | Senior Vessel Manager | Seaspan Ship Management



Sales Network



Distributors & Agents

| | Company | Country | Phone | E-Mail | Website |
|-----|---------------------------------------|--------------------|----------------------|------------------------------|-----------------------------|
| ● ● | Unigrade Trading Pte Ltd | Singapore | +65 6862 4733 | sales@unigrade.com.sg | unigrade.com.sg |
| ● ● | Enerchem (S) Pte Ltd | Singapore | +65 6257 9923 | enquiry@falchem.net | falchem.sg |
| ● | Enerchem International (HK) Ltd | Hong Kong | +852 3978 0068 | rudy@falchem.net | falchem.sg |
| ● | Enerchem | Brunei | +65 6257 9923 | cs@falchem.net | falchem.sg |
| ● ● | Lano Co., Ltd | South Korea | +82 2 3476 5211 | brian.paik@lanotech.co.kr | |
| ● | Stellar Petroleum | Malaysia | +60 12 327 2703 | inquiry@stellarpetroleum.com | stellarpetroleum.com |
| ● | Siort Pty Ltd | Australia | +61 1300 706 952 | sales@siort.com.au | siort.com.au |
| ● | CTS Offshore & Marine Ltd. | UAE, GCC | + 971 9 2282 065 | uae@ctsom.com | ctsom.com |
| ● | Super Edge | Dubai | +971 506 254 | info@superedgeme.com | superedgeme.com |
| ● | Technava SA | Greece | +30 210 411 3916 | info@technava.gr | technava.gr |
| ● | Trafalgar Oil | Greece / Worldwide | +30 210 899 1222 | dsmeulders@trafalgar.gr | trafalgar.gr |
| ● ● | SOS Oil & Lubrication Distr (Pty) Ltd | South Africa | +27 21 448 5564 | info@sosoil.co.za | sosoil.co.za |
| ● | Joratec Limited | Ghana | +233 (0) 540 122 323 | r.akwetea@joratecltd.com | joratecltd.com |
| ● | Marine Offshore Management Ltd | United Kingdom | +44 (0)141 356 6506 | ops@marineom.com | marineoffshoremanagementcom |
| ● | Wrist Ship Supply Spain S.L | Spain | +34 956 675 078 | anmo@wrist.es | wrist.com |
| ● ● | Wrist Middle East | UAE | +971 6 514 7400 | sales@dubai.wrist.com | wrist.com |
| ● ● | Wrist-Klevenberg | Europe | +31 (0)10 283 2400 | rotterdam@wrist.com | wrist.com |
| ● ● | Relekt AS | Norway | +47 2266 0400 | terje.tjelland@relekt.no | relekt.no |
| ● ● | Wrist USA inc. | USA - Gulf Coast | +1-281-817-2060 | npem@wrist.com | wrist.com |
| ● ● | Unax Offshore | Brazil | +55 (22) 2773 5096 | comercial@unax.com.br | unax.com.br |
| ● ● | Wrist Panama | Panama | +507 317 6200 | panama@wrist.com | wrist.com |
| ● | Adex Group | Brazil | +55 (11) 5897-7832 | contact@adexgroup1.com | adexgroup1.com |
| ● ● | John Dahle | Norway | +47 51 64 69 90 | post@john-dahle.no | john-dahle.no |
| ● ● | LanoPro Production AS | Norway | +47 40 00 15 14 | mail@lanopro.com | lanopro.com |



Approvals & OEM's

| Environmentally Approvals | Explanation | Website |
|---------------------------|---|--|
| HOCNF | Harmonised Offshore Chemicals Notification Format | www.miljodirektoratet.no/en/ |
| SS 155470 | Swedish Standard | www.sp.se/km/grease |
| EU ECOLABEL | European Certification for various products | www.ecolabel.eu |
| ACHILLES | Supplier approval for the offshore industry | www.achilles.com |
| The Nordic Swan | The official ecolabel of the Nordic countries | www.svanemarket.no/en/ |

| Other Approvals | Explanation | Website |
|-----------------|---|--|
| IMPA | International Marine Purchasing Association | www.impa.net |

| Selected OEM'S | | |
|-----------------------------|---|--|
| Thordon Bearings Inc. | Qualified for Rudder Bearings | www.thordonbearings.com |
| Bijur Delimon International | Qualified for Central Lubrication Systems | www.bijurdelimon.com |
| MOL Techno-Trade, Ltd | Qualified for Boss Cap Fins | www.motech.co.jp/e_index.html |
| DSR | Qualified for Power Flex and Power Lift Wires | www.dsr.com:5001/main/?l=ENG |
| Flutek Ltd. | Qualified for Rudder Bearings | www.flutek.co.kr/eng/main.php |
| SEC Bremen | Qualified for Container Lashing | www.sec-bremen.de |
| MMG Meckelburger Metallguß | Qualified for Propeller Cap Filling | www.mmg-propeller.de/en.html |
| JUNG-A Marine | Qualified for Various Deck Equipment | www.jung-a.co.kr |



Selected Customers

| Company | Company | Company | Company |
|------------------------------|--------------------------|--------------------|---------------------|
| Aker Solutions | Flutek | Manho Rope & Wire | Statoil |
| Angelicoussis Shipping Group | Frontline | Maran Gas Maritime | Tankerska Plovdba |
| Anglo-Eastern | GulfMark | MOL | Teekay |
| Baker Hughes | Hyundai Heavy Industries | MOL Techno Trade | Thome |
| BW Fleet Management | IKM Instrutek | MSC | Thordon |
| Carl Stahl | Island Offshore | Rolls-Royce | TORM |
| Capital Maritime | Knutsen Shipping | Schlumberger | Trafalgar Oil Ltd. |
| Central Mare Inc. | Lomar Shipping | Scorpio Tankers | Transnet SOC |
| DOF Offshore | London Ship Managers | SEC | Wet Wave |
| DSME | Maersk Line | SHI | World Fuel Services |
| DSR | Maersk Oil Trading | Solstad Farstad | |



LanoPro

Contact Information

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Visit www.lanopro.com

