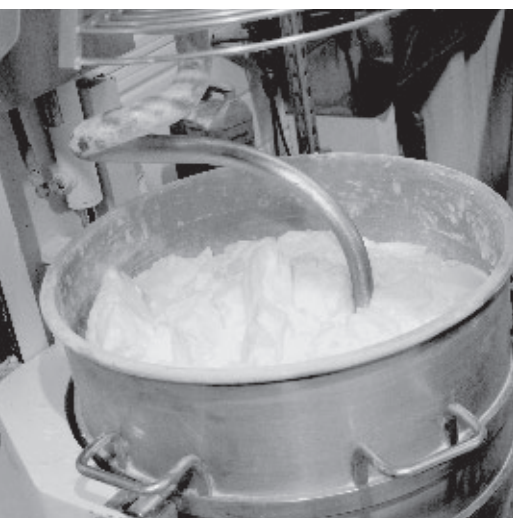
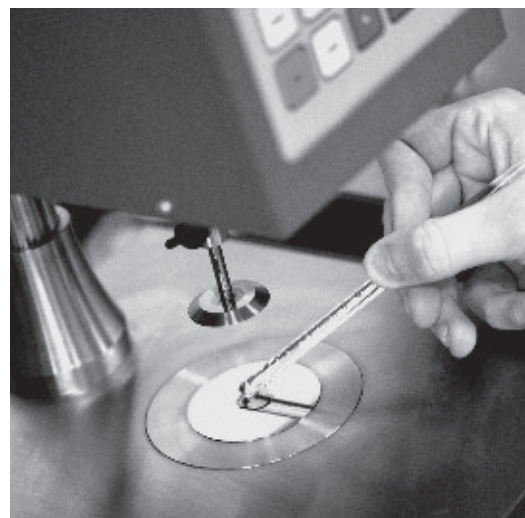


LUBRILOG

LUBRICATION ENGINEERING

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S U M M A R Y

LUBRILOG specializes in the conception and the manufacturing of speciality lubricants with a specific focus on perfluorinated lubricants. Whatever be the application requirements, LUBRILOG offers to develop customized high performance premium quality lubricants.

Since the launch of LUBRILOG in 1987 by a group of engineers, the company's resources were focussed on high performance lubricants for technically demanding industrial applications. Today LUBRILOG's solutions can be found in diverse industrial segments such as Automobile, Aerospace, Nuclear, Pharma, Food etc.

In 2009, The constantly increasing global demand for LUBRILOG solutions has allowed us to start a new manufacturing unit in Romans sur Isère based in the south of France. This unit is equipped with all the latest amenities while respecting the international safety norms in vigour. LUBRILOG is an ISO 9001: 2008 certified company and is in the process of getting the ISO 14001 certification.

Our complete range of perfluorinated lubricants are produced in a separate isolated unit free from all types of micro pollution and also far from other types of lubricants. Thus LUBRILOG ensures the delivery of premium quality, high performance lubricants all over the world.

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FLUOSTAR®

FLUORINATED GREASE

FLUOSTAR® represents a range of high quality greases based on specific perfluorinated oils. FLUOSTAR® greases are recommended when the other lubricants, mineral or synthetic, cannot meet the most demanding specifications.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | % Evaporation after 24H | Advantages |
|-------------------|---------------------------------------|-------------------|----------|-------------------------|------|----------------------------|---|
| | | | | Mini | Maxi | | |
| FLUOSTAR L 2 L | 15 | PTFE | PFPE | -60 | 120 | 10/120°C | <ul style="list-style-type: none"> • Exceptional stability at high temperatures • Excellent chemical inertness to both gases and aggressive liquids • Non-flammable and non-toxic • Total compatibility with plastics and elastomers • Very long durability • Very low friction • Very low vapor pressure • Good resistance to nuclear radiations |
| FLUOSTAR 2 L | 150 | PTFE | PFPE | -40 | 240 | 1,5/200°C | |
| FLUOSTAR H 2 PLUS | 400 | PTFE | PFPE | -30 | 260 | 0,9/200°C | |
| FLUOSTAR FH 2 | 500 | PTFE | PFPE | -30 | 300 | 0,5/200°C | |
| FLUOSTAR LX 2 | 100 | PTFE | PFPE | -50 | 200 | 2,5/150°C | |
| FLUOSTAR MX 2 | 200 | PTFE | PFPE | -50 | 250 | 1,5/200°C | |
| FLUOSTAR HX 2 | 400 | PTFE | PFPE | -40 | 300 | 0,5/200°C | |
| FLUOSTAR SX 2 | 310 | PTFE + Silica Gel | PFPE | -60 | 320 | 0,4/200°C | |
| FLUOSTAR SG 2 | 310 | Silica Gel | PFPE | -60 | 320 | 0,4/200°C | |
| FLUOSTAR XL | 32 | PTFE | PFPE | -85 | 150 | 1,5/150°C | |
| FLUOSTAR XM | 200 | PTFE | PFPE | -65 | 280 | 0,5/200°C | |
| FLUOSTAR XS | 700 | PTFE | PFPE | -50 | 320 | <0,1/200°C | |



For all specific requests, please don't hesitate to contact us through mail: contact@lubrilog.fr or by phone +33 4 75 45 26 00



FLUORINATED GREASES

FLUOLOG® represents a range of greases based on perfluorinated oils. FLUOLOG® greases are recommended when the other lubricants, either mineral based or synthetic based, cannot meet the desired specifications.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | % Evaporation after 24H | Advantages |
|---------------|---------------------------------------|-----------|----------|-------------------------|------|----------------------------|--|
| | | | | Mini | Maxi | | |
| FLUOLOG K 258 | 8 | PTFE | PFPE | -70 | 80 | 10 / 90°C | <ul style="list-style-type: none"> • Exceptional high temperature stability. • Excellent chemical inertness (gas and aggressive liquids) • Non-flammable • Total compatibility with plastics and elastomers • Very long life time • Very low friction • Very low vapor pressure • Good resistance to nuclear radiations • Non toxic |
| FLUOLOG K 259 | 15 | PTFE | PFPE | -60 | 120 | 10 / 120°C | |
| FLUOLOG KEL | 15 | PTFE | PFPE | -60 | 120 | 8 / 120°C | |
| FLUOLOG LMX 2 | 85 | PTFE | PFPE | -70 | 220 | 2,5 / 200°C | |
| FLUOLOG KEM | 90 | PTFE | PFPE | -40 | 200 | 2 / 150°C | |
| FLUOLOG LX 2 | 90 | PTFE | PFPE | -40 | 200 | 2 / 150°C | |
| FLUOLOG KES | 220 | PTFE | PFPE | -30 | 250 | 0,5 / 150°C | |
| FLUOLOG 2 L | 220 | PTFE | PFPE | -35 | 250 | 0,7 / 150°C | |
| FLUOLOG MX 2 | 220 | PTFE | PFPE | -35 | 300 | 0,5 / 150°C | |
| FLUOLOG MG 2 | 220 | Gel | PFPE | -35 | 250 | 0,5 / 150°C | |
| FLUOLOG K 400 | 395 | PTFE | PFPE | -30 | 260 | 0,7 / 200°C | |
| FLUOLOG K 500 | 500 | PTFE | PFPE | -30 | 300 | 0,3 / 200°C | |

FLUOSTAR® FOOD GRADE



FOOD GRADE

FLUOSTAR® regroups a range of premium quality greases based on specific perfluorinated oils. **FOOD GRADE** series should be used for the lubrication of bearings, seals and various assemblies operating in extreme conditions with potential risk of incidental contact with food. **FLUOSTAR® FG / SX** and **LUBRINOX** greases were approved **NSF H1** along with all the benefits of a classic **FLUOSTAR®** range.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Advantages |
|----------------------|---------------------------------------|------------|----------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| FLUOSTAR FG 0 | 500 | PTFE | PFPE | -30 | 300 | <ul style="list-style-type: none"> • Exceptional stability at high temperatures. • Excellent resistance to water and chemicals. • Non-flammable. • Full compatibility with plastics and elastomers. • Very long life. • Very low friction. • Good viscosity-temperature behavior. • Very low vapor pressure • Good resistance to nuclear radiation. • Non-toxic : Approved USDA-H1 |
| FLUOSTAR FG 1 | 500 | PTFE | PFPE | -30 | 300 | |
| FLUOSTAR FG 3 | 500 | PTFE | PFPE | -30 | 300 | |
| FLUOSTAR SX 1 | 310 | PTFE + Gel | PFPE | -60 | 320 | |
| FLUOSTAR SX 2 | 310 | PTFE + Gel | PFPE | -60 | 320 | |
| LUBRINOX 2 | 510 | Gel | PFPE | -30 | 350 | |





GRAFOLOG®

The **GRAFOLOG®** range of greases are dedicated to the lubrication of heavy duty open gear drives used in the following industries : Cement, ore, steel, coal lines in the thermal stations, fertilizers, chemicals (lateral transmissions of furnaces, grinders, dryers, coolers, mixers and rotating tubes in general)

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Avantages |
|--------------------------|---------------------------------------|-------------------|----------|-------------------------|------|---|
| | | | | Mini | Maxi | |
| GRAFOLOG H 0 | 500 | Aluminium Complex | Mineral | -20 | 120 | <ul style="list-style-type: none"> • Aluminium complex based soap thickener • High purity mono crystalline graphite • Exceptional resistance to seizing • Excellent antiwear and extreme pressure resistance properties • Resistance to high temperatures • Excellent performance under heavy loads and slow speeds |
| GRAFOLOG H 0 + | 1100 | Aluminium Complex | Mineral | -10 | 180 | |
| GRAFOLOG H 2200 | 2200 | Aluminium Complex | Mineral | 0 | 200 | |
| GRAFOLOG M FLUID | 3000 | Aluminium Complex | Mineral | -10 | 120 | |
| GRAFOLOG MT FLUID | 7500 | Aluminium Complex | Mineral | 0 | 140 | |
| GRAFOLOG H 00 R | 320 | Aluminium Complex | Mineral | -10 | 200 | |
| GRAFOLOG R FLUID | 2000 | Aluminium Complex | Mineral | -10 | 120 | |

LOGREASE®



LOGREASE®

LOGREASE® range of multifunctional greases offer a combination of benefits : excellent grip, high temperature resistance, load resistance and resistance to water.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Advantages |
|--------------|---------------------------------------|-------------------------------|----------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| LOGREASE 000 | 100 | Lithium | Mineral | -25 | 110 | <ul style="list-style-type: none"> • Multifunctional greases • Wide range of temperature utilisation • Excellent protection against corrosion • Good resistance to water |
| LOGREASE 00 | 100 | Lithium | Mineral | -25 | 120 | |
| LOGREASE 0 | 100 | Lithium | Mineral | -25 | 120 | |
| LOGREASE 1 | 100 | Lithium | Mineral | -30 | 130 | |
| LOGREASE 2 | 100 | Lithium | Mineral | -30 | 130 | |
| LOGREASE 3 | 100 | Lithium | Mineral | -30 | 130 | |
| LOGREASE M 2 | 100 | Lithium + MoS ₂ | Mineral | -30 | 150 | |



HIGH TEMPERATURE GREASES

The greases form STARPLEX® range are commonly used in mechanical and heavy industries. They are mainly employed for the medium and high temperature applications in presence of water and/or steam. These greases are also applied for the lubrication of bearing exposed to shocks and high vibration levels.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Speed factor (N.Dm) | Advantages |
|----------------------|---------------------------------------|------------------------------------|---------------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| STARPLEX G 1 | 110 | Lithium Complex | Mineral | -20 | 150 | > 400 000 | <ul style="list-style-type: none"> • High mechanical and thermal stability. • Resistance to washing. • Resistance to shocks and vibrations. • Highly adhesive. • Reinforced anti-corrosion protection. • Decreased frequency of lubrication. • Excellent, inherent antiwear and extreme pressure properties. |
| STARPLEX G 1 M | 110 | Lithium Complex + MoS ₂ | Mineral | -20 | 150 | > 400 000 | |
| STARPLEX G 2 | 110 | Lithium Complex | Mineral | -20 | 180 | > 400 000 | |
| STARPLEX G 2 M | 110 | Lithium Complex + MoS ₂ | Mineral | -20 | 180 | > 400 000 | |
| STARPLEX GM 2 | 150 | Polyurea | Mineral | -25 | 160 | > 500 000 | |
| STARPLEX GM 500 | 460 | Polyurea | Mineral | -20 | 180 | > 300 000 | |
| STARPLEX HT 462 | 460 | PTFE/Gel | Ester | -20 | 200 | > 300 000 | |
| STARPLEX GS 2 | 100 | Polyurea | Pao/Ester | -40 | 200 | > 600 000 | |
| STARPLEX HT 2 LIGHT | 32 | Lithium Gel | Pao/Ester | -50 | 190 | < 800 000 | |
| STARPLEX HT 2 MEDIUM | 150 | Nano PTFE | Special Ester | -40 | 210 | < 500 000 | |
| STARPLEX HT 2 HEAVY | 460 | Nano PTFE | Special Ester | -20 | 230 | < 250 000 | |



MULTI-PURPOSE, LONGLASTING, HIGH-TECH GREASES

STARGREASE® range of lubricants are made from semi-synthetic base oils and high technology sulphocarbonates complexes. Thanks to their composition, these greases have exceptional, inherent antiwear and extreme pressure properties coupled with excellent resistance to heat, steam and diluted chemical agents.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Speed factor (N.Dm) | Advantages |
|--------------------------|---------------------------------------|----------------------------------|------------------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| STARGREASE LIGHT | 68 | Sulfonate-carbonate / Complex | PAO / Mineral | -40 | 150 | > 600 000 | <ul style="list-style-type: none"> • Excellent protection against corrosion. • High thermal and mechanical stability. • Very high pressures resistance. • Resistance to washing. • Non-toxic (No heavy metals) • Long service life even at high temperatures. • Highly adhesive • Excellent alternative to the greases based on Barium soap |
| STARGREASE MEDIUM | 220 | Sulfonate-carbonate / Complex | PAO / Mineral | -25 | 150 | > 400 000 | |
| STARGREASE HEAVY | 1000 | Sulfonate-carbonate / Complex | PIB / Mineral | -20 | 150 | > 250 000 | |
| STARGREASE HV | 420 | Sulfonate-carbonate / Complex | Mineral | -25 | 180 | > 300 000 | |
| STARGREASE LSK 2 | 460 | Complex / Complex | PIB / Mineral | -20 | 160 | > 100 000 | |



GREASES FOR SMALL MECHANISMS AND COMPOSITE MATERIALS

PLASTOGREASE® range was formulated by LUBRILOG from saponified synthetic oils. These greases can be used for a variety of industrial applications such as automotive, micro mechanics and connectors. These greases are of particular interest wherever the plastics are involved or wherever a low friction at low temperature is required.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Speed factor (N.Dm) | Advantages |
|----------------------|---------------------------------------|-------------------|----------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| PLASTOGREASE BASE | 22 | Lithium | PAO | -50 | 150 | >800 000 | <ul style="list-style-type: none"> • Good compatibility with plastics and elastomers. • Good thermal and mechanical stability • Very low coefficient of friction. • Excellent antisqueak properties. • Can be used at very low temperatures. • Very good viscosity index. • Good adhesion, depending on grades. • Non-toxic |
| PLASTOGREASE TIXO | 32 | Lithium + Gel | PAO | -50 | 150 | >800 000 | |
| PLASTOGREASE TAC | 46 | Lithium | PAO | -50 | 150 | >500 000 | |
| PLASTOGREASE TF | 32 | Lithium + PTFE | PAO | -50 | 150 | >500 000 | |
| PLASTOGREASE TFH | 750 | Lithium + PTFE | PAO | -40 | 150 | >250 000 | |



HIGH PERFORMANCE SYNTHETIC GREASES

PLASTOPLEX® range offers a low traction coefficient favouring the energy savings and long durability of the bearings. They are also applicable for the lubrication of plastic pieces in the automotive industry.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Speed factor (N.Dm) | Advantages |
|----------------|---------------------------------------|--------------------|----------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| PLASTOPLEX 32 | 32 | Lithium Complex | PAO | -50 | 150 | >800 000 | <ul style="list-style-type: none"> • Good compatibility with plastics and elastomers • Good thermal and mechanical stability • Very low traction coefficient • Excellent antisqueak properties • Applicable even in the low temperatures • Very good viscosity index • Good adherence depending upon the grades • Non-toxic |
| PLASTOPLEX 100 | 100 | Lithium Complex | PAO | -50 | 150 | >800 000 | |
| PLASTOPLEX 220 | 220 | Lithium Complex | PAO | -50 | 150 | >500 000 | |
| PLASTOPLEX 460 | 460 | Lithium Complex | PAO | -50 | 150 | >500 000 | |



VERY HIGH SPEED BEARING GREASES

SPEED® range has been designed by LUBRILLOG from synthetic saponified oils for the lubrication of very high speed bearings (N.Dm : 1 000 000). These lubricants offer low friction and low torque even at very low temperatures.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Advantages |
|------------|---------------------------------------|-------------------|----------|-------------------------|------|---|
| | | | | Mini | Maxi | |
| SPEED GB 1 | 46 | Barium Complex | PAO | -45 | 160 | <ul style="list-style-type: none"> • Applicable for very high speeds • High thermal and mechanical stability • Very low coefficient of friction • Excellent antisqueak properties • Applicable for very low temperatures • Very good viscosity index • Non-toxic |
| SPEED GB 2 | 46 | Barium Complex | PAO | -45 | 180 | |
| SPEED GL 2 | 14 | Lithium | Ester | -70 | 130 | |



SILICON PASTES

Conceived from a selection of silicon oils the complete range of **SILOG®** and **STARSIL®** greases serve a wide range of applications involving friction. They reduce friction, offer sealing and serve as assembly aid for mounting modern materials such as plastics, elastomers, mixed assemblies (metals/plastics) over a wide range of temperatures without any toxicity.

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Speed factor (N.dm) | Advantages |
|-------------------------|---------------------------------------|-----------|----------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| SILOG 1, SILOG 2 | 350 | Gel | Silicone | -50 | 180 | >300 000 | <ul style="list-style-type: none"> • Very good compatibility with plastics and elastomers • Very good stability to extreme temperatures • Excellent antisqueak properties • Excellent viscosity index • Good adherence according to grades • Very low friction in presence of PTFE - thickener • Completely non-toxic without any odour. |
| SILOG 1352 | 5000 | Gel | Silicone | -50 | 180 | >200 000 | |
| SILOG 33 | 350 | Lithium | Silicone | -50 | 180 | >500 000 | |
| SILOG 111 | 10 000 | Gel | Silicone | -40 | 200 | >100 000 | |
| STARSIL 2 | 350 | PTFE | Silicone | -50 | 180 | >300 000 | |
| STARSIL HT 2 | 125 | PTFE | Silicone | -50 | 200 | >600 000 | |

MOUNTING PASTES



PIGMENTED ANTI 'CORROSVE' MOUNTING PASTES

These compounds, incorporating a high amount of mineral or organic pigments are particularly developed by LUBRILOG for the applications involving the metallic assemblies exposed to high temperatures or aggressions such as :

- Fretting corrosion
- Oxidation
- Galvanic corrosion

| Products | Viscosity 40° C mm ² /s | Thickener | Base oil | Temperature range °C | | Advantages |
|--------------|---------------------------------------|------------------------|------------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| CERILOG | 460 | Sulfo-card/ complex | Mineral | -30 | 160 | <ul style="list-style-type: none"> • No heavy metals. • Efficient even after liquid phase disappearance. • Facilitate both electric and thermal conductivity. • Excellent anti-seizing properties • Eliminate static electricity • Exceptional anti-corrosion properties |
| CUPROLOG G 1 | 150 | Lithium + Cooper | Mineral | -30 | 1000 | |
| ALUSTAR G 1 | 150 | Lithium + Aluminium | Mineral | -30 | 600 | |
| GRAFINOX G 1 | 68 | Gel + Inox | PAO | -50 | 1000 | |
| FLUORINOX | 460 | Gel + Inox | PFPE | -30 | 1000 | |
| GALVASIL P | 750 | Gel + Zinc | Silicone P | -60 | 650 | |
| GALVAFLUOR Y | 500 | Gel + Zinc | PFPE | -30 | 650 | |
| LUBRINOX 2 | 510 | Gel | PFPE | -30 | 350 | |



LUBRICATION OF MATERIALS UNDER NUCLEAR RADIATION

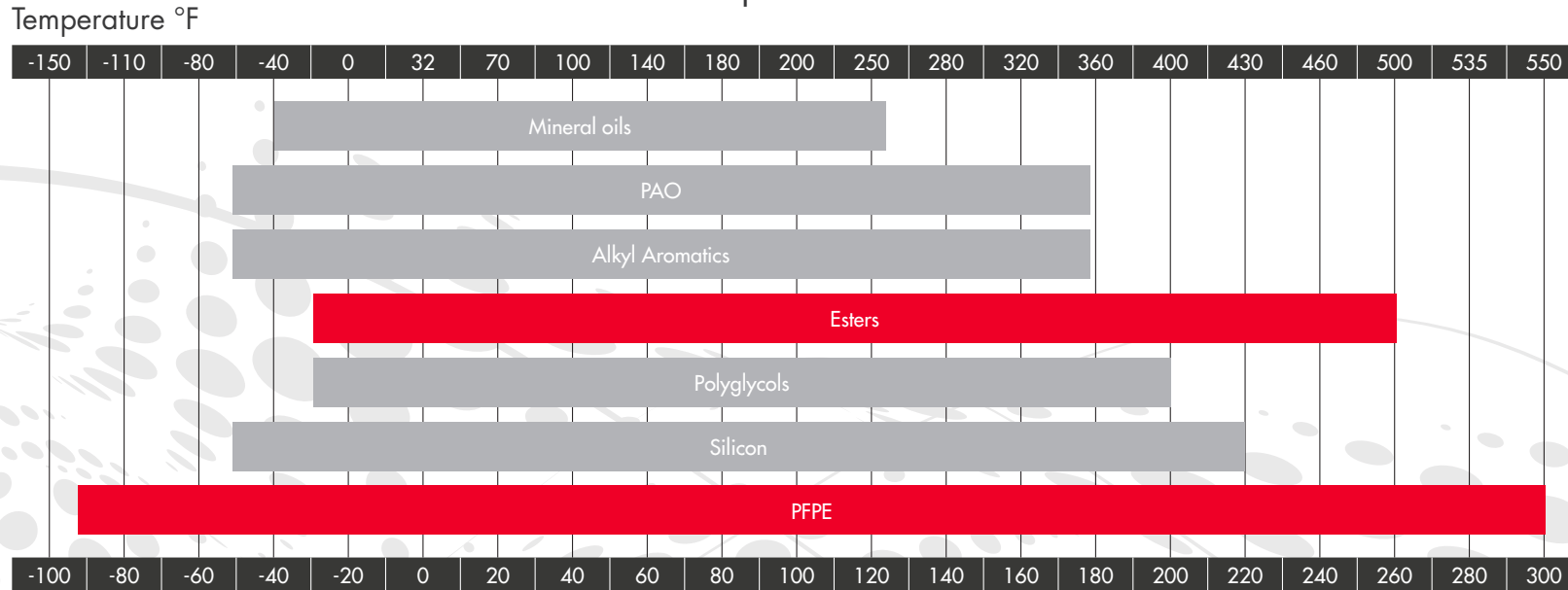
| Recommended lubricants depending on the absorbed radiation dose | Low speed bearing N.dm <100 000 | Low speed bearings N.dm > 100 000 | Gear box | | Open gears | Ball-joints, chains, slides.... | Screws, bolted parts, shaft seal.... |
|---|--------------------------------------|--------------------------------------|---|--|---------------------------------------|---|--|
| | | | Normal loads with oil | Heavy loads with grease | | | |
| $0 < D \leq 10$ K.Gray | LUBRILOG LX CEHB 3 NG | LUBRILOG LX CEHB 2 NG | Conventional lubricants | | | | LUBRINOX 2* FLUOSTAR FH 2* |
| $10 < D \leq 1000$ K.Gray | LUBRILOG LX EEHH 2 FLUOSTAR FH 2* | LUBRILOG LX EEHH 2 FLUOSTAR FH 2* | LUBRILOG LY PAO 68N FLUOSTAR LY F 220* | LUBRILOG LX EEHH 00 FLUOSTAR O L +* | LUBRILOG LX EEHH 2 FLUOSTAR 2 L +* | LUBRILOG LX EEHI 2 FLUOSTAR FH 2* FLUOSTAR CHAIN 320* | |
| $1000 < D \leq 10\ 000$ K.Gray | LUBRILOG LX AGFH 2 | LUBRILOG LX AGFA 2 | LUBRILOG PY PPE 360 | LUBRILOG LX AGFH 00 | LUBRILOG LX AGFI 2 | LUBRILOG LX AGFI 2 | |
| $D > 10\ 000$ K.Gray | Consult LUBRILOG | | | | | | |

* Lubrificants without hydrogen

All lubricants mentioned in the above table were certified by group AREVA

TEMPERATURES RANGE

Principal Base Oil



MISCIBILITY

Principal Base Oil

| Base oils | Flourinated | PPE | Silicones (phenyl) | Silicones (methyl) | Polyglycols | Esters | Mineral |
|--------------------|-------------|-----|--------------------|--------------------|-------------|--------|---------|
| Mineral | No | Yes | Yes | No | No | Yes | |
| Esters | No | Yes | Yes | No | Yes | | Yes |
| Polyglycols | No | No | No | No | | Yes | No |
| Silicones (methyl) | No | No | Yes | | No | No | No |
| Silicones (phenyl) | No | Yes | | Yes | No | Yes | Yes |
| PPE | No | | Yes | No | No | Yes | Yes |
| Fluorinated | | No | No | No | No | No | No |

LUBRILOG LY F ...



FLUORINATED OILS

The LUBRILOG LY F oils range is made from colourless, odourless and non-toxic Perfluorinated Polymers. These polymers are chemically neutral and show very good thermal stability along with excellent tribological performances. They are offered in a wide range of viscosities and offer superior quality and performance compared to other synthetic oils no matter the substrate or the environment. They are non-miscible with other lubricants.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Mass volume (20° C) | Temperature range °C | | % Evaporation (after 22h) | Advantages |
|-------------------------|---------------------------------------|--------------------|------------------------|-------------------------|------|------------------------------|---|
| | | | | Mini | Maxi | | |
| LUBRILOG LY F 15 | 15 | 60 | 1,87 | -60 | 120 | 10 (120°C) | <ul style="list-style-type: none"> • Chemically inert • Totally non-flammable • Excellent coefficient of friction • Excellent anti-seizing properties • Low vapor tension • Total compatibility with plastics and elastomers • Very long life time of the lubricant's film |
| LUBRILOG LY F 35 | 35 | 80 | 1,88 | -45 | 150 | 15 (150°C) | |
| LUBRILOG LY F 90 | 90 | 125 | 1,90 | -40 | 200 | 5 (200°C) | |
| LUBRILOG LY F 160 | 160 | 130 | 1,91 | -40 | 220 | 3 (200°C) | |
| LUBRILOG LY F 220 | 220 | 130 | 1,91 | -30 | 250 | 1 (200°C) | |
| LUBRILOG LY F 270 HT | 270 | 130 | 1,91 | -35 | 260 | < 0,6 (200°C) | |
| LUBRILOG LY F 510 HT | 510 | 136 | 1,92 | -20 | 300 | < 0,12 (200°C) | |

For all specific requests, please don't hesitate to contact us through mail: contact@lubrilog.fr or by phone **+33 4 75 45 26 00**

FLUOSTAR CHAIN



SPECIFIC FLUORINATED OILS

The FLUOSTAR® CHAIN oils range are made from perfluorinated polymers that show very good thermal stability. These oils evaporate very slowly and leave no residue even at very high temperatures. They are mainly used for chain lubrication of ovens when cleanliness is critical. These oils provide efficient protection against corrosion.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Mass volume (20° C) | Temperature range °C | | % Evaporation (after 22H) | Advantages |
|-------------------------------|---------------------------------------|--------------------|------------------------|-------------------------|------|------------------------------|---|
| | | | | Mini | Maxi | | |
| FLUOSTAR CHAIN HD* | 32 | - | 1,88 | -55 | 300 | < 0,5 % (200°C) | <ul style="list-style-type: none"> • Very low evaporation • Totally non-flammable • Excellent friction coefficient • Excellent anti-seizing properties • Improve the lifetime of the chains. • Leave no residue • Very low consumption |
| FLUOSTAR CHAIN 320 | 320 | 135 | 1,92 | -25 | 300 | < 0,5 % (200°C) | |
| FLUOCOR S* | 280 | - | 1,75 | -40 | 250 | < 1 % (200°C) | |

* Contains a vector solvent + UV tracer

SYNTHETIC OILS FOR HIGH TEMPERATURE CHAINS

The oils from the range **ESTAR®** are made from synthetic (special ester) base oils. These oils are very resistant to heat and evaporation even in presence of steam. **ESTAR®** oils incorporate special blend of additives which generate no residue at high temperature up to 250°C.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Mass volume (20° C) | Temperature range °C | | Flash point °C | % Volatility (204°C/6,5h) | Advantages |
|-----------------------------|---------------------------------------|--------------------|------------------------|-------------------------|------|-------------------|------------------------------|--|
| | | | | Mini | Maxi | | | |
| ESTAR 50 SUPER | 50 | 125 | 0,97 | -40 | 290 | 301 | 1,7 | <ul style="list-style-type: none"> • Excellent protection against corrosion • High thermal stability • Very low residue content • Resistance to washing • Very high flash point |
| ESTAR 125 HT | 125 | 120 | 0,97 | -40 | 280 | >285 | 2,1 | |
| ESTAR 125 SUPER PLUS | 125 | 120 | 0,96 | -40 | 290 | >290 | 0,4 | |
| ESTAR 250 SUPER | 250 | 135 | 0,94 | -40 | 280 | >285 | 1,7 | |
| ESTAR 250 SUPER PLUS | 255 | 125 | 0,95 | -40 | 290 | >290 | 0,5 | |
| CHAIN HT 220 | 200 | 135 | 0,94 | -40 | 280 | >275 | 2,0 | |
| ESTAR CHAIN OIL 120 | 120 | 125 | 0,96 | -30 | 280 | 285 | 1,9 | |
| ESTAR BAND OIL | 260 | 260 | 0,95 | -35 | 280 | >285 | 1,6 | |



ADHESIVE AND HYDROPHOBIC OILS

The oils from the VISCOL® range are made from selected mineral base oils. They present exceptional adhesive properties thanks to their additives' stringiness. These oils protect efficiently against corrosion even in saline environment or in presence of steam up to 150°C. They also show excellent antiwear extreme pressure properties for all types of chains.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Density (20° C) | Temperature range °C | | Advantages |
|------------------|---------------------------------------|--------------------|--------------------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| VISCOL 68 WR | 68 | 103 | 0,88 | -25 | 150 | <ul style="list-style-type: none"> • Excellent protection against wear and corrosion. • Water repellent • Highly adhesive. • Resistance to washing out. • Non-toxic. N17 • Paint compatible. |
| VISCOL 150 WR | 150 | 95 | 0,90 | -10 | 150 | |
| VISCOL 460 WR | 460 | 125 | 0,89 | -5 | 150 | |
| VISCOL 4200 | 4200 | 180 | 0,89 | -5 | 160 | |
| VISCOL 4200/75 S | 4200 | 180 | 0,89 | -5 | 160 | |

GEAR FLUID®



GEAR FLUID® is a range of high viscosity oils for the lubrication of heavy duty open gear drives used in the industries such as cement, ore, steel, thermal stations (coal lines), mineral processing, fertilizers, chemical (lateral furnace transmissions, grinders, dryers, coolers, mixers, rotary kilns and ball mills in general).

| Products | Viscosity 40° C mm ² /s | Viscosity index | Density (20° C) | Temperature range °C | | Wear test (4 balls) | Advantages |
|-------------------|---------------------------------------|--------------------|--------------------|-------------------------|------|------------------------|---|
| | | | | Mini | Maxi | | |
| GEAR FLUID 180 | 4600 | 135 | 0,92 | -5 | 100 | > 980 | <ul style="list-style-type: none"> • Exceptional resistance to seizing • Excellent extreme pressure resistance and antiwear properties • Ideal for heavy pay loads and slow speeds • Contains no heavy metals or bitume |
| GEAR FLUID 550 | 17000 | 180 | 0,92 | 0 | 120 | > 980 | |
| GEAR FLUID 1000 | 25000 | 230 | 0,92 | 0 | 120 | > 980 | |
| GEAR FLUID 550 D | 17000 | 180 | 0,92 | -10 | 120 | > 980 | |
| GEAR FLUID 1000 D | 25000 | 230 | 0,92 | 0 | 120 | > 980 | |
| GEAR FLUID R | 520 | 100 | 0,92 | -15 | 100 | > 980 | |

LUBRILOG PG OIL



SYNTHETIC OILS FOR OPEN GEAR DRIVES AND HIGH EFFICIENCY BEARINGS

Elaborated from polyglycol, these oils are essential for the lubrication of torque open gear drives, worm gears or other mechanisms where friction is a critical parameter. They can be used with some elastomers. These oils are not compatible with mineral oils and single-component paints.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Density (20° C) | Temperature range °C | | Wear ASTM | Bearing FZG | Advantages |
|----------------------|---------------------------------------|--------------------|--------------------|-------------------------|------|--------------|----------------|---|
| | | | | Mini | Maxi | | | |
| LUBRILOG PG OIL 100 | 100 | 220 | 1,05 | -40 | 160 | 0,30 | 12 | <ul style="list-style-type: none"> • Absorbs humidity • Very high viscosity index • Excellent coefficient of friction • Excellent anti-seizing properties • Absence of residues at high temperatures • Improved efficiency of open gear drives • Long service life |
| LUBRILOG PG OIL 150 | 150 | 220 | 1,05 | -34 | 170 | 0,30 | 12 | |
| LUBRILOG PG OIL 220 | 220 | 230 | 1,05 | -35 | 170 | 0,35 | 12+ | |
| LUBRILOG PG OIL 320 | 320 | 240 | 1,05 | -33 | 170 | 0,35 | 12+ | |
| LUBRILOG PG OIL 460 | 460 | 250 | 1,05 | -30 | 180 | 0,35 | 12+ | |
| LUBRILOG PG OIL 680 | 680 | 260 | 1,05 | -30 | 180 | 0,35 | 13 | |
| LUBRILOG PG OIL 1000 | 1000 | 280 | 1,05 | -30 | 180 | 0,35 | 13 | |

LUBRILOG LY PAO ... AW



HIGH PERFORMANCE SYNTHETIC OILS

Oils from our LUBRILOG LY PAO ... AW range offer a high resistance to both high as well as low temperatures, resistance to heavy loads, offer antiwear and anticorrosion properties. Besides, they remain perfectly compatible with mineral oil based lubricants. These oils offer a very long lifetime for the lubrication of heavy duty gears and bearings.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Density (20° C) | Temperature range °C | | Wear ASTM | Bearing FZG | Advantages |
|--------------------------------|---------------------------------------|--------------------|--------------------|-------------------------|------|--------------|----------------|--|
| | | | | Mini | Maxi | | | |
| LUBRILOG LY PAO 68 AW | 68 | 145 | 0,84 | -55 | 150 | 0,3 | 12 | <ul style="list-style-type: none"> • No heavy metals • High viscosity index • Low friction coefficient • Excellent anti-seizing properties • Suitable for low and high temperatures • High compatibility with plastics and some elastomers |
| LUBRILOG LY PAO 100 AW | 100 | 145 | 0,87 | -50 | 150 | 0,3 | 12 | |
| LUBRILOG LY PAO 150 AW | 150 | 150 | 0,86 | -45 | 150 | 0,3 | 12 | |
| LUBRILOG LY PAO 220 AW | 220 | 150 | 0,86 | -45 | 150 | 0,3 | 12+ | |
| LUBRILOG LY PAO 320 AW | 320 | 155 | 0,86 | -45 | 150 | 0,3 | 12+ | |
| LUBRILOG LY PAO 460 AW | 460 | 155 | 0,87 | -40 | 150 | 0,3 | 12+ | |
| LUBRILOG LY PAO 680 AW | 680 | 160 | 0,87 | -40 | 160 | 0,35 | 12+ | |
| LUBRILOG LY PAO 1000 AW | 1000 | 160 | 0,87 | -40 | 160 | 0,35 | 13 | |

LUBRILOG LCC ... M



GENERAL PURPOSE HYDRAULIC TRANSMISSION OIL

The extreme pressure oils from the range LUBRILOG LCC ... M, are incorporated with molybdenum bisulphide (MoS_2) additive. This range of lubricants offer an excellent resistance to shear force and antiwear. They offer a long lasting lubrication for several applications : bearings submitted to heavy loads, chains, open gear drives under the casting, high viscosities, heavy duty open gear drives (lateral command with rotating tube) and low speed bearings.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Mass volume (20° C) | Temperature range °C | | Advantages |
|----------------------|---------------------------------------|--------------------|------------------------|-------------------------|------|---|
| | | | | Mini | Maxi | |
| LUBRILOG L CC 68 M | 68 | 97 | 0,90 | -24 | 120 | <ul style="list-style-type: none"> • High viscosity index • Contain Molybdenum bisulphide additive • Exceptional resistance to seizing. • Excellent extreme pressure resistance and antiwear properties • Resistance to high temperatures • High performance under heavy loads and low speeds • Contains no bitume |
| LUBRILOG L CC 100 M | 100 | 97 | 0,90 | -24 | 120 | |
| LUBRILOG L CC 150 M | 150 | 97 | 0,90 | -24 | 120 | |
| LUBRILOG L CC 220 M | 220 | 94 | 0,90 | -21 | 120 | |
| LUBRILOG L CC 320 M | 320 | 98 | 0,90 | -15 | 120 | |
| LUBRILOG L CC 460 M | 460 | 98 | 0,90 | -12 | 120 | |
| LUBRILOG L CC 680 M | 680 | 98 | 0,90 | -8 | 120 | |
| LUBRILOG L CC 1000 M | 1000 | 110 | 0,90 | -3 | 120 | |
| LUBRILOG L CC 2200 M | 2200 | 99 | 0,90 | 0 | 120 | |
| LUBRILOG L CC 3200 M | 3200 | 107 | 0,90 | +3 | 120 | |
| LUBRILOG L CC 680 R | 680 | 98 | 0,93 | -8 | 120 | |

LUBRILOG L HM ...



GENERAL PURPOSE OILS FOR HYDRAULIC TRANSMISSIONS

LUBRILOG L HM is a range of fluids adapted for all hydraulic systems operating under high temperatures and pressures.

| Products | Viscosity 40° C mm ² /s | Viscosity | Density (20° C) | Temperature range °C | | Advantages |
|--------------------------|---------------------------------------|-----------|--------------------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| LUBRILOG L HM 22 | 22 | 107 | 0,86 | -27 | 120 | <ul style="list-style-type: none"> • Reinforced antiwear protection • Good thermal stability • Good resistance to oxidation • Reduction of residue • Good filtration properties |
| LUBRILOG L HM 32 | 32 | 105 | 0,87 | -24 | 120 | |
| LUBRILOG L HM 46 | 46 | 104 | 0,88 | -30 | 120 | |
| LUBRILOG L HM 68 | 68 | 103 | 0,88 | -27 | 120 | |
| LUBRILOG L HM 100 | 100 | 103 | 0,89 | -24 | 120 | |

LUBRILOG L HV ...



OILS FOR HYDRAULIC TRANSMISSIONS AND EXTREME TEMPERATURES

LUBRILOG L HV is a range of fluids with high viscosity index for the hydraulic systems operating at low temperatures.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Density (20° C) | Temperature range °C | | Advantages |
|-------------------|---------------------------------------|--------------------|--------------------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| LUBRILOG L HV 15 | 15 | 150 | 0,86 | -45 | 120 | <ul style="list-style-type: none"> • Reinforced antiwear protection and good thermal stability • Good resistance to oxidation and prolonged intervals of oil change • Reduction of residues • Good filtration properties |
| LUBRILOG L HV 22 | 22 | 155 | 0,87 | -43 | 120 | |
| LUBRILOG L HV 32 | 32 | 155 | 0,87 | -42 | 120 | |
| LUBRILOG L HV 46 | 46 | 155 | 0,87 | -42 | 120 | |
| LUBRILOG L HV 68 | 68 | 160 | 0,88 | -36 | 120 | |
| LUBRILOG L HV 100 | 100 | 160 | 0,89 | -33 | 120 | |

LUBRILOG LY S ...



SILICONE BASED OILS

LUBRILOG LY S is a range of dimethylpolysiloxane type of non-toxic oils. They are characterised by remarkable thermal stability and compatibility with plastics and elastomers.

| Products | Viscosity 40° C mm ² /s | Viscosity index | Mass volume (20° C) | Temperature range °C | | Advantages |
|--------------------|---------------------------------------|--------------------|------------------------|-------------------------|------|--|
| | | | | Mini | Maxi | |
| LUBRILOG LY S 20 | 20 | 290 | 0,95 | -60 | 180 | <ul style="list-style-type: none"> • Very high viscosity index • Excellent thermal stability |
| LUBRILOG LY S 50 | 50 | 290 | 0,96 | -55 | 180 | |
| LUBRILOG LY S 100 | 100 | 300 | 0,96 | -55 | 180 | |
| LUBRILOG LY S 150 | 150 | 320 | 0,96 | -50 | 180 | |
| LUBRILOG LY S 250 | 250 | 320 | 0,96 | -50 | 180 | |
| LUBRILOG LY S 350 | 350 | 350 | 0,96 | -50 | 180 | |
| LUBRILOG LY S 500 | 500 | 370 | 0,97 | -50 | 180 | |
| LUBRILOG LY S 1000 | 1000 | 400 | 0,97 | -50 | 180 | |
| LUBRILOG LY S 5000 | 5000 | 420 | 0,97 | -49 | 180 | |

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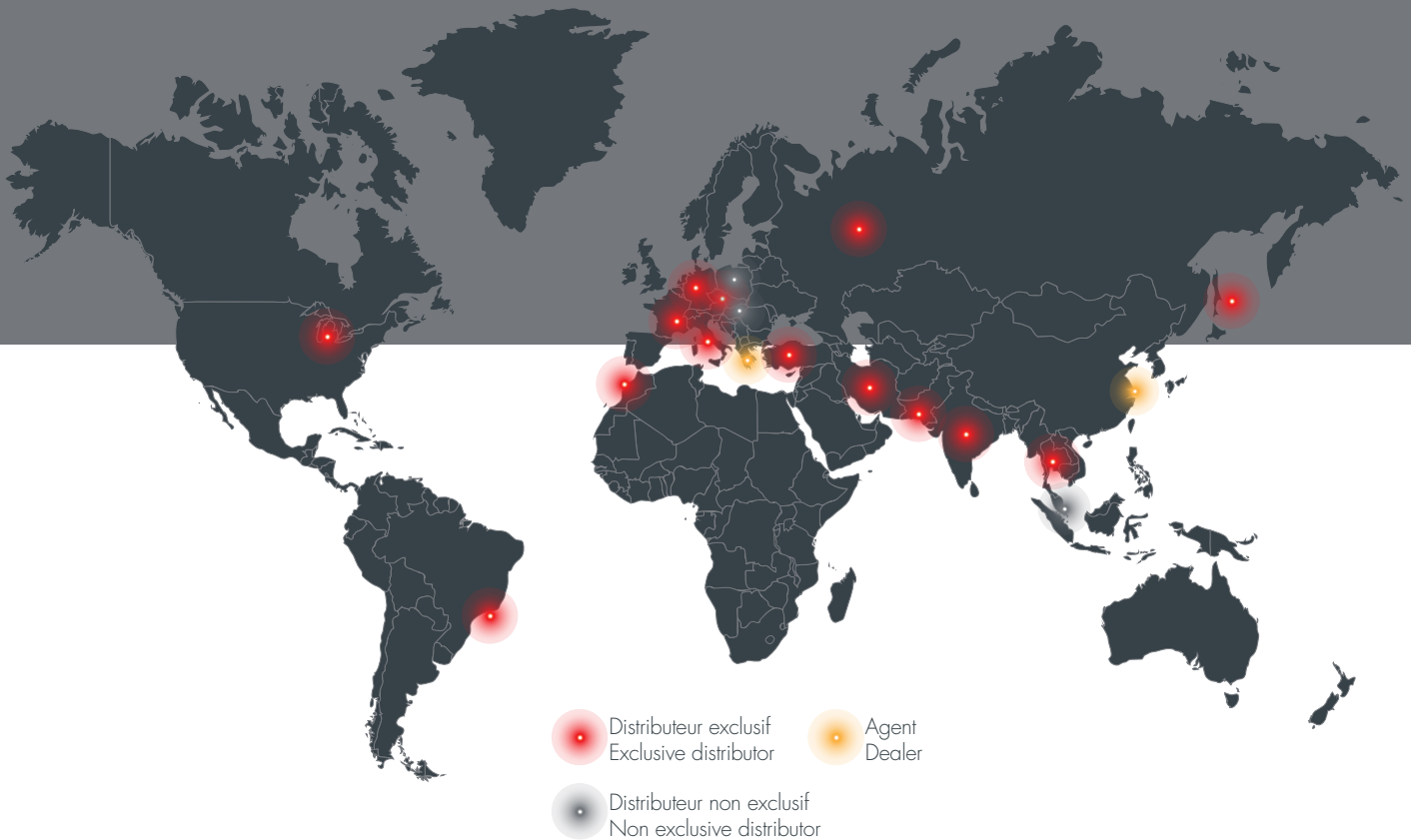
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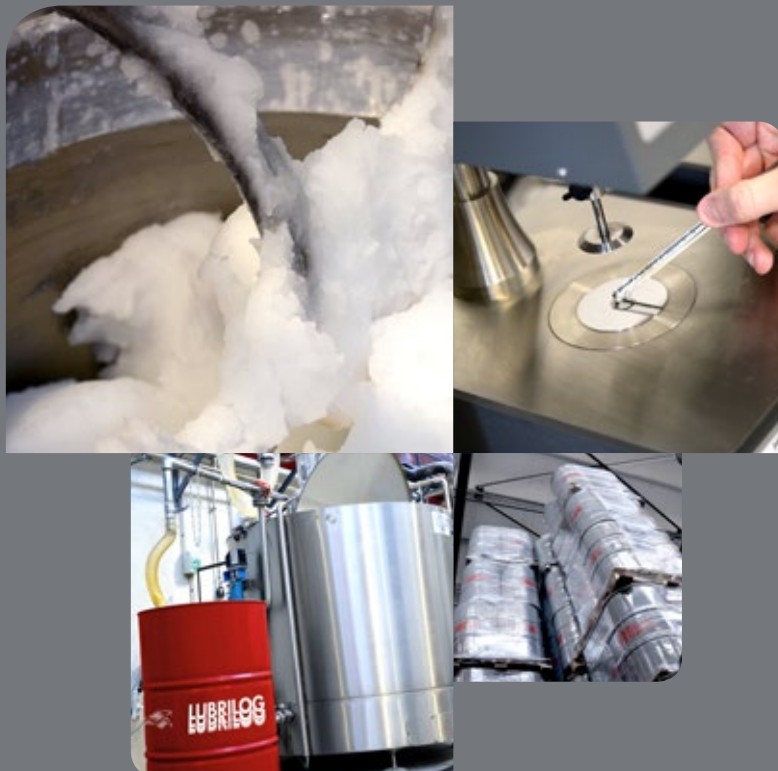


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