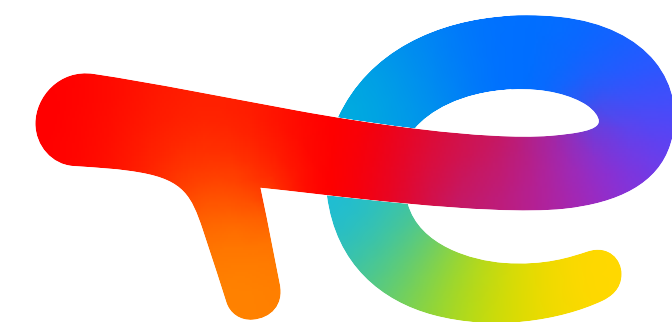




Over op schoon koelsmeermiddel?

Folia

De revolutie in metaalbewerking



TotalEnergies

Overstappen op een compleet andere metaalbewerkingsvloeistof: waarom zou u dat doen, als het bad net goed is afgesteld en de machines lekker draaien?

Bij de ontwikkeling van metaalbewerkingsvloeistof dachten we lange tijd dat we echt niet zonder konden: minerale oliën.

Maar het onmogelijke blijkt tóch mogelijk. **Met Folia is er nu een innovatief koelsmeermiddel zónder olie.** Ecobewust, vriendelijk voor huid en longen en een stuk minder gevoelig voor bacteriën.

Folia is een ultiem schoon koelsmeermiddel zonder olie. Dus geen stank en geen dampen. Voor medewerkers geen gezondheidsklachten meer zoals eczeem en andere huidirritaties. TotalEnergies heeft de revolutie in metaalbewerkingsvloeistoffen enkele jaren geleden wereldwijd ingezet met de ontwikkeling van Folia. De enige die de reguliere koelsmeermiddelen vervangt door duurzame, bio-synthetische polymeren.



Folia is formaldehyde- en boorzuurvrij, geurvrij, geeft geen dampen af door het hoge koelvermogen en veroorzaakt geen dermatitis. Als bewijs van de gezondheidsvoordelen van Folia, draagt de verpakking **geen labels voor gezondheidsrisico's én geen gevarensymbolen**.

Folia is het multifunctionele koelsmeer-middel dat geschikt is voor een hele reeks toepassingen, waaronder draaien, frezen, brootsen, tappen, boren, zagen en slijpen, in sectoren zoals de automobiel-, lucht- en ruimtevaart, bevestigingsmiddelen, farmaceutische en precisie onderdelen.



Bedrijven profiteren van een begeleid validatie-traject. Om te ervaren hoe het product werkt en een koelsmeermiddelbad vrijblijvend optimaal in te stellen. **Deze fase is geheel op kosten van TotalEnergies.**

‘Eerst zien, dan geloven’, zult u denken. Dat kunnen we ons voorstellen. Daarom stellen we voor: ‘try before you buy’. Geen kleine lettertjes, beloofd. Veel organisaties vinden overstappen een gedoe. Maar het is makkelijker en sneller dan je denkt. Zeker met de hulp en tips van onze experts die u met plezier ondersteunen bij de transitie naar 100% schonere werkprocessen.

Benieuwd naar de mogelijkheden die Folia voor uw bedrijf in petto heeft? Neem dan contact op met ons. We nemen graag de tijd voor u en stemmen de beste oplossing op uw bedrijfsvoering af.

Decrease the number of costly operations required to lubricate your gearboxes

CARTER
WT 320

LIFE
EXTENDER
WT



TOTAL
TIG 6



CARTER WT 320, experience its exceptional service life for yourself

Extend your drain interval to 10 years and improve the reliability of your gearboxes.

CARTER WT 320 has demonstrated stellar performance over a long period of time. Designed to provide the optimum balance between **low ageing** and **gear longevity**, **CARTER WT 320** takes gearbox lubrication to a new level.



LIFE EXTENDER WT, boost your oil's performance

Your wind turbine has been operating for a very long time using a gearbox oil in which performance additives are now partially depleted.

When combined with **CARTER WT 320**, **LIFE EXTENDER WT** helps prolong the service life of your lubricant whilst ensuring the smooth operation of your gearbox until the next scheduled oil change.

The WIND+ concept



ANAC WIND, customize the monitoring of your gearbox

TOTAL's extensive experience in the monitoring of in-service gearbox oils has resulted in the development of **ANAC WIND**, a **dedicated analysis for your gearbox**.

ANAC WIND incorporates specific standards to improve the diagnosis and anticipate operating faults:

- **Infrared spectrum** to assess the level of degradation and oxidation of your oil in service.
- **Large iron particles content** of over 5 microns to better identify wear level in your gearbox.



TIG 6, optimize your oil change strategy

Closely monitor your wind farms' condition with our lubrication software **TIG 6** and **better manage your maintenance schedules**.

- **Plan** your preventive, conditional and corrective maintenance operations.
- **Incorporate** your oil analyses directly and **consolidate** your diagnoses at different territorial scales.
- **Analyze** your all-in maintenance cost.
- **Monitor** your stock of lubricants and spare parts.



TOTAL, here for you!

Our application engineers are ready to assist anytime and help you put our products into use. TOTAL will also put you in contact with independent and innovative partners in both onshore and offshore wind turbine maintenance for more complex operations.

A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total cost of Ownership.

References & OEMs

TOTAL Lubricants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

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Quality and environment

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Innovation & Research

TOTAL invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.



TOTAL
COMMITTED TO BETTER ENERGY

09/2017 - TOTAL Lubrifiants SA 552 006 454 RCS Nanterre - Photos: 123RF - Illustration & design: GOLDEN Design



WIND POWER

TOTAL, a breath of fresh air for your productivity



TOTAL
LUBRICANTS

Energizing performance. Every day



TOTAL
LUBRICANTS

Energizing performance. Every day



Ensure your equipment's reliability for longer

Increase your plant's lifetime by providing it with superior and continued protection.

- Prevent wear in all circumstances and reduce bearing failure.
- Regularly analyze your gearbox oil using our dedicated **ANAC WIND** service.

Improve your long-term competitiveness

Decrease your operating expenses by extending your maintenance cycles.

- Double the time between oil changes using our long-life oils.
- Optimize your oil change strategy with our **TIG 6** maintenance software and our **LIFE EXTENDER WT** performance booster.
- Free yourself from the constraints of the Lithium market by adopting the grease technology **CERAN**®.

Maximize the output of your facilities

Make use of the slightest breeze and increase efficiency.

- Prefer "high-efficiency" lubricants that reduce friction coefficients and minimize deposit build-ups in circuits.
- Team up with an industrial company involved in university wind power research.

Your safety, our priority

Take no risks with your plant, your staff and your environment.

- Optimize your performance thanks to our products that are approved and recognized by manufacturers.
- Lubricate your equipments with less harmful formulas that contain no heavy metals or carcinogenic and reprotoxic substances.



Wind power must become more competitive

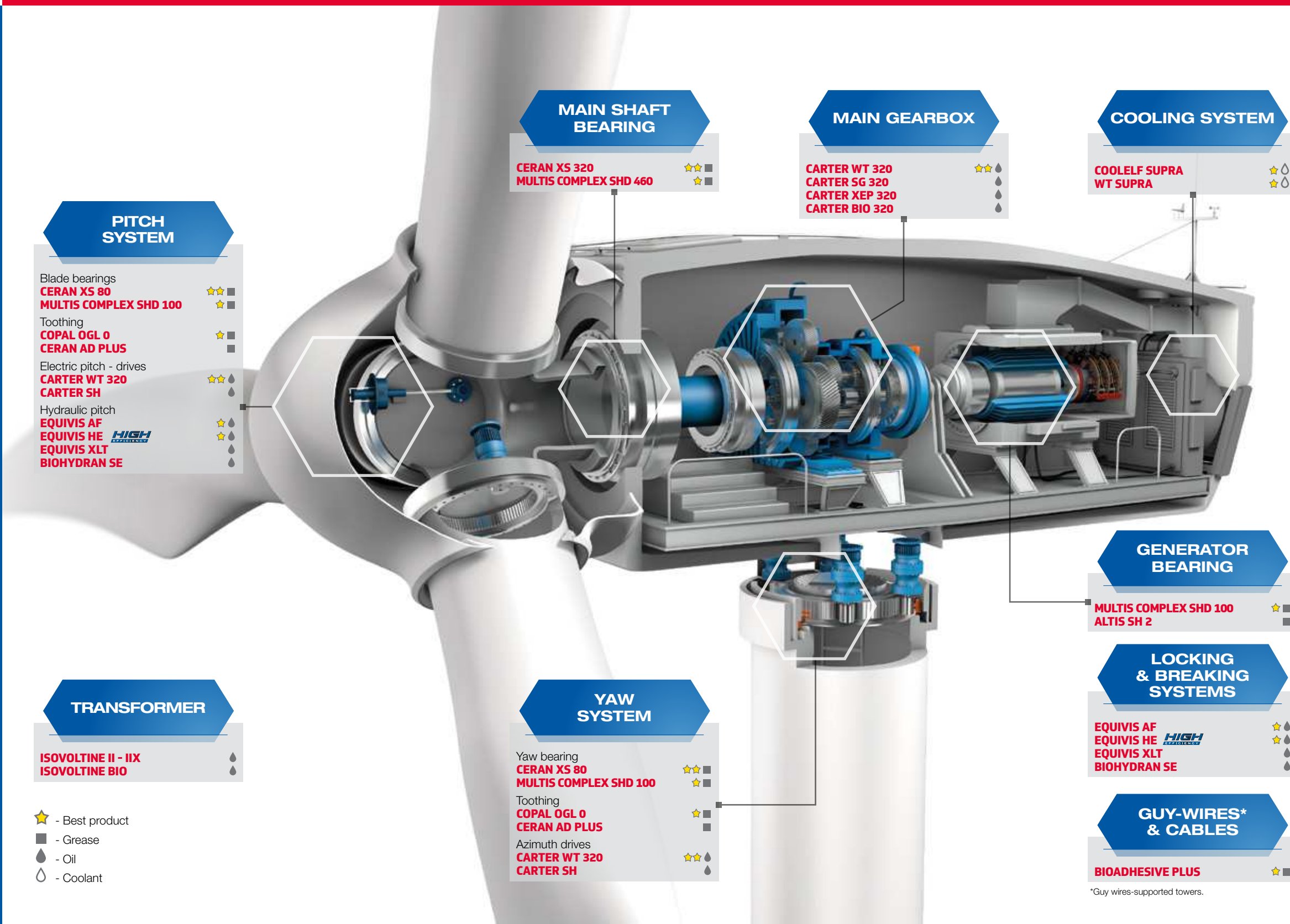
Committed to better energy, TOTAL provides **an innovative solution** for companies in the wind sector keen to **reduce their operating costs**.

Discover the WIND+ concept

TOTAL helps wind farm operators and O&M service providers to extend maintenance cycles even further by providing an **overall lubrication solution**.

Need a breath of fresh air?

Put your trust in TOTAL teams to generate **increased productivity**.

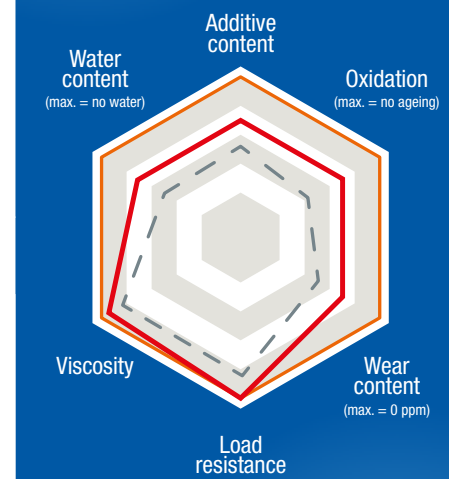


Our most advanced lubricants

CARTER WT 320



Advanced gearbox oil designed to last more than 7 years*
Fully synthetic PAO gear oil



- CARTER WT fresh oil
- CARTER WT after 7 years
- 🕒 Oil change limit

*In standard operating conditions.



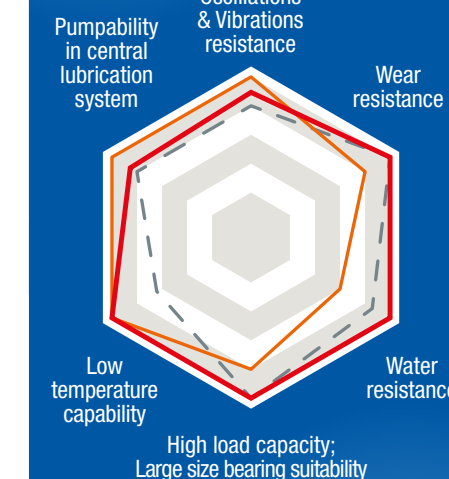
BENEFITS

- Extended drain interval
- Enhanced gear longevity
- Improved equipment reliability

CERAN XS



Next generation grease particularly suitable for offshore wind
Fully synthetic calcium sulfonate complex grease



- Synthetic PAO - Lithium Complex
- CERAN XS
- 🕒 Offshore wind standard



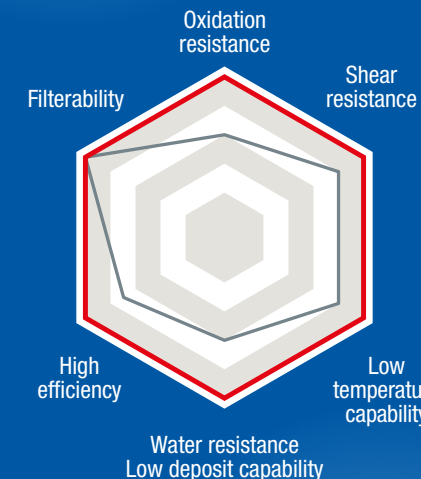
BENEFITS

- Durable protection of the bearings against wear
- Natural protection of the bearings against marine corrosion
- Extended regreasing intervals

EQUIVIS HE



Long-life hydraulic oil ensuring durable performance
High-performance mineral hydraulic oil



- EQUIVIS HE
- Standard HVLP hydraulic oil



BENEFITS

- Increased energy efficiency
- Improved pitch system accuracy
- Extended drain intervals

*Guy wires-supported towers.

Innovation

A permanent challenge for our R&D team

TOTAL R&D teams innovate everyday
to comply with the most severe constraints



Do not hesitate to tell us about your requirements,
if the solution does not yet exist...

we will create it !

Africa	+33 1 41 35 26 53	Germany	+541 957 07 60	Middle East	+971 4 294 58 00
Argentina	+54 11 44 54 50 00	Great Britain	+44 19 77 63 62 00	Netherlands	+31 70 31 80 409
Asia/Pacific	+65 6879 22 00	Greece	+30 2 10 544 05 40	Norway	+47 22 01 95 59
Austria	+43 616 46 11 0	Hungary	+36 23 50 75 23	Poland	+48 22 435 13 61
Belgium	+32 2 288 99 33	India	+9122 5640 7700	Portugal	+351 21 723 08 00
Brazil	+55 11 3848 26 00	Iran	+98 21 2205 99 61	Russia	+7 095 937 37 84
China	+8621 6352 0055	Italy	+39 02 54 068 700	Spain	+34 91 722 08 40
Czech Rep.	+420 2 2489 0511	Korea	+822 6386 5011	Sweden	+46 40 38 36 50
Denmark	+45 45 81 3701	Luxembourg	+352 480 481-1	Switzerland	+41 22 306 66 00
France	+33 1 41 35 40 00	Mexico	+52 33 3812 23 00	USA	+19 088629300



TOTAL

TOTAL LUBRIFIANTS

16 rue de la République - F 92922 Paris La Défense Cedex - FRANCE

Tél. : 33 (0)1 41 35 40 00 - www.lubricants.total.com

SPECIAL GREASES FOR CAR MANUFACTURING

Our technology
to serve your creativity



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www.bluemind.fr










TOTAL

TOMORROW'S GREASES FOR TODAY'S CARS

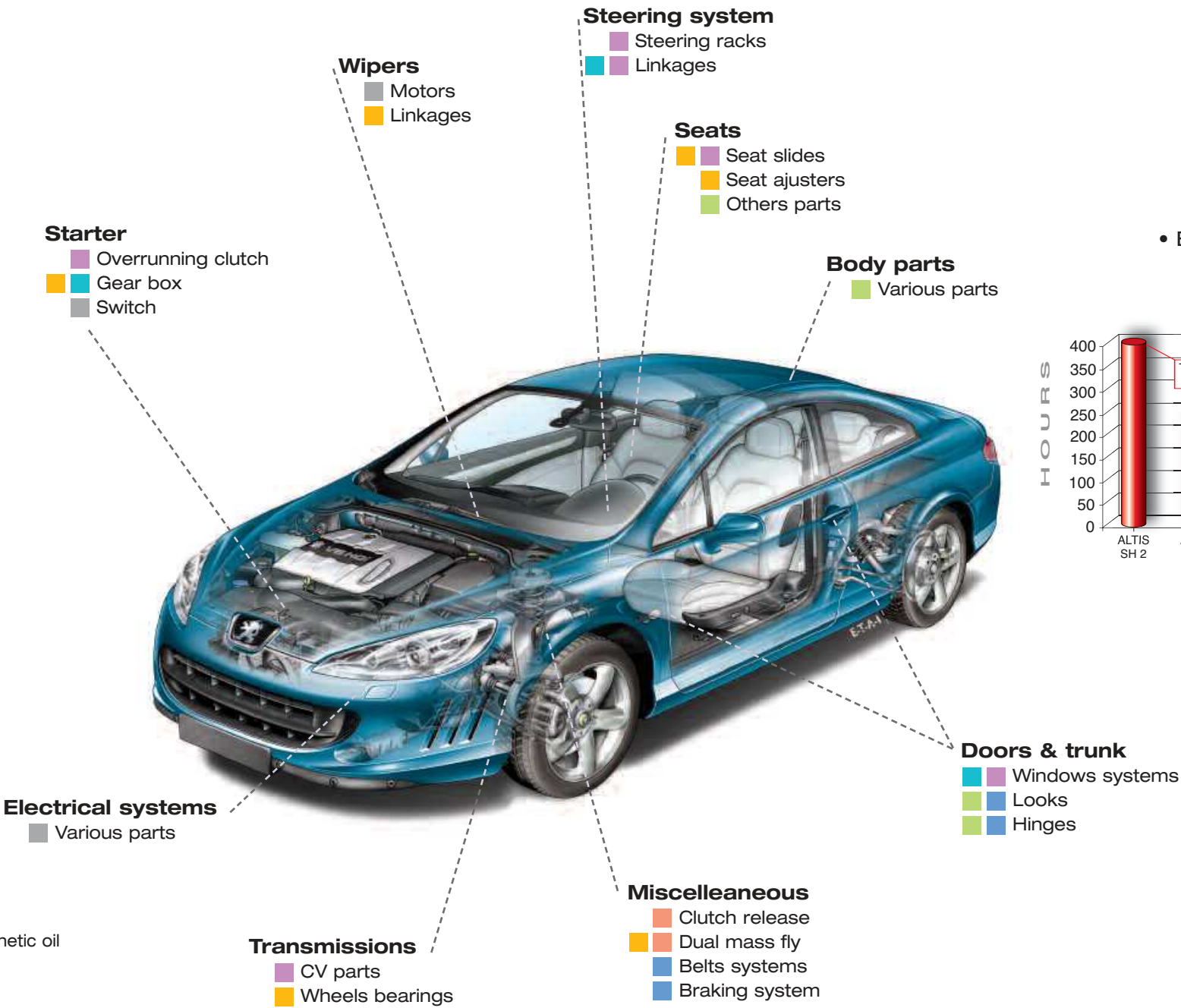
TOTAL OFFERS YOU HIS KNOW-HOW

Suitable greases

Colors table	Characteristics
	Mechanical stability
	High velocity
	Thermic stability
	Low friction coef
	Multi purpose
	Extreme pressure
	Electrical Conductivity

N Range	Product description
N3524	Lithium-Calcium soap / Semi Synthetic oil
N30943	Lithium-Calcium soap / Semi Synthetic oil
N30945	Lithium-Calcium soap / Semi Synthetic oil
N31295	Calcium soap / Biodegradable oil
N3373	Lithium Complex soap / Mineral oil
N30645	Polyurea thickener / Synthetic oil
N30730	Lithium complex soap / Synthetic oil
N31181	Silicon grease
N31315	Lithium complex soap / Synthetic oil
N3924	Lithium-Calcium soap / Semi Synthetic oil
N3942	Lithium-Calcium soap / Semi Synthetic oil
N3945	Lithium-Calcium soap / MoS2
N4128	Calcium soap / Mineral oil

Others	Product description
RLT C	Lithium soap / Mineral oil
F9702	Lithium soap / Synthetic oil
CERAN LT	Calcium Sulphonate Complex thickener / Synthetic oil
GPMT 89	Calcium soap / Mineral oil
MULTI HT2	Lithium complex soap / Mineral oil
STATERMELF EP2	Polyurea thickener / Synthetic oil
ALTIS SH2	Polyurea thickener / Synthetic oil
MARSON SY2	Lithium soap / Synthetic oil
VITRELF 31	Calcium soap / Synthetic oil
BIOMULTIS SEP2	Lithium-Calcium soap / Synthetic oil
MERKAN N4128	Calcium soap / Mineral Oil SPRAY
SEF4632	Lithium soap / Mineral oil
SPECIALE 420	Lithium soap / Mineral oil
S509	Lithium soap / MoS2
MARSON WR2	Lithium soap / High viscosity mineral oil
STATERMA SP2	Bentonite / Synthetic oil

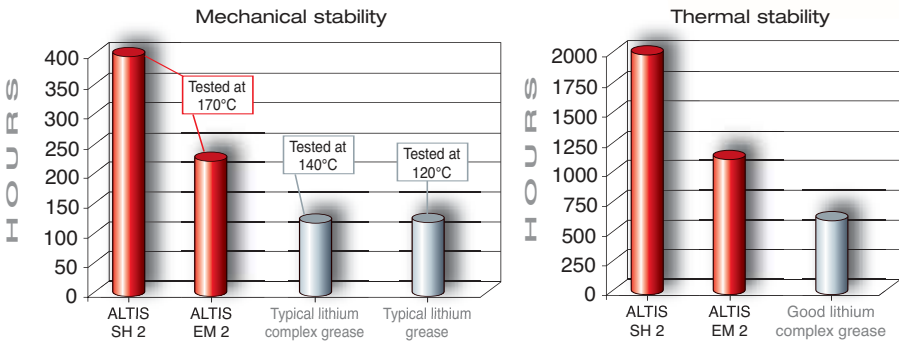


VEHICULE SYSTEM	SUITABLE GREASES
Seats	N 3524, N30943, N31295, CERAN LT
Steering system	N3924, N3942, MARSON WR2
Doors & trunk	VITRELF 31, N3924, MULTIS EP2, F9702
Wipers	SPECIALE 420, SEF 4632, STATERMA SP2
Starter	STATERMELF EP2, F9702
Electrical systems	STATERMA SP2, BIOMULTIS SEP2, MARSON SY2, F9702
Body parts	N 4128
Transmissions	N 3945, N 30730, N 30645, GPMT 89, RLT LC, S 509
Miscellaneous	MARSON SY2, ALTIS SH2, CERAN LT

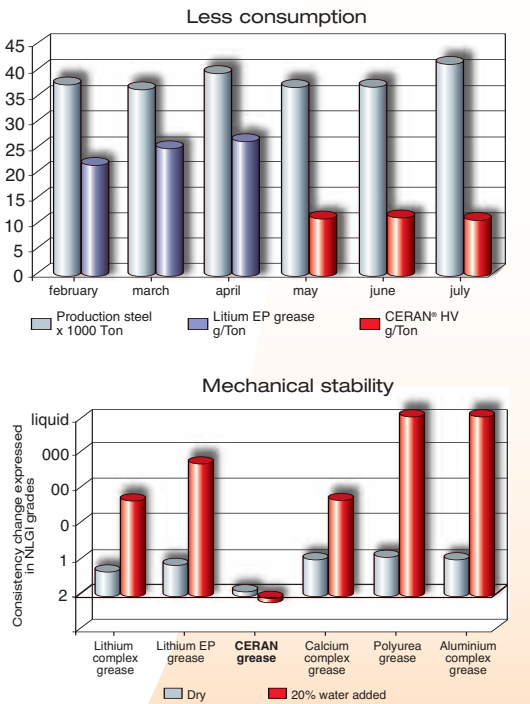
Advanced technologies

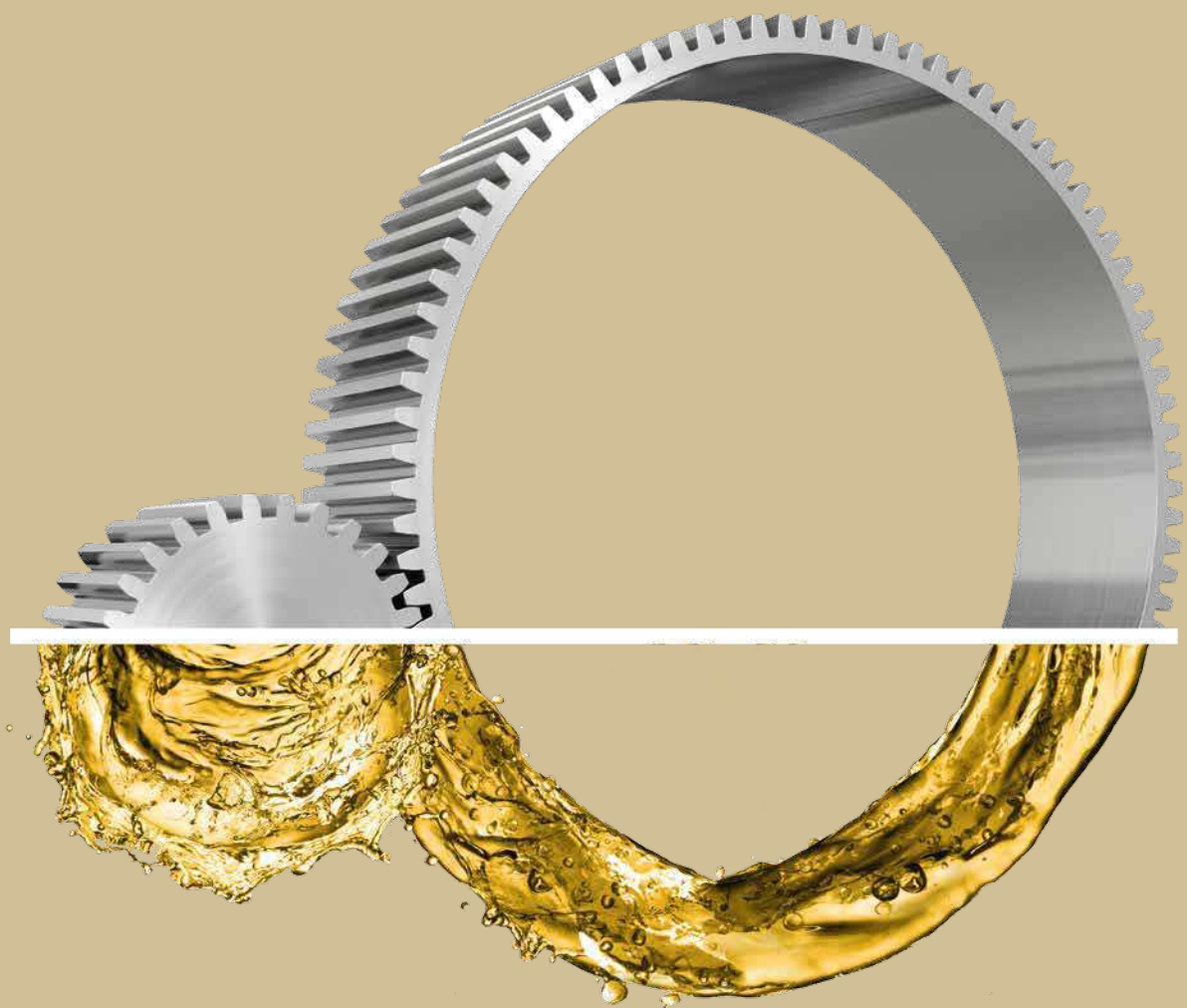
To meet your requirements
TOTAL is working on innovative solutions

- POLYUREA**
TOTAL ALTIS Range
whose main advantages are :
- Long Life time at high temperatures
 - Excellent mechanical stability and shear resistance
 - Extended operating range



- CALCIUM SULPHONATE COMPLEX**
TOTAL CERAN Range
whose main advantages are :
- Outstanding water resistance
 - Outstanding antiwear properties
 - Excellent mechanical stability and shear resistance

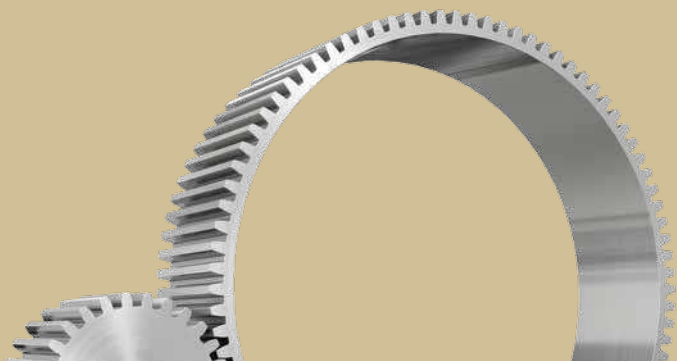




CEMENT INDUSTRY

Reliability and cost savings.

Energizing performance. Every day



CEMENT INDUSTRY

Since 1955, **Total Lubricants** has developed innovative high-performance products and solutions.

Total has achieved an expertise in the Cement industry by supplying major international companies on all continents.

We are also a key supplier for the first fill of main Industrial OEMs.

Our historical presence and strong experience enables us to help you achieve savings by implementing a Total Cost of Ownership approach.

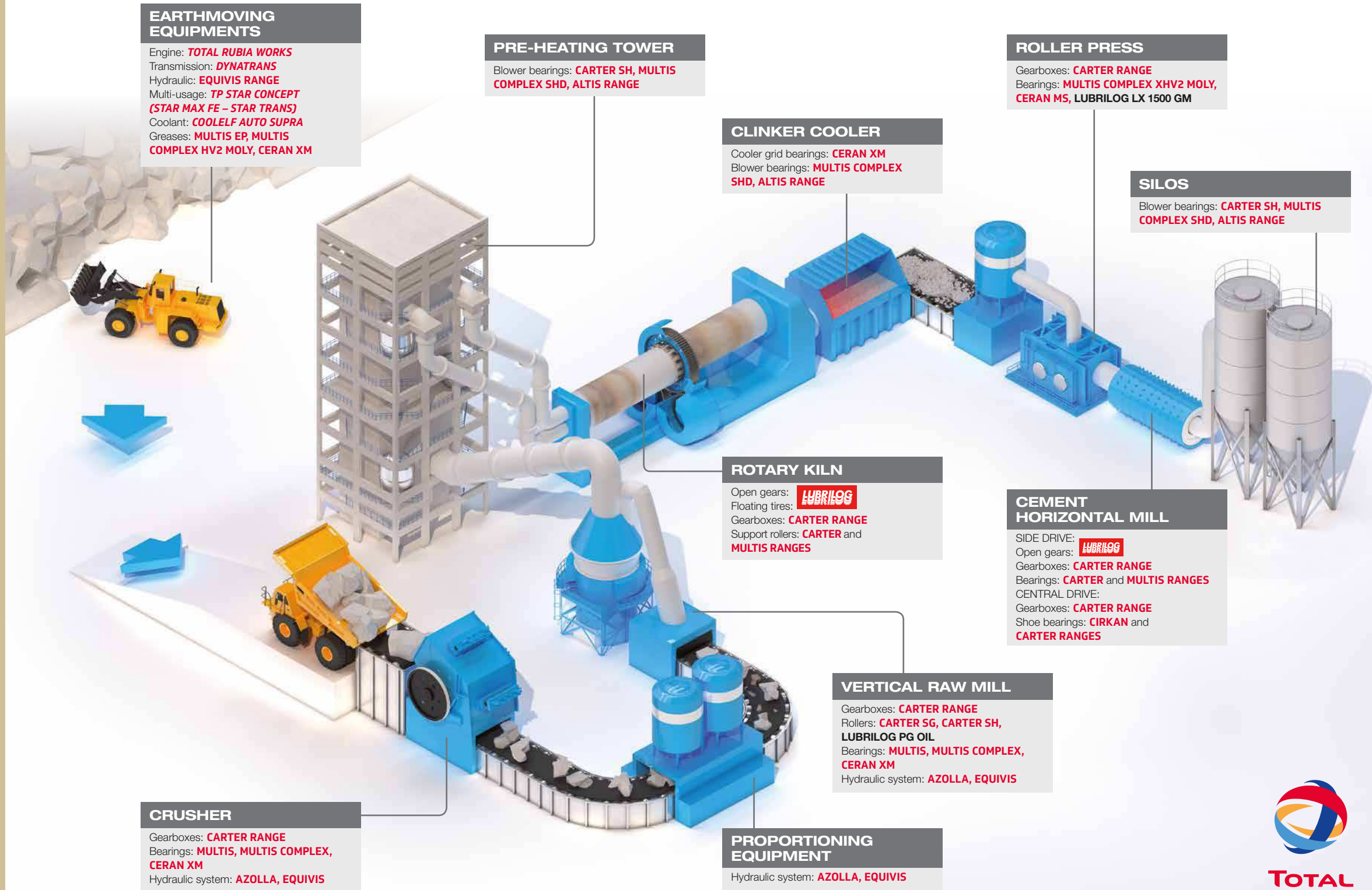
Thanks to our partnership with Lubrilog for Open Gear lubricants, **Total is the one lubricant supplier able to offer a full range of products that will satisfy the performance demands of all your applications from the quarry to the plant including the specialties.**

Your challenges

- **Continuous process:**
High cost of shutdowns.
Safety of lubrication operations.
- **High value manufacturing equipment:**
Extend the lifetime of key assets.
- **Severe operating conditions:**
Presence of shock-loads in a harsh environment.
- **Energy intensive industry:**
Research for reducing environmental impact.
Optimization of fuel and lubricant consumption, with a goal of lowering your CO₂ footprint.

Our solutions

- **Dedicated products for severe environment from the quarry to the plant, including specialties to protect your equipment:**
Lubricants with high extreme pressure and anti-wear properties.
Shear stable, shock resistant specialty products.
- **Complete range of services to monitor your equipment, extend the lifetime and optimize preventive maintenance:**
Open gear inspection and thermography.
Oil monitoring with predictive analysis and lubrication maintenance software.
Innovative lubricating solutions: automatic lubricators, programmable grease dispenser.
- **Savings through Fuel Efficiency and Energy Efficiency ranges:**
Up to 5% fuel or energy savings on mobile and industrial equipment with RUBIA WORKS FE and CARTER SG.



A COMPREHENSIVE RANGE OF GEARBOX OILS

Gears	CARTER EP/XEP: high load capability, flender approved, micropitting protection.
Heavy loaded gears	CARTER HD: outstanding resistance to shocks and vibrations.
Gears with high temperature of operation	CARTER SH: synthetic PAO based lubricant; extended lifetime.
Worm gears, ball mills gear boxes	CARTER SG: synthetic PAG based lubricant with high energy efficiency, up to 5% energy savings.
Gears with possible leakages	CARTER BIO: synthetic biodegradable ester.

HIGH PERFORMANCE GREASES

Bearings & multipurpose	MULTIS EP: extreme pressure multipurpose grease. MULTIS COMPLEX EP/HV: extended lifetime due to excellent mechanical stability. MULTIS COMPLEX XHV2 MOLY: solid additives, strong protection against shocks. CERAN XM: very high load and thermal capability with outstanding water resistance.
-------------------------	--

COMPLETE SOLUTION FOR QUARRY

Engines	TOTAL RUBIA WORKS: top tier range of engine oils especially developed for the constraints of off-road equipments, matching the most stringent OEMs requirements.
Transmissions	DYNATRANS: full range of lubricants for all transmission applications: final drive, automatic gearbox, LS, etc
Multi-usage	TP STAR CONCEPT: innovative concept for rationalization of all your quarry lubricants of all equipments. STAR MAX: for engines and hydraulics. STAR TRANS: for all transmission applications.

SPECIALTIES

Open gear lubrication	GRAFOLOG: aluminium complex greases with solid additives for optimum protection of your gear drive. GEAR FLUID: new technology of thick fluids for reduced operating costs.
Floating kiln tires	Easy to spray lubricants: GRAKOTE FLUID: synthetic fluid based. GRAFOLOG 1278S: water based dispersion of graphite.
Cleaning of open gear	LUBRICLEAN EP: fast cleaning of open gear drives in-service .



The **benefits** offered by



TIG 6, optimized maintenance software for your lubricants



TIG 6 allows you to boost your productivity through efficient maintenance planning.

Built on the expertise of our engineers, TIG 6 offers you to:



Increase efficiency and savings of your maintenance management.



Monitor lubricant parameters and analyses with a single tool.



Assert your quality and safety management through management of lubricant documentation and critical points.

THERMOGRAPHIC INFRARED IMAGING



Minimizing failures and maximizing equipment availability are major objectives for maintenance managers and their teams.



Thermographic inspection allows you to monitor your machines and equipments in service and identify abnormal thermal patterns. Hot spots may be linked to lubrication failures, leading to premature wear or equipment failures.



Preventive or corrective actions can be decided on and planned without production stops, thus reducing risk of failures, optimizing equipments availability and reducing maintenance cost.

A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total cost of Ownership.

References & OEMs

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Innovation & Research

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www.industrial.lubricants.total.com



TOTAL
LUBRICANTS

Energizing performance. Every day

Chemical Industry

Integrated solutions to enhance your productivity



TOTAL



Increase your productivity and energy efficiency

The chemical industry is a very diversified sector, serving almost all the industrial customers ranging from consumer goods to heavy industry. No matter what you produce, your machines play a vital role in your profitability. Equipment breakdowns can greatly affect production that is critical to stay competitive. TOTAL offers you the most suitable lubrication solution that enables you to operate your production facility at the optimized rate, while complying with the most stringent international standards.

Your constraints

- **Continuous process**, high costs of shutdowns
- **Explosive, corrosive, toxic and flammable atmosphere** and compounds
- **Severe operating conditions**, extreme temperatures and pressures
- Presence of **different types of process gas** (inert, active, hazardous)
- Compliance with **stringent** environmental, hygiene and safety regulations

Our solutions



- **Wide array of product and service ranges**, meeting the latest international specifications
- **NSF registered food-grade products** designed for high level of hygiene and food safety required applications such as food packaging-grade polymers
- **Worldwide presence** in more than 150 countries
- **Customer services and technical assistance** provided by dedicated professional teams

Your benefits



- **Increase equipment reliability** and operation performance
- **Reduce** operating and maintenance **costs**
- **Protect your investment** over time
- **Enhance worker safety**
- **Mitigate any potential harmful effects** to the environment and to your end-customers
- **Take advantage of over 40 year experience of TOTAL Lubrifiants** with chemical industry




Compressor Lubricants

	Type	Applications	Advantages
DACNIS SH	PAO based	Rotary and reciprocating air compressor	<ul style="list-style-type: none"> • Protection against wear and corrosion • Effective oil/air separation • Very severe conditions, high discharge temperature up to 120°C • Easy start-up at low temperature up to -40°C • Very long drain interval up to 8,000 hours
NEVASTANE SH 			<ul style="list-style-type: none"> + • Food grade
PRESLIA GT	Hydrocracked mineral	<ul style="list-style-type: none"> • Steam and gas turbines • Geared turbines • Centrifugal compressors 	<ul style="list-style-type: none"> • Excellent defoaming, air release and demulsibility properties • Outstanding thermal and anti-oxidation properties reinforced • Anti-wear and extreme-pressure performance • Extended drain interval
ORITES TN	Hydrocracked mineral	Ammonia synthesis turbo-compressor	<ul style="list-style-type: none"> • Excellent resistance to oxidation and air release properties • Chemically inert to ammonia • Maximum catalyst protection
ORITES DS 125 DACNIS LPG 150	PAG based	Hydrocarbon gas compressor	<ul style="list-style-type: none"> • High resistance to gas dilution • Outstanding lubricity performance • Excellent behaviour under high pressure
LUNARIA NH	Hydrocracked mineral	Refrigerating compressor using NH ₃ (R717)	<ul style="list-style-type: none"> • Excellent lubricity • Efficient heat exchange performance • Excellent thermal stability • Evaporating temperature > -30°C
LUNARIA SH 	PAO based		<ul style="list-style-type: none"> + • Increased oil drain interval • Food grade • Evaporating temperature > -50°C

LDPE Hypercompressor Lubricants

	Type	Applications	Advantages
ORITES DS 270 	PAG based	Hypercompressor cylinder oil for LDPE production	<ul style="list-style-type: none"> • High resistance to ethylene gas dilution • Outstanding lubricity performance • Excellent behaviour under high pressure and high temperature • Reduced oil consumption • Certified by Burckhardt Compression
ORITES DS 270X 		Hypercompressor cylinder oil for EVA production	<ul style="list-style-type: none"> + • Reinforced anti-corrosion properties • Suitable for LDPE and EVA swing production


Heat Transfer Fluids

	Type	Applications	Advantages
SERIOLA 1510	Mineral	Closed heating circuit without air contact	<ul style="list-style-type: none"> • Process temperature <+310°C • High thermal stability
NEVASTANE HTF 	Highly refined mineral		<ul style="list-style-type: none"> + • Food grade
JARYTHERM® DBT	Synthetic based		<ul style="list-style-type: none"> • Process temperature from 0°C to +350°C • Excellent stability to thermal cracking • High resistance to oxidation
SERIOLA DTH	Synthetic based	Cleaning additive of heat transfer circuits	<ul style="list-style-type: none"> • High detergency and dispersiveness, ensuring an efficient cleaning of circuit • Miscible with mineral based oils

JARYTHERM® DBT is a registered trademark of ARKEMA





Process Lubricant

	Type	Applications	Advantages
FINAVESTAN 	Medicinal white oil	Process aid for various industries such as plastics and rubber, adhesives, fertilizers...	<ul style="list-style-type: none"> • High purity, odorless, colorless, flavorless • Chemically inert • Compliant with international pharmacopeia • NSF 3-H registered



Specialty Greases

	Type	Applications	Advantages
COPAL OGL	Aluminium complex thickener with solid additives	High load and low speed open gears of turning tubes (<i>operating temperature range: -20°C to +150°C</i>)	<ul style="list-style-type: none"> • Excellent adhesiveness • Reduced friction coefficient • Enhanced anti-wear properties • Increased energy efficiency
ALTIS SH 2	Polyurea thickener	High temperature and high speed electric motor bearing (<i>operating temperature range: -40°C to +180°C</i>)	<ul style="list-style-type: none"> • Reduced vibration • Extremely long greasing interval • Enhanced energy efficiency • Available in automatic greasing device GREASYMAT
AXA GA 3 	Calcium thickener	Sealing grease for autoclaves and reactors under pressure (<i>operating temperature range: 0°C to +100°C</i>)	<ul style="list-style-type: none"> • Food grade • Excellent sealing effect
STATERMIC NR 	Special fluorine compounds based	Very high temperatures and aggressive environment (<i>operating temperature range: -25°C to +250°C</i>)	<ul style="list-style-type: none"> • Resistant to very high temperatures • Resistant to chemicals (acids, halogenated compounds, solvent, oxidant compounds) and radiations • Food grade



Our services to improve your competitiveness



Oil Analyses



ANAC INDUS, especially recommended to monitor rotating machines, can contribute to your operation cost savings. You can:

- **monitor** the mechanical condition of your machinery without shutdown or disassembly
- **reduce** the number of breakdowns and halts in production
- **extend** the service life of your lubricants and components

Maintenance and Lubrication Management IT Solution



The **TIG XP 5** software, designed by Total Lubrifiants, helps you manage your maintenance operations in a more efficient way. You can:

- **computerize and run** oil analysis data
- **monitor** overall maintenance costs
- **work** in your own language —13 languages are available

TOTAL tailor-made Services

- **Technical advice and assistance**: recommend the best suitable products and services for your needs and help solve your problems related to the lubricants
- **Lubrication audit**: optimize your operations and rationalize your lubricant inventories
- **Best practices for lube handling and storage**: reduce losses and save costs
- **On-site training**: improve the knowledge and skills of your operation staff
- **Waste oil and pack disposal solution**: help you comply with environmental regulations

A major player

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Support and partnership

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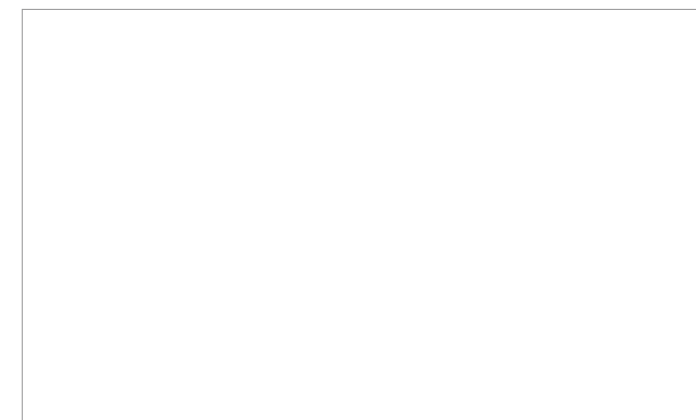
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The right choice in lubricants

TOTAL



TOTAL
COMMITTED TO BETTER ENERGY



FOOD INDUSTRY

NSF H1 lubricants

Energizing performance. Every day



TOTAL
nevastane
H1 LUBRICANTS

WITH MORE THAN 50 YEARS OF EXPERIENCE,

TOTAL NEVASTANE range has been developed to support food and beverage industry in their upmost safety concerns.

GRASP YOUR INDUSTRIAL PERFORMANCE.





Your challenges

- **Food safety:** meet HACCP best in class practices, NSF H1 products, traceability.
- **Reliability and durability of the equipments:** improve your production rates, despite an increase of physical and chemical constraints
- **Reduced oil consumption:** increase draining intervals.
- **Security of supply:** product availability worldwide

Our solutions

- **NSF H1** solution product, allergen and GMO free certified products and ISO 21469 certified plants, Halal & Kosher certifications.
- **Full range of synthetic products**, PAO, PAG, Ester, outstanding performance calcium, sulfonate complex and PTFE greases.
- **A global network** of more than 120 affiliates and local warehouses. **Technical experts** in each country to support you on HACCP approach and implementation.
- **TCO approach:** product rationalization, proven outstanding performance of our premium products.

Process Oil

PRODUCT	NATURE	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY*	SPECIFICATIONS
FINAVESTAN A 50 B				7.5	
FINAVESTAN A 80 B				15	
FINAVESTAN A 100 B				23	
FINAVESTAN A 180 B	Medicinal white oil	• Designed for the following industries: - plastics: plasticizer for PS and other polymers, for all packaging intended for food contact, - pharmaceutical: excipient.	• Very high purity. • Odourless, flavourless, colourless. • Does not contain sulphur or aromatic hydrocarbon.	29	The use of these oils depends on the national legislation in force • European Pharmacopoeia • US Pharmacopoeia USA FDA: 21 CFR 178.3620 • (a), white mineral oil
FINAVESTAN A 210 B				40	
FINAVESTAN A 360 B				70	
FINAVESTAN A 520 B				100	

Greases

PRODUCT	APPLICATIONS	SPECIFIC ADVANTAGES	THICKENER	NLGI GRADE	BO VISCOSITY*	OPERATING TEMPERATURE RANGE	SPECIFICATIONS		
							REGISTRATION	ISO 6743-9	DIN 51502
TOTAL NEVASTANE MP 1.5 (ex AXA GR 1)	<ul style="list-style-type: none">• Extreme Pressure, multipurpose grease for bearings for Food Processing Industry.• Suitable for pelleting presses.	<ul style="list-style-type: none">• Protection against corrosion in the presence of water.• Extended life of equipment.• Effective in damp environment.	Calcium Complex	1.5	150	-20 °C to +150 °C	NSF H1 ISO 21469 KOSHER HALAL	L-XBDIB 1/2	KP1/2N-20
TOTAL NEVASTANE XMF 00				00				L-XBDFAO0	K00N-20
TOTAL NEVASTANE XMF 0	<ul style="list-style-type: none">• Extreme Pressure, multipurpose and adhesive grease.• Suitable for high to medium speed bearings in Food Processing Industry.• Roller and plain bearings.• Crimping machines.	<ul style="list-style-type: none">• Good adhesiveness on metallic surfaces.• Provides excellent corrosion protection and water resistance.	Aluminium Complex	0	120	-20 °C to +150 °C	NSF H1 ISO 21469 KOSHER HALAL	L-XBDFAO	K0N-20
TOTAL NEVASTANE XMF 1				1				L-FXBDFB1	KP1N-20
TOTAL NEVASTANE XMF 2				2				L-XBDFB2	KP2N-20
TOTAL NEVASTANE 2 PLUS	<ul style="list-style-type: none">• Extreme Pressure, multipurpose and very adhesive grease.• Suitable for Food Processing application when high adhesiveness is required.• Roller and plain bearings - high and medium speed.• Crimping machines	<ul style="list-style-type: none">• Excellent adhesiveness.• Provides excellent corrosion protection and water resistance.	Aluminium Complex	2	150	-20 °C to +150 °C	NSF H1 ISO 21469 KOSHER HALAL	L-XBFBH2	OGP2R-20
TOTAL NEVASTANE HD2T	<ul style="list-style-type: none">• Extreme Pressure, multipurpose tacky grease for food processing in presence of water.• Suitable for loaded bearings, bottling and crimping machines.	<ul style="list-style-type: none">• Contains PTFE additives.• Exceptional adhesiveness on metal surfaces.• Excellence resistance to water washout.• Excellent antiwear protection.• Low friction coefficient.	Aluminium Complex	2	150	-20 °C to +150 °C	NSF H1 ISO 21469 KOSHER HALAL	L-XBDFB2	KP2N-20
TOTAL NEVASTANE XM 100	<ul style="list-style-type: none">• Food and feed industry• Lubrication under severe conditions• Pelletting presses• Recommendation	<ul style="list-style-type: none">• True multi purpose grease.• High load carrying properties.• Long service life.• Reduction of consumption.• Water resistance.• Superior anti-corrosion properties.	Calcium Sulfonate Complex	2	100	-25 °C to 180°C	NSF H1	L-XBFB 2	KP2R-25
TOTAL NEVASTANE XS 80	<ul style="list-style-type: none">• Extreme Pressure, very high performances synthetic grease for high speed and very low temperatures applications in Food Processing Industry.• Bearings at low temperatures. Oven turbines.• Sterilisers. Freezing tunnels.				80	-55 °C to +180 °C		L-XEFFB 1/2	KP1/2R-55
TOTAL NEVASTANE XS 220	<ul style="list-style-type: none">• Extreme Pressure, very high performances synthetic grease for multipurpose application in Food Processing Industry over a wide range of temperatures.• Bearings under loads and subject to shocks.	<ul style="list-style-type: none">• Synthetic.• Very low temperature.• Excellent water resistance.• Long service life.• Reduced energy consumption.	Calcium Sulfonate Complex	1.5	220	-40 °C to +180 °C	NSF H1 ISO 21469 KOSHER HALAL	L-XDDIB 1/2	KP1/2R-40
TOTAL NEVASTANE XS 320	<ul style="list-style-type: none">• Extreme Pressure, slow motion, very high performances grease for loaded application in Food Processing Industry.• Suitable for pelleting machines.• Bearings under loads and subject to shocks.				320			L-XDFFB 1/2	KP1/2R-40
STATERMIC NR	<ul style="list-style-type: none">• Special fluorine compounds-based grease for high temperatures, resistant to powerful acids, halogenated compounds, alcohols, oxidants and radiations.	<ul style="list-style-type: none">• Protection of lubricated parts even in the presence of acids, halogenated alcohols, oxidants or in the presence of radiation.• NSF H1.	Fluorine	2	375	-25 °C to +250 °C	NSF H1 ISO 21469	L-XBGDB 2	KFKP2U-25

* Typical kinematic viscosity of base oil at 40 °C in mm²/s

Oils

PRODUCT	TYPE	APPLICATIONS	SPECIFIC ADVANTAGES	ISO VG	SPECIFICATIONS
TOTAL NEVASTANE AW	White Mineral	• Hydraulic systems. • Air-line lubricators.	• Excellent anti-wear and corrosion protection. • Increase equipment service life. • Miscible with mineral fluids.	22 to 68	NSF H1 • ISO 21469 • ISO 6743-4 HM • KOSHER • HALAL
TOTAL NEVASTANE SH	Synthetic (PAO)	• Air compressor. • Vacuum pumps. • Hydraulic systems and especially those operating at low temperatures.	• Wide temperature range. • Excellent equipment protection. • Extension of oil drain intervals. • High viscosity index.	32 to 100	NSF H1 • ISO 21469 • ISO 6743-4 HV • KOSHER • HALAL
TOTAL NEVASTANE EP	Semi-synthetic	• Gears. • Plain and roller bearings. • Conveyor belts and chains.	• Superior protection against high loads. • Adapted to a wide range of applications.	100 to 1 000	NSF H1 • ISO 21469 • ISO 6743-6 CKD • KOSHER • HALAL
TOTAL NEVASTANE XSH	Synthetic (PAO)	• Gears. • Plain and roller bearings. • Conveyor belts and chains. • Slideways.	• Wide temperature range. • Low temperature start-up. • Excellent equipment protection. • Extension of oil drain intervals. • High loads.	150 to 460	NSF H1 • ISO 21469 • ISO 6743-6 CKD • KOSHER • HALAL
TOTAL NEVASTANE SY	Synthetic (PAG)	• High temperature oven chains. • Bottling equipment. • Worm gears.	• Excellent thermal stability. • High loads. • Extension of oil drain intervals. • Outstanding extreme pressure properties.	220 to 460	NSF H1 • ISO 12925-1CKD
TOTAL NEVASTANE CHAIN OIL XT	Synthetic (Esters)	• Conveyor belts. • Oven chains. • Mechanisms that operate at high temperatures.	• Very good thermal stability. • Low volatility. • High lubricating power. • Excellent adhesiveness.	220	NSF H1 • KOSHER • HALAL

Aerosols

PRODUCT	TYPE	APPLICATIONS	SPECIFIC ADVANTAGES	TEMPERATURE RANGE	SPECIFICATIONS
TOTAL NEVASTANE LUBE AEROSOL	Multipurpose translucent adhesive oil	• Small machines requiring almost daily lubrication. • Conveyors and rails. • Packaging machines. • Plain and roller bearings.	• Exceptional adhesion to metal surfaces. • Resistant to water, steam and weak acid and alkaline atmospheres. • Compatible with most of elastomers and plastics.	-20 °C to +150 °C	NSF H1
TOTAL NEVASTANE GREASE AEROSOL	Water resistant grease Alu Complex	• Hinges, springs, chains, rails and tools.	• Excellent resistance to water and steam. • Exceptional adhesion to metal surfaces. • Insensitive to detergents.	-20 °C to +150 °C	NSF H1
TOTAL NEVASTANE SILICONE SAFEGARD	Multipurpose Silicone oil	• Small machines and chains subject to extreme temperatures. • Shrink oven chains. • Conveyors and rails.	• Very wide temperature range. • Insulating, anti-rust and anti-corrosion. • Spray without propellant gas (Safeguard technology) for environmental protection.	-40 °C to +200 °C	NSF H1 • KOSHER

Specific Products

PRODUCT	TYPE	APPLICATIONS	SPECIFIC ADVANTAGES	ISO VG	SPECIFICATIONS
TOTAL NEVASTANE FLUSH OIL	Light viscosity fluid for cleaning and flushing	• Cleaning or flushing of hydraulic systems, gear reducers, chains and other moving components.	• Elimination of deposits and impurities. • Excellent solvent power. • Ideal for changing from standard lubricant to NSF H1 lubricant (except PAG and MPG).	9.5	NSF H1 • KOSHER • HALAL
TOTAL NEVASTANE SDO	Sugar dissolving oil	• Dissolves sugar accumulated on equipment in production and packaging areas. • Application in pure or diluted form.	• Excellent for dissolving accumulated sugar on machine parts. • Dirt removing power. • Reduction of maintenance costs and shutdowns.		NSF H1
TOTAL NEVASTANE ANTIFREEZE	MPG based antifreeze	• Cooling circuits, including drinks, ice creams and frozen food processing.	• Specific protection of alloys and metal equipment against corrosion.		NSF HT1
TOTAL NEVASTANE HTF	White Mineral	• Closed circuits. • Numerous manufacturing processes in Agrifood Industry: water baths, autoclaves, reactors, ovens, presses and moulds.	• Process temperature < +310 °C (+330 °C in the film).	32	NSF H1 • ISO 21469 • ISO 6743-12 L -QC KOSHER • HALAL

Solvents & Detergents

PRODUCT	NATURE	APPLICATIONS	SPECIFIC ADVANTAGES	DENSITY**	SPECIFICATIONS
FINADET FPI	Special agrifood detergent	• Degreaser and cleaner for the Agrifood Industries: metal or plastic parts, vehicles designed for transportation of foodstuffs.	• Meets the requirements of the Food Industries.	1086	NSF A1 Menthol perfume
FINASOL FPI	Synthesis hydrocarbon Benzene-free Aromatic-free	• Degreaser and cleaner for the Agrifood Industries: machine parts, chassis machine tools, bearings, pinions, filters, chains.	• Odorless. • Compatible with metals, glass, ceramics, composite materials, most thermoplastics and thermosets insensitive to organic solvents.	742	NSF K1

Refrigerating Compressor Oil

PRODUCT	NATURE	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY*	SPECIFICATIONS
LUNARIA SH	Synthetic PAO	• Refrigerating compressors using NH3/ammonia.	• Evaporating temperature > -50 °C.	46 68	ISO 6743-3 DRA • APV • Gram • Bock • J & E Hall • Grasso • Howden • Sabroe • York

Vacuum Pumps

PRODUCT	NATURE	APPLICATIONS	SPECIFIC ADVANTAGES	VISCOSITY*	SPECIFICATIONS
PV SH 100	Semi-synthetic	• Alternating and rotary vacuum pump. • Extraction of acid or corrosive gases.	• Suitable for incidental food contact.	100	ISO 6743-3 DVD NSF H1

Aluminium Packaging Industry

PRODUCT	METALS	APPLICATIONS	SPECIFIC ADVANTAGES	HSE	VISCOSITY*	SPECIFICATIONS
MARTOL FMO CF	Aluminium	• Food packaging.	• Formulated with NSF 3H ester, suitable for direct food contact.		15 75 235	3H
MARTOL EV 10 CF	Ferrous and non-ferrous	• Light cutting and die stamping operations. • For thicknesses from 0.2 to 0.5 mm.	• Odourless. • Excellent film coverage.	Chlorine free Sulphur free	2.2 at 20 °C	ISO-L-MHB INS H1
AZOLLA AL		• Hydraulic systems of aluminium, stainless steel or copper rolling mills.	• Synthetic oil avoids staining rolled metal in the event of a leak in the hydraulic circuit. • Reduction in the formation of deposits. • Anticorrosion protection even in the presence of water.		15 to 68	NSF H1
LUBRILAM CLEANER H1	Aluminium	• Air purification oil.	• Resistance to oxidation. • Solvent recovery power. • Suitable for incidental food contact requirements.		29.8 at 40 °C	AIRPURE systems Meets the requirements of the FDA CFR 178.3570

* Typical kinematic viscosity of base oil at 40 °C in mm²/s

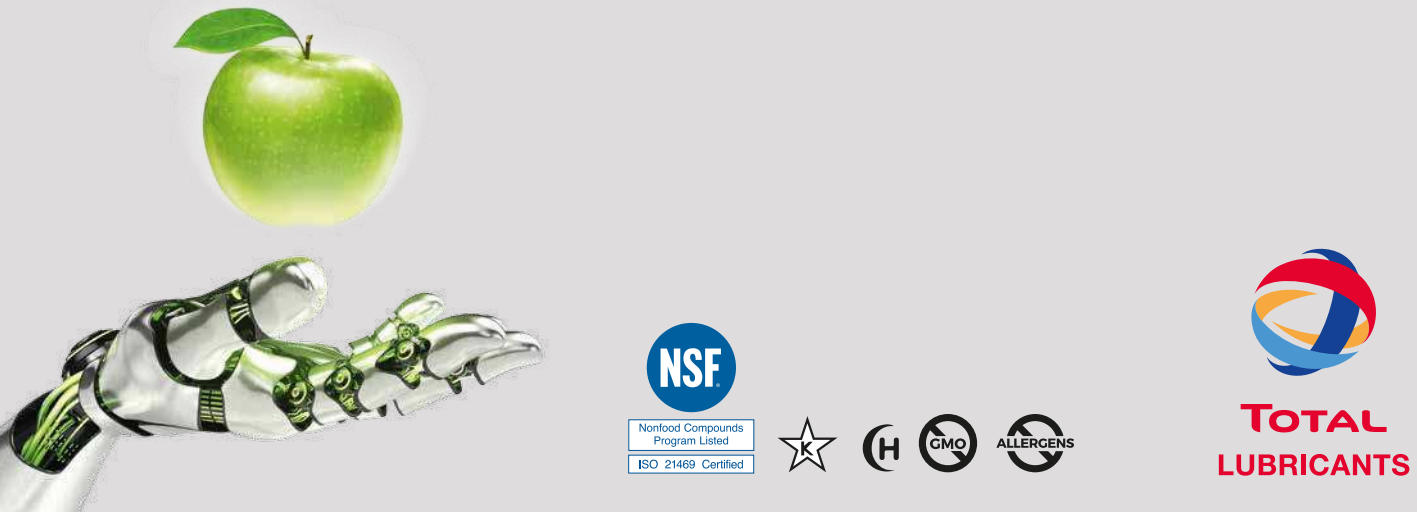
** Density at 25 °C in kg/m³

Industry Leading Standards for Quality, Hygiene and Traceability

To evidence our commitment to applying the upmost stringent guidelines all our plants producing the TOTAL NEVASTANE range are ISO 21469 as are the TOTAL NEVASTANE products produced in these facilities.

ISO 21469 means:

- Formulation review.
- Product testing.
- Traceability and verifications.
- Annual independent audit of our facility and products.
- Investigation of complaints.
- Corrective action and enforcement.
- Risk Assessment.
- Continuous Improvement.



TOTAL
LUBRICANTS

The **benefits** offered by



TOTAL ANAC INDUS

provides you a full range of lube oil analysis, to allow you to anticipate and diagnose anomalies in the equipment.



THANKS TO TOTAL ANAC INDUS, YOU:



Reduce your operating costs.



Anticipate and plan maintenance operations to perform them at the best time.



Optimize drain intervals and **extend the lifetime** of your equipment.



Improve the reliability and performance of your equipment.



OUR EXPERT SUPPORTS

Site audit:

- Identification of Critical point of Lubrication (HACCP approach)
- Product recommendation, optimization, handling and storage rules
- Stock rationalization customized on site trainings in order to fit with maintenance team expectations.

TOTAL TIG 6 optimized maintenance software for your lubricants

Built on the expertise of our engineers, TIG 6 offers you to:



Increase efficiency and savings of your maintenance management.



Monitor lubricant parameters and analyses with a single tool.



Assert your quality and safety management through management of lubricant documentation and critical points.

TIG 6 will help you to deploy and monitor your HACCP* policy on a day to day basis.

THE 7 PRINCIPLES OF HACCP

THE SOLUTIONS OFFERED BY TIG 6

Risk analysis.

- Maintenance plan readings on site.
- Data entry in TIG.

Critical Point Control (CCP).

- Identification of the critical points.

Definition of the critical thresholds.

- Allocation of the NSF H1 lubricants.
- Definition of the control analyses.

Establishment of a surveillance system.

- Management of preventive and condition-based maintenance.

Corrective measures.

- Management of the corrective maintenance.

Verification.

- Scorecards for maintenance and critical points.

Documentation (HACCP plan).

- Document management.
- Maintenance history.

*Hazard Analysis Critical Control Point.

A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total cost of Ownership.

References & OEMs

Total Lubricants cooperates with equipment manufacturers to create high-technology products for optimal performance and protection of your machinery.

5 good reasons for choosing TOTAL

Innovation & Research

Total invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.

Quality and environment

Total Lubricants ISO 9001 certification is the guarantee of a long term commitment to quality. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.

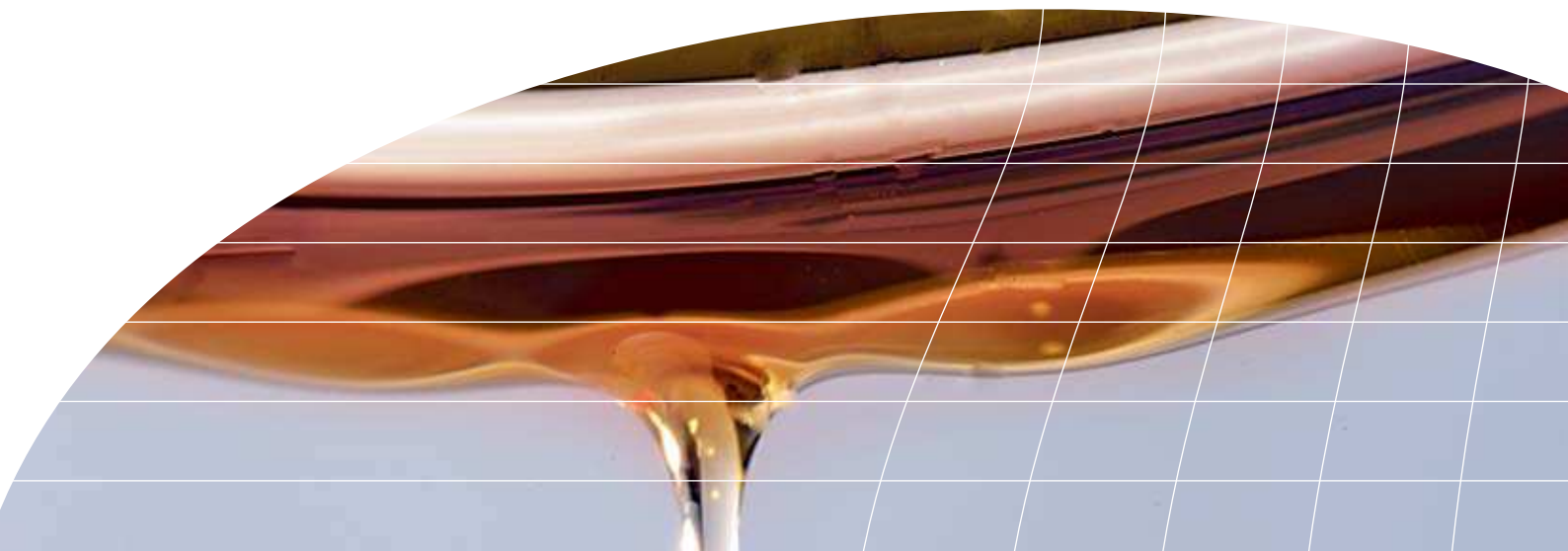
Safety Data Sheets are available at www.quickfds.com
www.industrial.lubricants.total.com

Energizing performance. Every day



Aviation

Lubricants and Services



TOTAL



Discover our complete range of aviation lubricants and services

PISTON ENGINES LUBRICANTS

	Products	Specifications*	Applications
Non dispersive	Aero 80	<ul style="list-style-type: none"> FRANCE: AIR 3560/D grade SAE 40 US, UK: SAE J 1966 SAE grade 40 	<ul style="list-style-type: none"> Pure mineral oils for the lubrication of piston engines operating under average conditions. Lubrication of vintage aeroplanes (WWI and WWII warplanes).
	Aero 100	<ul style="list-style-type: none"> FRANCE: AIR 3560/D grade SAE 50 US, UK: SAE J 1966 SAE grade 50 	
	Aero 120	<ul style="list-style-type: none"> US: SAE J 1966 grade SAE 60 	
Dispersive	Aero D 80	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 40 US, UK: SAE J 1899 SAE grade 40 	<ul style="list-style-type: none"> Ashless dispersive monograde mineral oils for the lubrication of piston engines operating under severe and very severe conditions.
	Aero D 100	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 50 US, UK: SAE J 1899 SAE grade 50 	
	Aero D 120	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 60 US, UK: SAE J 1899 SAE grade 60 	<ul style="list-style-type: none"> New generation ashless dispersive monograde mineral lubricants, specially developed to improve anti-wear and corrosion protection of your highly valued piston aviation engine. These oils already contain an anti-wear additive similar to TEXTRON Lycoming LW 16702.
	Aero XPD 80	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 40 US, UK: SAE J 1899 SAE grade 40 FAA approved AD 80-04-03R2 paragraph b.1. AVCO LYCOMING (310F) approved. 	
	Aero XPD 100	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 50 US, UK: SAE J 1899 SAE grade 50 FAA approved AD 80-04-03R2 paragraph b.1. AVCO LYCOMING (310F) approved. 	
	Aero XPD 120	<ul style="list-style-type: none"> FRANCE: AIR 3570 grade SAE 60 US, UK: SAE J 1899 SAE grade 60 FAA approved AD 80-04-03R2 paragraph b.1. AVCO LYCOMING (301F) approved. 	
	Aero DM 15W-50	<ul style="list-style-type: none"> French Air Force approved (n°30330 STPA/MA) SAE J 1899 FAA approved AD 80-04-03R2 paragraph b.1. AVCO LYCOMING (310F) and TELEDYNE CONTINENTAL (MHS-24) approved. 	<ul style="list-style-type: none"> Ashless dispersive multigrade oils for the lubrication of piston engines operating under severe and very severe conditions. Can be used throughout the year in any climate. These oils already contain an anti-wear additive similar to TEXTRON Lycoming LW 16702.
	Aero DM 20W-60	<ul style="list-style-type: none"> SAE J 1899 Meets the requirements of FAA AD 80-04-03R2 paragraph b.1. from FAA Conform to 301F AVCO LYCOMING specification. 	

* performs to

TURBINE ENGINES LUBRICANTS

Products	Specifications*	Applications
Aeroturbine 331	<ul style="list-style-type: none"> FRANCE: AIR 3515/B Iss.3 UK: DEF-STAN 91-99 Iss. 2 Joint Service Designation: OM-11 NATO code: O-135 Turbomeca approved 	<ul style="list-style-type: none"> Mineral oil for lubrication of aviation turbine engines. Bearings and gearboxes.
Aeroturbine 921	<ul style="list-style-type: none"> FRANCE: AIR 3512/A Iss. 2 UK: DEF-STAN 91-97 Iss. 1 Joint Service Designation: OM-71 NATO code: O-138 Turbomeca approved 	
Turbonycoil 3516	<ul style="list-style-type: none"> FRANCE: AIR 3516/A Iss. 2 US: MIL-PRF-6081 D Grade 1010 NATO code: O-133 	<ul style="list-style-type: none"> Mineral based turbine engine oil.
Turbonycoil 600	<ul style="list-style-type: none"> FRANCE: DCSEA 299/A US: MIL-PRF-23699 F-STD UK: DEF STAN 91-101 Iss. 3 Joint Service Designation: OX-27 / OX-28 NATO code: O-156 SAE-AS 5780-SPC 	<ul style="list-style-type: none"> Synthetic lubrication oil for lubrication of gas turbine (type 5 cSt).
Turbonycoil 699	<ul style="list-style-type: none"> UK: DEF STAN 91-100 Iss. 3 Amd.1 Joint Service Designation: OX-26 NATO code: O-160 	<ul style="list-style-type: none"> Synthetic helicopter gearbox, transmission and turbine engine oil.
Turbonycoil 160	<ul style="list-style-type: none"> US: MIL-PRF-7808 L Grade 3 UK: Joint Service Designation: OX-9 NATO Code: O-148 	<ul style="list-style-type: none"> Synthetic turbine engine oil (type 3 cSt).

* performs to

GEAR OILS

Products	Specifications*	Applications
Aerogear 823	<ul style="list-style-type: none"> FRANCE: DCSEA 255/A US: MIL-PRF-6086E (medium grade) UK: DEF STAN 91-112/1 Joint Service Designation: OEP-70 NATO code: O-155 EUROCOPTER approved 	<ul style="list-style-type: none"> Mineral oil for highly stressed gearboxes such as helicopter gearboxes.
Aerogear 1032	<ul style="list-style-type: none"> AIR 3525/B approved US: MIL-PRF-6086E (medium grade) UK: DTD 581 C grade OEP-70 Joint Service Designation: OEP-70 NATO code: O-155 EUROCOPTER ECS 2199 approved 	<ul style="list-style-type: none"> Mineral oil for highly stressed gearboxes such as the latest generation of Eurocopter helicopter gearboxes.

* performs to

ENGINES PROTECTION LUBRICANT

Products	Specifications*	Applications
Aeroprotective 219	<ul style="list-style-type: none"> FRANCE: AIR 1503/B type A UK: DEF STAN 91-40/2 Joint Service Designation: PX-27 NATO code: C-615 	<ul style="list-style-type: none"> Internal protective mineral oil for piston engines.

* performs to

HYDRAULIC FLUIDS

Products	Specifications*	Applications
Aerohydraulic 520	<ul style="list-style-type: none"> FRANCE: DCSEA 415/A (H-520) US: MIL-PRF-5606H UK: DEF STAN 91-48/1, standard grade Joint Service Designation: OM-18 NATO Code: H-520 	<ul style="list-style-type: none"> Mineral hydraulic oil for systems operating under: <ul style="list-style-type: none"> high pressure, low and extremely low temperatures.
Hydraunycoil FH 51	<ul style="list-style-type: none"> FRANCE: DCSEA 415/A (H-515) US: MIL-PRF-5606H Amd.3 UK: DEF STAN 91-48 Iss. 2 Joint Service Designation: OM-15 NATO Code: H-515 	<ul style="list-style-type: none"> Microfiltered mineral hydraulic fluid operating under: <ul style="list-style-type: none"> high pressure, low and extremely low temperatures.
Hydraunycoil FH 42	<ul style="list-style-type: none"> US: MIL-PRF-87257B NATO Code: H-538 	<ul style="list-style-type: none"> Synthetic fire resistant low temperature hydraulic fluid.
Hydraunycoil FH 2	<ul style="list-style-type: none"> FRANCE: DCSEA 437/B US: MIL-PRF-83282 D Amd. 1 Joint Service Designation: OX-19 NATO Code: H-537 	<ul style="list-style-type: none"> Synthetic microfiltered fire resistant hydraulic fluid.
Hydraunycoil FH 6	<ul style="list-style-type: none"> FRANCE: DCSEA 535/A US: MIL-PRF-6083F UK: DEF STAN 80-142 Iss 2 Amd. 1 Joint Service Désignation: PX-26 NATO Code: C-635 	<ul style="list-style-type: none"> Mineral based hydraulic fluid preservative grade.
Hydraunycoil FH 5 AW	<ul style="list-style-type: none"> BOEING BMS 3-32 A type II approved 	<ul style="list-style-type: none"> Mineral based hydraulic fluid for aircraft landing gear systems.
Hydraunycoil FH 6 AW	<ul style="list-style-type: none"> BOEING BMS 3-32 A type I approved 	<ul style="list-style-type: none"> Mineral based hydraulic fluid for shock struts on the landing gear systems.

* performs to

GREASES

Products	Specifications*	Applications
Aerogrease 15	<ul style="list-style-type: none"> FRANCE: DCSEA 382/A US: MIL-G-7711 A Amd. 1 (obsolete) UK: DEF STAN 91-12 Joint Service Designation: XG-271 NATO code: G-382 	<ul style="list-style-type: none"> High temperature grease composed of a lithium complex soap in a mineral oil. Low temperature grease composed of a lithium soap in a mineral oil, when a grease G-359 is not possible.
Nycogrease GN 22	<ul style="list-style-type: none"> FRANCE: DCSEA 395/B US: MIL-PRF-81322G UK: DEF STAN 91-52 Iss. 1 Amd. 2 Joint Service Designation: XG-293 NATO code: G-395 	<ul style="list-style-type: none"> General purpose wide temperature range synthetic based grease.
Nycogrease GN 27	<ul style="list-style-type: none"> US: MIL-G-81827A 	<ul style="list-style-type: none"> High load capacity wide temperature range synthetic based grease.
Nycogrease GN 10	<ul style="list-style-type: none"> FRANCE: DCSEA 354/A US: MIL-PRF-23827C Amd. 2 UK: DEF STAN 91-53 Iss.3 Amd. 2 Joint Service Designation: XG-287 NATO code: G-354 	<ul style="list-style-type: none"> Advanced synthetic multi purpose aircraft grease.
Nycogrease GN HC	<ul style="list-style-type: none"> FRANCE: DCSEA 363/B US: AMS-G-6032D UK: DEF STAN 91-6 Iss. 4 Joint Service Designation: XG-235 NATO code: G-363 	<ul style="list-style-type: none"> Fuel, solvent and oil resistant synthetic grease designed to lubricate and seal plug valves.
Nycogrease GN GA 47	<ul style="list-style-type: none"> FRANCE: AIR 4247 A Iss.2 US: AMS-2518 A DEF STAN: 80-80 Iss. 2 Joint Service Designation ZX-13 NATO Code: S-720 	<ul style="list-style-type: none"> Graphited anti-seize grease.
Nycogrease GN 17	<ul style="list-style-type: none"> FRANCE: DCSEA 353/A US: MIL-G-21164 D UK: DEF STAN 91-57 Iss. 2 Amd. 1 Joint Service Designation: XG-276 NATO Code: G-353 	<ul style="list-style-type: none"> Synthetic grease with solid lubricant and lithium soap.

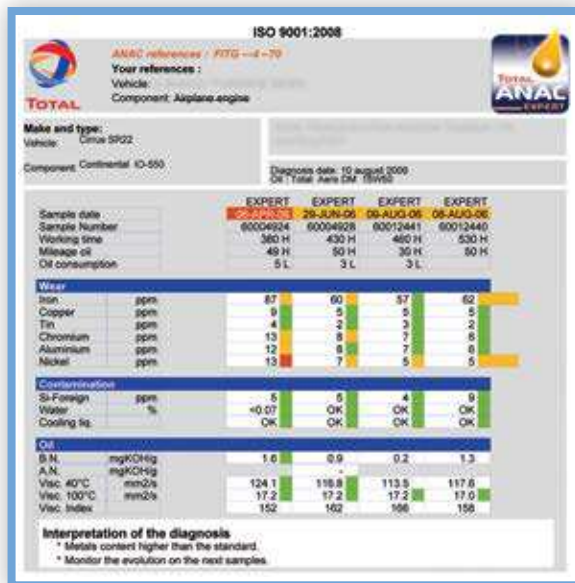
* performs to

Services

All for a safe flight

Oil analyses

ANAC EXPERT is our in depth, personalized diagnosis system for aircraft piston engines. From a sample of oil, you can closely **monitor the natural wear of your engine** and identify the origin of abnormal wear, in order to define actions of preventive maintenance. The diagnosis report is available within 48 hours after the receipt of the oil sample in the lab. You benefit from a personalized and safe access to your oil analyses results on the Internet. Through its extensive expertise, TOTAL has built up a large database with reference data of current aircraft piston engines. You can have **confidence in the diagnosis and comments** established by our ANAC technicians. More information : www.anac-diagnosis.com



Aviation fuels

TOTAL is a **major supplier of aviation fuel**: **JET A-1** for turbine engines, **AVGAS 100LL** for piston engines and **AVGAS UL91** for ultra light aircraft with Rotax engines. It has earned **the trust of its customers all over the world**: airlines, flying clubs, professional and amateur stunt pilots, regardless of the branch of aeronautics involved. Serving 200 international Airports, from Johannesburg to Copenhagen, from Tokyo to Papeete, and more than 500 regional airfields in Europe, somewhere in the world TOTAL aviation crew members refuel an aircraft with **JET A-1**, **AVGAS 100LL** or **AVGAS UL91**, every 30 seconds on average.



5 good reasons for choosing TOTAL

A major player

Total Lubrifiants is a subsidiary of Total Group. The Group is the world's fifth largest publicly-traded integrated international oil and gas company* and employs more than 96,000 people on five continents. Total Lubrifiants manufactures and sells its lubricants in more than 150 countries.

Innovation

Thanks to a major investment in R&D and close cooperation with equipment manufacturers, Total Lubrifiants creates high-technology products with substantial added value, for optimal performance and protection of your machinery.

Quality and environment

Total Lubrifiants ISO 9001 certification is the guarantee of a long term commitment to quality. From the initial design stage, our R&D teams seek to develop products with characteristics that minimise toxicity risks and that may be either recycled or disposed of in a manner that creates the least environmental impact.

Local support and responsive logistics

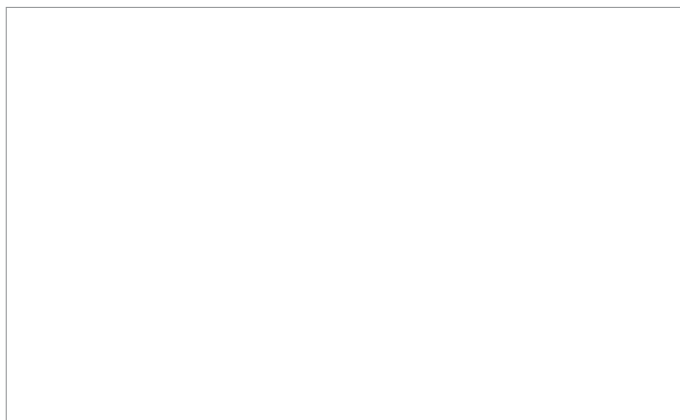
Thanks to our local commercial and technical presence, we can respond to your specific needs. Our integrated organization, including our own production plants and logistics, ensures that we can supply products within the tightest deadlines.

Partnership

We are at your side bringing our expertise to optimize the productivity of your machinery and reduce your maintenance costs. The large variety of our product ranges allows you to cover all your needs for maintenance, specialty lubricants or coolants.

* Based on market capitalization (in dollars) as of December 31, 2012

Material Safety Data Sheets available at www.quickfds.com



<http://www.lubricants.total.com/pro/industry.html>
www.lubricants.total.com



You know where to turn

TOTAL

The **benefits** offered by **TOTAL**

TOTAL ANAC INDUS

provides you a full range of lube oil analysis, to allow you to anticipate and diagnose anomalies in the equipment. This solution is both preventive and corrective.



Thanks to TOTAL ANAC INDUS, you:

- € **Reduce** your operating **costs**.
- 7 **Anticipate and plan** maintenance operations to perform them at the **best time**.
- 🕒 **Optimize** drain intervals and **extend the lifetime** of your equipment.
- ⚙️ **Improve the reliability and performance** of your equipment.

TIG6, optimized maintenance software for your lubricants



TIG6 allows you to boost your productivity through efficient maintenance planning.

Built on the expertise of our engineers, TIG6 offers you to:

- 🕒 **Increase efficiency** and savings of your maintenance management.
- 📊 **Monitor lubricant parameters and analyses** with a single tool.
- 📄 **Assert your quality and safety management** through management of lubricant documentation and critical points.

Plan your orders with our Vendor Managed Inventory solution.

VMI enables you to:

- **Save costs** of stock shortage and over-stocks.
- **Optimize** and simplify your lubricant **stock management**.
- **Control** your lubricant **consumption**.

A major player

With our production, supply chain and commercial presence in more than 150 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total cost of Ownership.

References & OEMs

TOTAL Lubricants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

5 good reasons for choosing TOTAL

Quality and environment

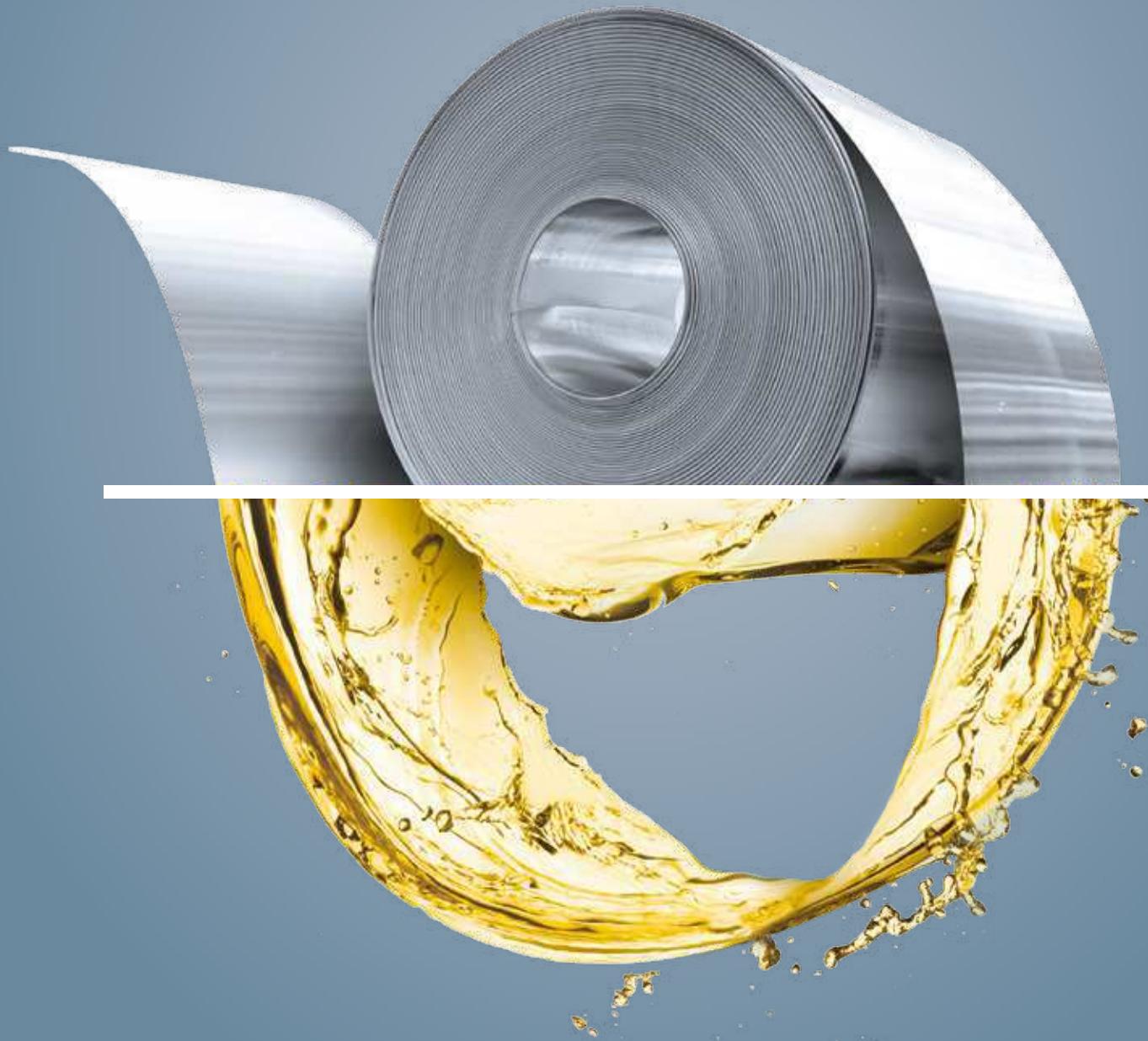
TOTAL Lubricants ISO 9001 certification is the guarantee of a long term commitment to quality. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.

Innovation & Research

TOTAL invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.



TOTAL
COMMITTED TO BETTER ENERGY



10/2016 - TOTAL Lubricants SA 552 006 454 RCS Nanterre - Photos: 123RF - Illustration: Analogue Design - GOLDEN Design

Safety Data Sheets are available at www.quickfds.com
www.industrial.lubricants.total.com

Energizing performance. Every day



TOTAL
LUBRICANTS

ALUMINUM ROLLING INDUSTRY

Reliability and productivity with TOTAL lubricants

Energizing performance. Every day



TOTAL
LUBRICANTS



ALUMINUM ROLLING INDUSTRY

Aluminum is one of the key engineering materials of our time.

As an involved company in aluminum rolling, the ongoing challenge for TOTAL is to satisfy the growing demand in aluminum, through a complete dedicated lubricant range.

Our main objective is to bring you:

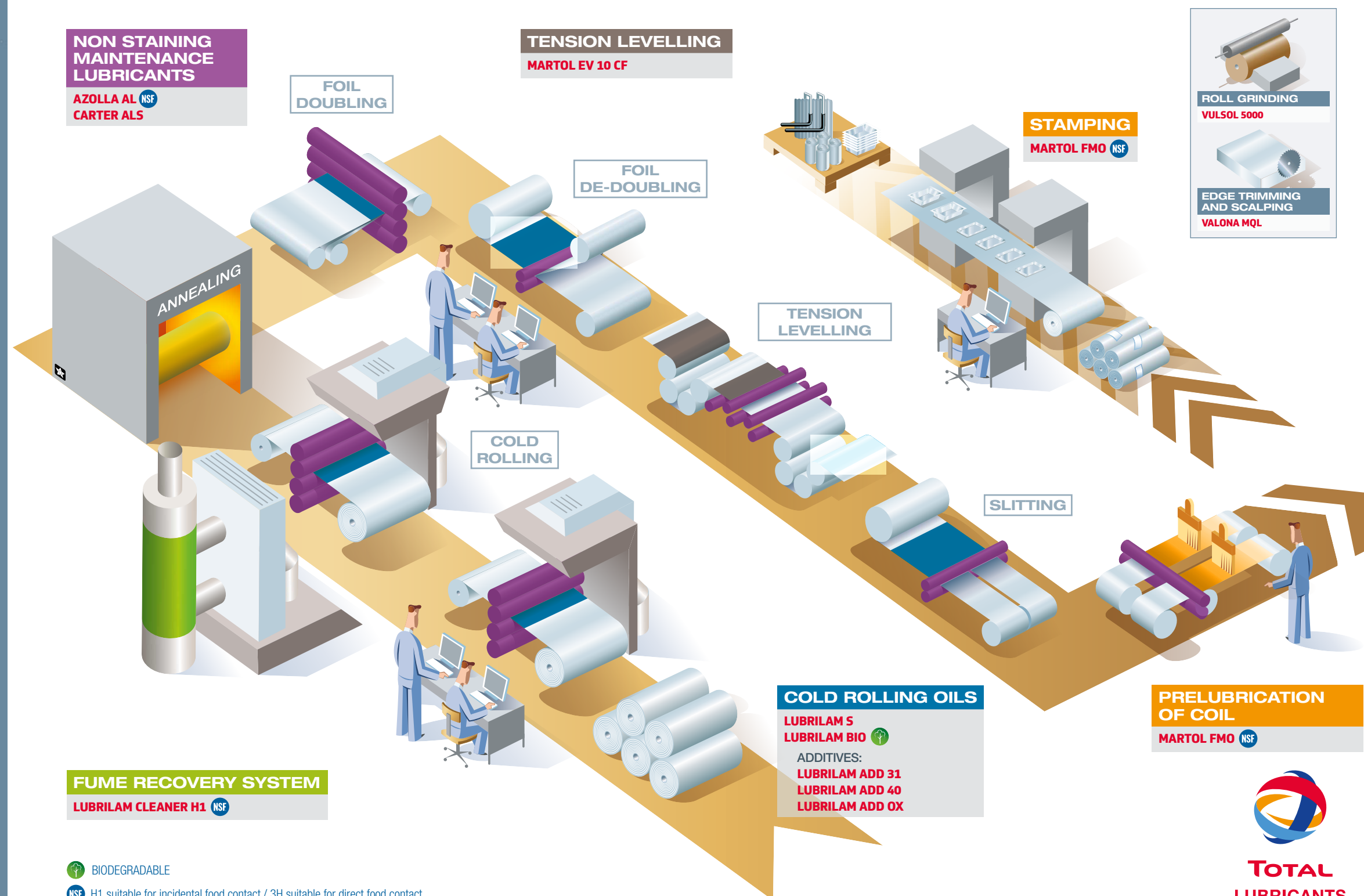
- Productivity
- Cost savings
- Performance
- Sustainability

Your challenges

- **Enhanced reduction rate per pass**
In a very competitive business, productivity is the key
- **High rolling speed**
To meet the growing demand in aluminum
- **Reliable product quality**
Good quality in the production output, including a clean rolling surface, is a critical point
- **Safety and sustainable development**
Make the workshop atmosphere safe
Meet the high food grade product demand

Our solutions

- **Innovative high-performance products**
Constant improvement of our products to meet your technical needs
- **More sophisticated additives blended in our hydrogenated base oils (HDA® process)**
- **Stability of the products characteristics, and narrow distillation ranges**
Low consumption
No residue
- **Products reduced health and environmental impacts**
High flash point and low aromatics content
Food and Drug Administration approved products



BIODEGRADABLE

NSF H1 suitable for incidental food contact / 3H suitable for direct food contact



TOTAL LUBRICANTS

OUR ANSWER TO ALL YOUR NEEDS

Key range

■ LUBRILAM S

Cold rolling oil, with low aromatic compounds and high flash point.

■ LUBRILAM ADD

Series of various performance additive concentrates for rolling oils.

■ LUBRILAM CLEANER H1 NSF

Scrubbing oil for fume recovery systems (NFS H1 approval).

Alu offer

■ AZOLLA AL NSF

Non-staining hydraulic oil, suitable for incidental food contact (NFS H1 approval).

■ CARTER ALS

Non-staining enclosed gear lubricant for back-up rolls in rolling process.

■ MARTOL FMO NSF

Food grade lubricant for pre-induction before stamping and deep drawing in aluminum packaging production (NSF 3H approval).

■ MARTOL EV 10 CF

Fast vanishing oil for tension levelling.

Sustainable development solution

■ LUBRILAM BIO

Bio-based cold rolling oil, with low aromatic compounds and high flash point.

Annexe operations

■ VULSOL 5000

Chlorine free sprayable neat oil for roll grinding.

■ VALONA MQL

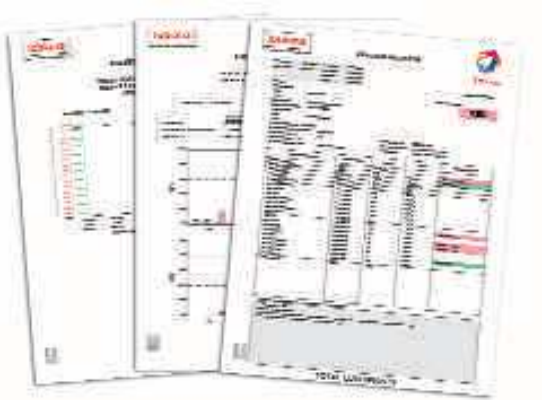
Synthetic fluid for edge trimming and scalping.

Lubrication Support

Keep an eye on your lubricants



oil analyses for industry



- Extended lubricant life
- Monitoring the state of machines and detection of anomalies through monitoring the oil and its elements
- Savings through preventive monitoring, anticipation and detection of potential failures

Optimize your maintenance



Maintenance and lubrication software



- Optimal availability of the tool work through planing and regular follow-up of lubrication and maintenance
- Analysis of lubrication costs
- Sources of optimisation of preventive maintenance

To adapt these services to your requirements,
do not hesitate to consult us

Africa	+33 1 41 35 47 62	Germany	+49 211 90 570	Norway	+47 22 01 95 59
Asia	+65 6879 22 00	Great Britain	+44 1977 636 200	Poland	+48 22 435 14 00
Austria	+43 616 46 11 0	Greece	+30 2 10 544 05 40	Portugal	+351 21 723 08 32
Belgium	+32 2 288 99 33	Hungary	+36 23 50 75 00	Spain	+34 91 722 08 40
Czech Rep.	+420 2 2489 0511	Italy	+39 02 54 068 370	Sweden	+46 40 38 36 50
Denmark	+45 45 81 3701	Luxembourg	+352 480 481-1	Switzerland	+41 22 306 66 00
France	+0 800 771 522*	Netherlands	+31 70 318 04 80	Other	+33 1 41 35 40 00

Find your local contact at www.lubricants.total.com



TOTAL LUBRIFIANTS

16 rue de la République - F 92922 Paris La Défense Cedex
Tél : 33 (0)1 41 35 40 00 - www.lubricants.total.com

Oils and Greases for Paper Mills

Meet your productivity
and reliability requirements



LUBRICANTS SPECIALLY DESIGNED TO YOUR NEEDS

TOTAL Products

Wood yard

- **RUBIA**
 - **TRANSMISSION**
 - **EQUIVIS ZS**
- Complete range of approved lubricants for all types of machines

- **CERAN PM**
- Reduced consumption due to outstanding water resistance properties
Excellent anti-corrosion properties

- **CERAN GEP O**
- Reduced wear and consumption by improved adhesivity

- **KASSILA GMP**
- Extended gear and bearing life

Handling equipments

Lubrication of motors
Transmissions and hydraulic systems

Conveyors / Bearings

Presence of water, dust, chocs

Chains / Open gears

Humid environment, choc, dust, high load, low speed

Closed gear boxes

Humid environment, dust, high load

Pulp mill

- **CARTER VP/CS**
 - **KASSILA GMP**
- Extended lifetime through high anti-wear and anti-corrosion properties

Agitators / gears

Blending units
Gear lubricants
Pumps, screens, refiners

Finishing section

- **STATERMIC XHT**
- Reduced grease consumption and reduced bearing failures

Coated machine

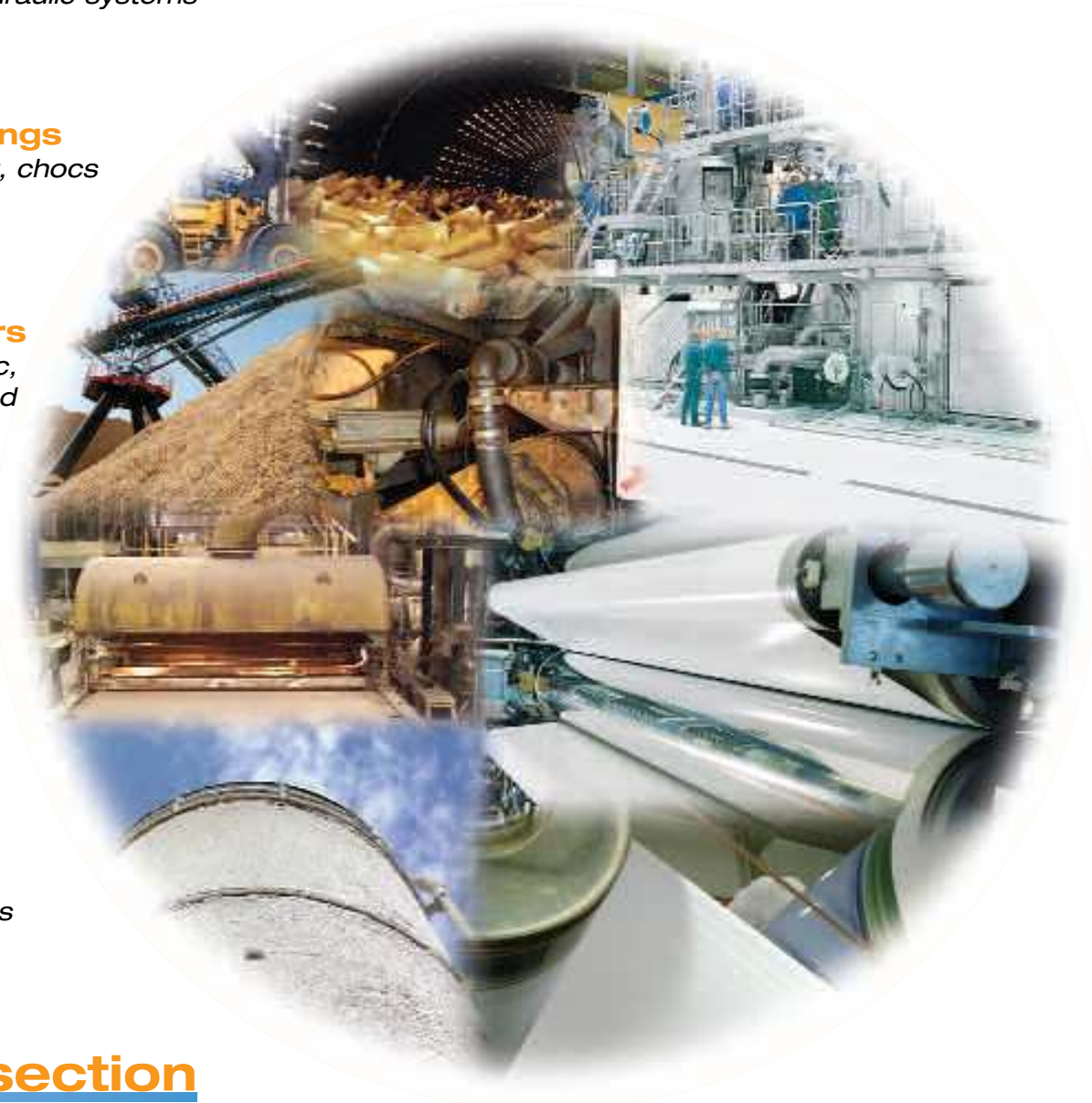
Shafts and wide gears

- **MISOLA MAP**
- **MISOLA MAP SH**

Ash-free oils

Super calander

Circulation oils



Paper machine

Wet section - Press section - Dry section

Circulation oils

Responding to VOITH/METSO specifications

MISOLA ASC •

MISOLA AF •

Ash-free mineral oils

Improved lifetimes of oils and bearings

Reduced consumption of filters

MISOLA MAP •

Semi-synthetic ash-free oil

Excellent price/quality ratio

MISOLA MAP SH •

Synthetic high temperature ash-free oil

Cleans efficiently the lines
Excellent protection against high temperature wear

Hydraulic oil

AZOLLA AF •

Ash-free mineral oil

Excellent performance in presence of water

Reduction of filter blockings thanks to an improved filtrability

Grease for wet section

CERAN PM •

Grease resistant against washing out

Reduced grease consumption
Increased equipment lifetime
Reduced risks of pollutions

Greases for dry section

Electrical motors - ventilators

ALTIS EM2 •

ALTIS SH2 •

High technology greases with improved lubrication properties

Significant reduction of temperatures and vibrations

The **benefits** offered by



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TOTAL
LUBRICANTS

Energizing performance. Every day

STEEL INDUSTRY

Better efficiency and savings.



TOTAL
LUBRICANTS

Energizing performance. Every day



STEEL INDUSTRY

Since 1955, **Total Lubricants** has developed innovative high-performance products and solutions.

In a word of fierce competition within steel industry, any means to decrease operating costs and improve productivity is to be considered.

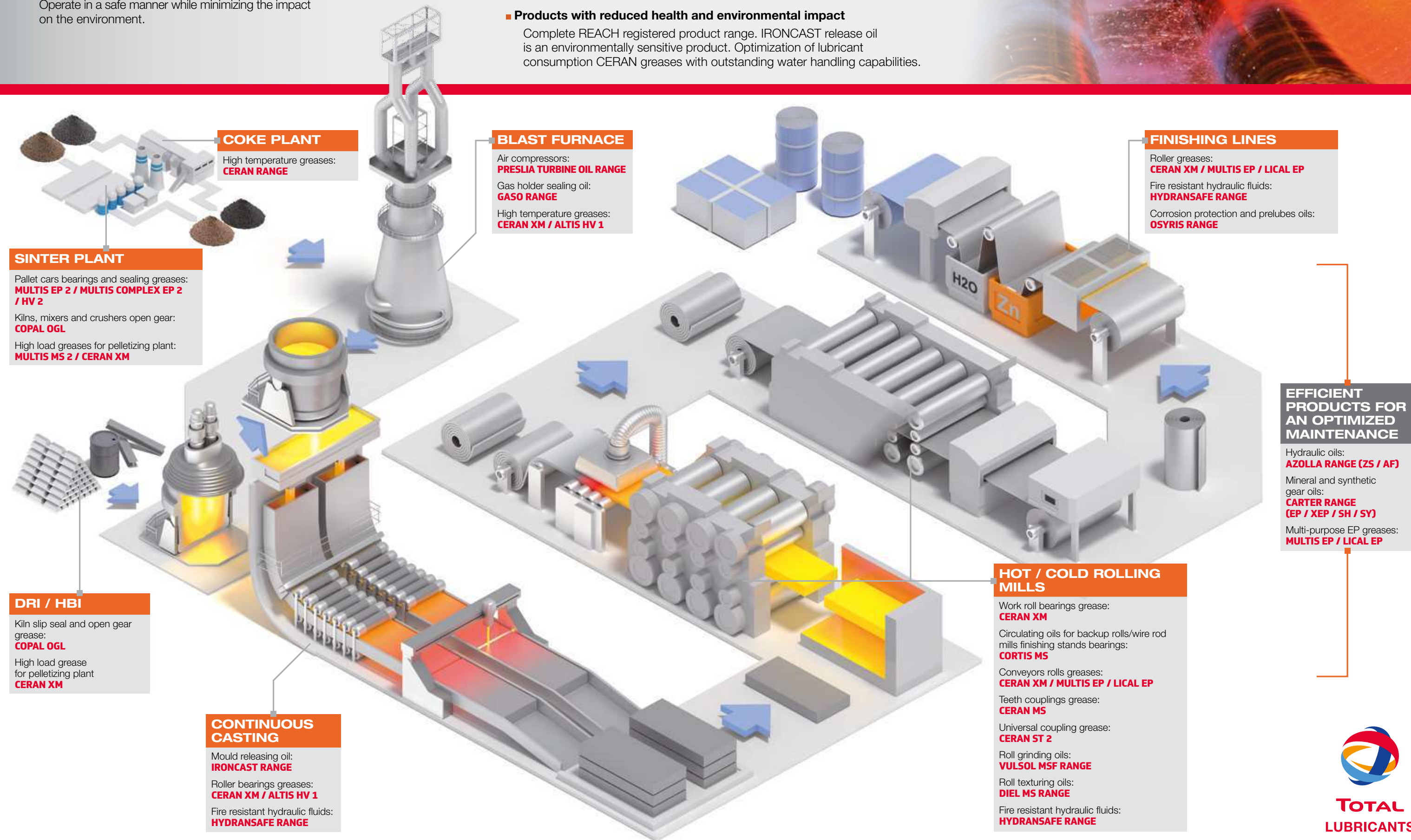
TOTAL Lubricants is at your side to help you get the best from your machinery and to bring you both the reliability and the competitiveness you are looking for.

Your challenges

- **Reliability of equipment**
Maximize equipment lifecycle and productivity.
- **Severe working conditions**
Mitigate the impact of contamination ie: dust, dirt, water etc... and also varying temperatures.
- **Safety and sustainable production**
Operate in a safe manner while minimizing the impact on the environment.

Our solutions

- **High performance –state-of-art oils and greases**
Optimizing the lifecycle of key assets and equipment while minimize downtime and maintenance costs.
- **Complete lubricant range dedicated for steel industry**
Long term experience handling the impact of high temperature operations with our new gear oil technologies and with CERAN our grease range for steel as well as our fire resistant hydraulic fluids.
- **Products with reduced health and environmental impact**
Complete REACH registered product range. IRONCAST release oil is an environmentally sensitive product. Optimization of lubricant consumption CERAN greases with outstanding water handling capabilities.



TOTAL
LUBRICANTS