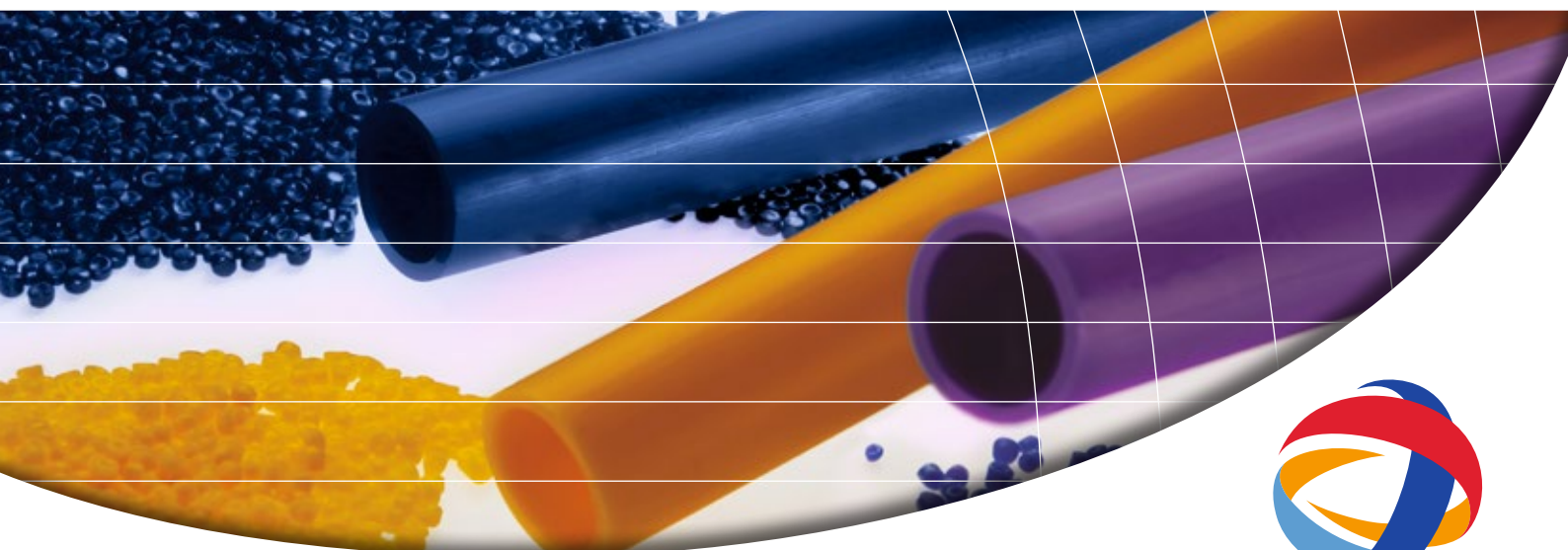
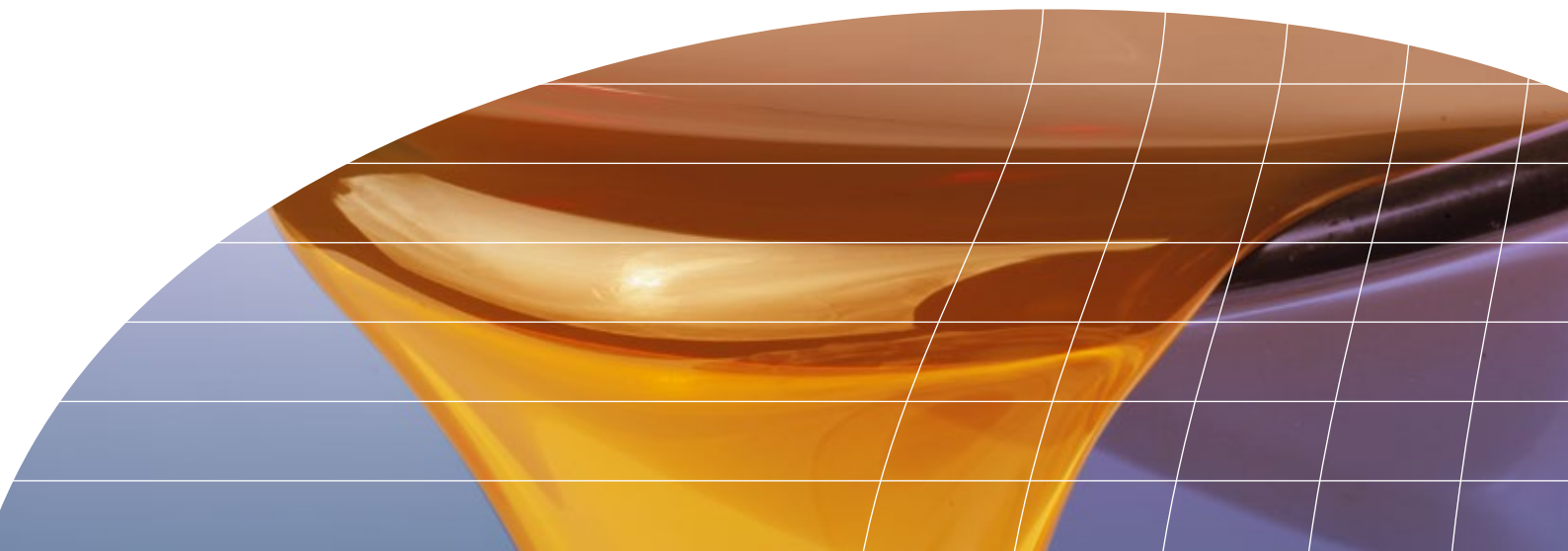


Chemical Industry

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 Lubrificants** 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




By courtesy of Burckhardt Compression

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	Cleaning additive of heat transfer circuits	<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		<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 Lubrificants, 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

With our production, supply chain and commercial presence in more than **150 countries**, we deliver a full range of lubricants to **cover all your needs**.

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

5 good reasons for choosing TOTAL

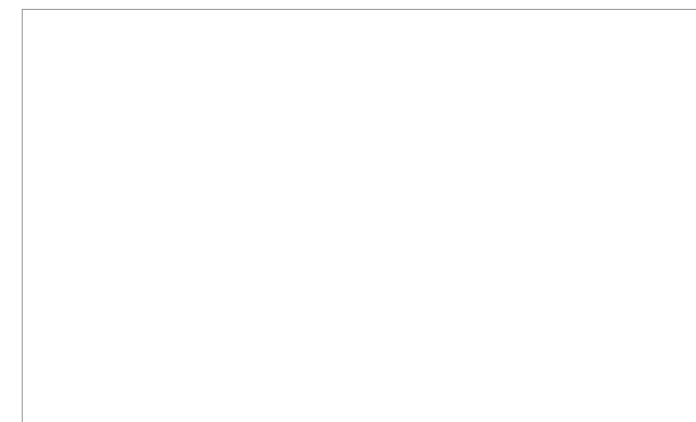
Quality and environment

Total Lubrificants **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.

Safety Data Sheets are available at www.quickfds.com



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



The right choice in lubricants

TOTAL