

Growing stronger
together



FILL WITH **Mobil**™

Help improve your business results whilst boosting your sustainability ambitions.

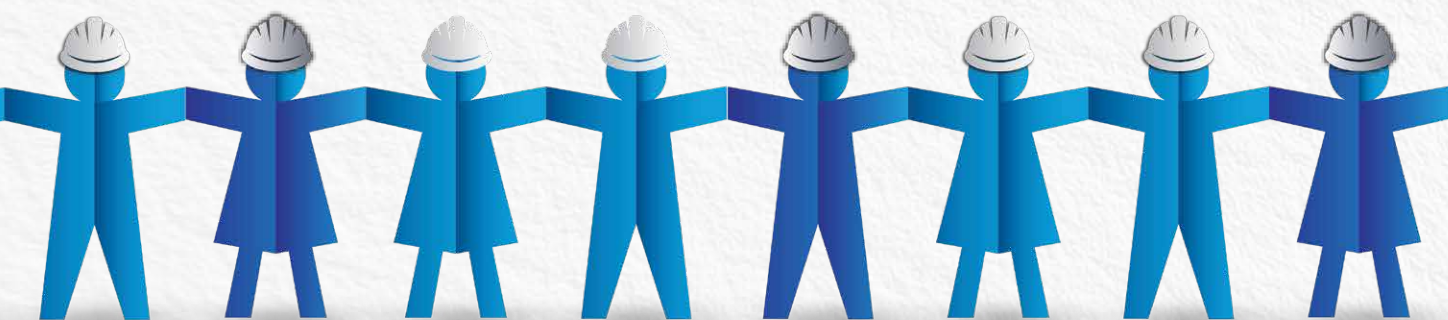
It's easier when you work with Mobil.™

Mobil are committed to helping businesses, communities, and individuals make choices that have a positive impact, supported by our specialist expertise and innovative lubrication solutions for the pulp and paper industry.

Progress toward a better future is something we are all working towards, and we believe it's easier when we work together.

Why work with Mobil?

- Maximise your equipment performance
- Extend equipment life and minimise downtime
- Improve operator safety benefits
- Comprehensive equipment coverage
- Achieve more with less – increase efficiency while reducing impact
- The right lubricant management for you



“Paper machines operate in extremely harsh conditions – at speeds of over **2,000 m/min** and with steam temperatures exceeding **200°C**¹. Meanwhile, downtime comes with a significant price tag. **Advanced synthetic oils have the potential to withstand these stresses and guard against unplanned stoppages.**”

NIINA HEINOLA, Field Engineer,
ExxonMobil Product Solutions EAME



Maximise your equipment performance

Operating in extreme conditions, the benefits provided by highest quality lubricants is greater.

Mobil's technical expertise can help you to select the right products and schedule optimal drain intervals in order to achieve peak performance. This expertise continues to deliver through Mobil's market leading innovations, driving the ongoing advancement of lubricant and equipment performance.²

Extend equipment life and minimise downtime³

Working with Mobil™ helps you focus on doing more of what you do best.

Mobil's products and solutions are designed to provide ultimate protection against overheating, wear and contamination, which will enable you to enjoy increased equipment life and reduced downtime for repairs.⁴

Mobil products also continue to deliver exceptional performance benefits for longer. By working with Mobil field engineers, you can establish how much you can increase your drain intervals by, further reducing downtime for maintenance.



¹ For more information on pulp and paper industrial lubricants, read here – <https://mobil.co/press-release-pulp-and-paper-lubricants>

² For more information, read how Mobil diverts waste away from landfills here – <https://mobil.co/en-press-release-zero-waste>

³ c.70% of equipment failures are blamed on lubrication breakdown and wear loss. United States Congress, Resolution #916 of September 29, 2016.

⁴ For more information, read how Mobil increases bearing life here – <https://www.mobil.eu/en-gb/lubricant-expertise/resources/mobilgrease-xhp-grease-extends-bearing-life>



Even more Mobil™ benefits.

Helping your operation thrive in pulp and paper.

Improved operator safety

Minimise human to machine interactions to reduce the incidences of accidents and drive up human safety.

A knock-on benefit from Mobil's extended performance life and minimisation of downtime is that your people will spend less time maintaining your equipment. Over time and scale, even a modest increase in drain intervals will build up to a significant reduction in the possibility of workplace hazards.⁵

Comprehensive equipment coverage

Your business and equipment needs are at the foundation of Mobil's product development focus.

We work closely with leading OEMs to provide solutions for a wide range of applications, including:

- Gear protection
- Bearing protection
- Seal protection
- Colour stability
- Oxidation stability

Achieve more with less – increase efficiency whilst reducing impact

By using Mobil™ products, backed by the dedicated specialist support of our field engineers, you can work towards advancing your sustainability goals by reducing greenhouse gas emissions and waste.⁶

Mobil's products include innovative properties which enable you to:

- Improve performance and drive up energy and fuel efficiency
- Reduce equipment waste by extending operating life
- Reduce lubricant waste by increasing your drain interval
- Increase productivity, reducing the greenhouse gas emissions generated⁷

Working with Mobil can help you to identify the optimal efficiency possible with your lubricant, generating significant energy savings which contribute towards your corporate sustainability goals.⁶

The right lubrication management for you

No matter what challenges you face, Mobil can provide you with the best possible lubrication solution for your specific needs.

We'll work closely with you, offering tailored lubricants and expert engineering services that can help improve your lubrication management and boost the efficiency your business.



Paper mill triples oil life with Mobil

- State-of-the-art paper machine required protection for heavily loaded dryer bearings
- Transitions to Mobil SHC™ PM 320 synthetic paper machine oil
- Triples oil life vs conventional mineral oil
- Oil fill lasts over 18 years
- Company estimates EUR 90,000 savings per year generated⁷

⁵ For more information on how Mobil reduces workplace hazards, read here - <https://mobil.co/en-press-release-zero-waste>

⁶ Visit mobil.eu to learn how certain Mobil-branded lubricants may provide benefits to help reduce environmental impact.

⁷ For more information on how Mobil could benefit your business, read here - <https://mobil.co/press-release-triple-oil-life>

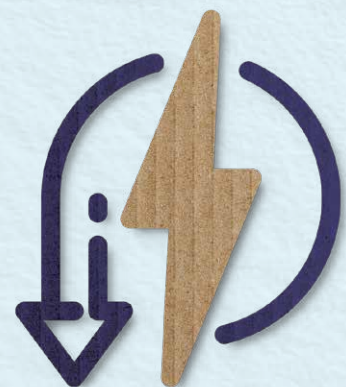
Keep your equipment running better for longer.

Choosing the right lubricants and greases is critical for protecting your paper plant equipment.

Mobil™ industrial lubricants deliver improved reliability and productivity in demanding conditions, from hydraulics and gear drives to the largest paper machines.

A paper machine is the heart of a pulp and paper plant, requiring thousands of litres of oil, so it demands special attention. Our solutions offer superior wear protection, corrosion resistance, cleanliness, and water tolerance, ensuring efficient operation and extended equipment life.⁷

Being confident in the performance of your equipment allows you to focus on what you do best, driving the growth of your business.



up to 3% less energy consumption⁸ with Mobil Paper Machine Oil S

⁷ For more information on how Mobil could benefit your business, read here - <https://mobil.co/press-release-triple-oil-life>

⁸ This proof of performance is based on the experience of a single customer. Actual results can vary depending upon the type of equipment used and its maintenance, operating conditions and environment, and any prior lubricant used.

⁹ For more information on how Mobil Paper Machine Oil could benefit your business, read here - <https://mobil.co/press-release-triple-oil-life>

PERFORMANCE PROFILE

Read how Mobil™ Paper Machine Oil S 220 helped prevent major paper machine downtime¹⁰

Problem

Mobil Paper Machine Oil S 220 became contaminated with process water and cleaning agents in a large paper machine.

Typically, this would result in major machine downtime, massive costs due to missed production and the need for a complete paper machine circulation oil change.



12 years and counting proven lifespan with Mobil Paper Machine Oil S⁹

Solution

In this case, the strength of the Mobil Paper Machine Oil S 220 formulation, combined with close collaboration with the customer and comprehensive technical support, made the gradual resolution of the oil contamination issue possible. Detailed used oil analysis also played a crucial role, ultimately preventing the need for an oil change and, most importantly, avoiding a paper machine shutdown.

The excellent wear protection, oxidation stability, and chemical stability of Mobil Paper Machine Oil S 220 enabled the machine to run despite contamination. With a proven life span of 12+ years, the oil will continue to protect gears and bearings under harsh conditions for years.

Result

A significant equipment issue was narrowly avoided through close collaboration with our customer and distributor. We demonstrated

that Mobil Paper Machine Oil S 220 could withstand severe conditions, saving the client money and preventing oil wastage.

¹⁰ Visit mobil.eu to learn how certain Mobil-branded lubricants may provide benefits to help reduce environmental impact

Mobil™ lubricants for pulp and paper

Explore below for specific product details and recommendations.

Product	Key	Application	Environmental benefits & performance features
 Mobil Paper Machine Oil S Series		- Lubrication of severe industrial paper machine circulating systems - Particularly suitable for machines where it is essential for excellent colour stability to visually monitor the oil flow rate through flow meters	- Enhances system efficiency and reliability: Improves lubrication, cooling, and flow control while protecting gears and bearings in diverse environments. - Reduces maintenance and operating costs: Lowers filter replacement needs, minimises deposits, and simplifies water removal for cleaner systems. - Supports environmental responsibility: Extends oil and component life, reduces waste, and ensures optimal energy efficiency, contributing to sustainable operations. - POP: Mobil Paper Machine Oil S 220 saved up to 3% of energy.¹¹
 Mobil DTE™ PM Excel Series		Lubrication of the wet end, press section, calendar applications and dry end, including in Voith and Metso (Valmet) paper machines	Enhances durability and performance: Provides exceptional anti-wear and corrosion protection, reducing deposits and extending the life of components and equipment.
 Mobil DTE™ FM Excel Series		Food grade NSF H1 approved circulation oil	Meets NSF H1 and FDA requirements, is approved for Kosher, Parve and Halal dietary requirements and is formulated to minimise the risk of MOAH contamination in food.
 Mobil DTE™ 10 Excel Series		- Industrial and mobile equipment hydraulic systems operating at high pressures and temperatures or requiring cold start-up - Systems requiring a high degree of load-carrying capability and anti-wear protection or utilising various metallurgies (incl. yellow metals)	- Enhances system efficiency and longevity: provides up to 6% improvement in hydraulic pump efficiency¹¹, reduces wear, deposits, and maintenance needs while ensuring reliable performance across temperatures and conditions. - Improves resource efficiency: Extends fluid and seal life, reduces energy consumption, and minimises waste for sustainable operations. - POP: Mobil DTE 10 Excel™ 46 in combination with Mobil Lubricant Analysis helped the world's largest pull-down forging press reduce oil consumption by 265,000 litres and carbon emissions by 4,000 tons over 20-years¹⁴.
 Mobil DTE™ Hydraulic Zinc Free Series		- Systems employing multi-metal designs in pumps and other system components - Systems requiring a high degree of load-carrying capability and anti-wear protection	- Enhances durability and performance: Extends oil and equipment life, reduces wear, and ensures reliable operation even in the presence of moisture. - Ensures compatibility: Provides robust performance across diverse materials and conditions, supporting efficient and sustainable system management.

Product	Key	Application	Environmental benefits & performance features
 Mobil SHC Cibus™		Food grade NSF H1 approved hydraulic oil	- Multi-service applications - One product can replace several as Mobil SHC Cibus Series oils can be used as hydraulic, gear, bearing and circulating oils within the food-grade plant operations and can be included as part of a HACCP plan, helps minimise inventory requirements and reduces potential for product misapplication. - Energy savings potential – energy saving up to 3.5% in hydraulic and 3.6% in gear applications versus conventional oils in statistically validated field and laboratory tests.
 Mobil SHC™ 600 Series		- Gearboxes running under stress conditions – constantly, heavily loaded, running fast and/or hot - Remotely located gearboxes, where oil change-out is difficult - Mechanical pulp refiner unit high-load gearboxes - Filled for life gearboxes, especially high ratio/ low-efficiency worm gears	- Enhances performance and equipment longevity: Supports high and low-temperature operation, reduces friction, and minimises wear, ensuring extended equipment and component life. - Advances environmental benefits: can reduce energy consumption in gearboxes and circulating systems by 3.6%¹³, can extend oil life up to 6 times vs. conventional oil, hence reducing waste oil. - POP: Switching to Mobil SHC™ 632 helped a leading corrugated packaging company increase the energy efficiency of their gearbox operation by 6.5%, reducing their carbon footprint by nearly 20 metric tons of CO2 equivalent annually¹³.
 Mobilgear™ 600 XP Series		- Industrial gearing for conveyers, agitators, dryers, extruders, fans, mixers, presses, pulpers etc. - Non-gear applications include shaft couplings, screws and heavily loaded plain and rolling contact bearings operating at slow speeds.	- Enhances durability and productivity: up to 15 times the industry requirement for - Wear protection¹²: extends equipment life leading to improved efficiency and output. - Lowers maintenance and operational costs: Extends lubricant life, reduces oil leakage and contamination, and ensures cleaner systems with fewer repairs and maintenance needs. - Promotes environmental benefits: Reduces oil consumption, waste, and storage requirements, streamlining operations while conserving resources. - Ensures versatility and reliability: Effective across a wide range of applications, even in water-contaminated environments, reducing the need for multiple lubricant grades and supporting problem-free operation.
 Mobil SHC Cibus™		Food grade NSF H1 approved gear oil	Meets NSF H1 and FDA requirements, is approved for Kosher, Parve and Halal dietary requirements and is formulated to minimise the risk of MOAH contamination in food.

Mobil™ lubricants for pulp and paper

Product	Key	Application	Environmental benefits & performance features
 Mobil Glygoyle™		- Food grade NSF H1 approved gear oil - Fully synthetic, polyalkylene glycol (PAG) oil particularly suitable for worm gear application	- Energy savings potential - Low traction coefficient resulting in potential energy efficiency increase – up to 3.6% in gear applications versus conventional oils in statistically validated field and laboratory tests.¹³ - Enhances performance and equipment longevity - increased thermal conductivity of about 10% over mineral and PAO oils, leads to lower operating temperatures and longer component life.
 Mobilith SHC™ PM Series		- White grease dedicated to pulp and paper industry - Wet end paper machine bearings - Highly loaded press section bearings - High-temperature felt roll and calendar stack bearings	- Enhances durability and reliability: Provides excellent protection across a wide temperature range, reduces wear, and extends bearing life, even in harsh acidic, alkaline, or aqueous environments. - Advances environmentally friendly operations: Reduces resource consumption through extended bearing and grease life, lower relubrication frequency, and minimised waste, promoting eco-efficient operations.
 Mobilgrease™ XHP Series		- Heavy equipment central lubrication systems - General purpose chassis lubrication	- Minimises maintenance and resource use: Supports extended re-lubrication intervals, reducing downtime, maintenance needs, and associated costs. - Promotes environmental practices: Ensures efficient operation in remote applications with low-temperature pumpability, conserving resources and reducing environmental impact.
 Mobil Centaur™ XHP Series		- Hot rolling work roll bearings - Roll necks - Couch, press and breast rolls - Wood pellet mill roll bearings	- Optimises maintenance and performance: Provides extreme-pressure protection and high temperature performance. Resists water washout, absorbs free water without losing consistency, and ensures reliable bearing lubrication up to 232°C. - Advances environmentally friendly operations: Extends re-grease intervals, reducing grease consumption, waste, and maintenance requirements, promoting eco-conscious and resource-efficient practices. - POP: Mobil Centaur XHP 462 helps a forest products producer reduce equipment failure and enhance productivity, delivering an annual savings of USD \$60,000.
 Mobil SHC Polyrex™ Series		Food grade NSF H1 approved synthetic Polyurea grease	- Optimises maintenance and performance: Excellent high temperature performance - able to provide lubrication up to 170°C. Highly resistant to water and has excellent corrosion protection, providing added protection to equipment in wet, humid environments and applications where water wash downs are frequent. - Food safe performance - NSF H1 registered and also comply with Title 21 CFR 178.3570 by the Food and Drug Administration (USA) for lubricants with incidental food contact. Meets the requirements of Kosher dietary requirements.

Product	Key	Application	Environmental benefits & performance features
 Mobilgrease™ FM series		Food grade NSF H1 approved multi-purpose mineral grease	Optimises maintenance and performance: High performance multi-purpose products designed specifically for the lubrication of food processing machinery.
 Mobil SHC™ 800 Ultra Series		Synthetic superior high performance turbine oils designed for use in steam turbines, gas turbines, combined cycle gas turbine (CCGT) and turbo compressor applications	- Enhances system reliability and efficiency: Formulated to offer outstanding reduction of varnish and deposit formulation, which helps improve the reliability of turbines and compressors. - Optimises resource use: Helps ensure a long and trouble-free operation with exceptional demulsibility, air release and resistance to foaming.
 Mobil™ DTE 700 Series		High-quality mineral turbine oil for steam and gas turbines	- Optimises maintenance and performance: designed to improve productivity, enhance equipment reliability, and increase uptime in both steam and moderate-duty gas turbines. - Environmental benefits: Zinc-Free turbine lubricant for reduced environmental impact.
 Mobil SHC Cibus™ 32 HT		Food grade NSF H1 approved fully synthetic Heat Transfer Oil for closed, indirect heating installations	- Optimises maintenance and performance: Absence of wax and low pour point enables exceptional low temperature fluidity for easy start up. - Food safe performance - NSF H1 registered and is also suitable under Kosher, Parve and Halal dietary laws.
 Mobiltherm 605		High performance heat transfer oil for use in closed indirect heating installations	- Supports environmental responsibility: formulated from highly refined base stocks that are resistant to thermal cracking and chemical oxidation. Very thermally stable (Closed Systems up to 315° C, Open Systems up to 180° C) and capable of an extremely long service life without deposit formation or viscosity increase, reducing waste oil requirements. - Advances environmental benefits: environmentally friendly mineral oil formulation lacking any additives harmful to environment or health.¹⁵

11 Compared to Mobil DTE 20 series when tested in standard hydraulic applications under controlled conditions.

12 As measured by the industry standard FAG FE 8 test.

13 Energy efficiency relates solely to the performance of Mobil SHC 600 when compared to conventional (mineral) reference oils of the same viscosity grade in circulating and gear applications. The technology used allows up to 3.6% efficiency compared to the reference when tested in a worm gearbox under controlled conditions. Efficiency improvements will vary based on operating conditions and application.

14 This proof of performance is based on the experience of a single customer. Actual results can vary.

15 For more information on Mobil synthetic lubricants, read here - <https://www.mobil.eu/en-gb/lubricants/categories/mobil-shc-synthetic-lubricants>

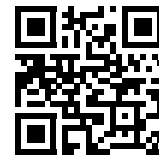
By your side

As you navigate the challenges and opportunities in the competitive pulp and paper industry, you'll advance faster with Mobil by your side.

Our products and services can help improve your business results, while boosting sustainability by reducing greenhouse gas emissions and waste. Are you ready to begin a journey of growth and collaboration? Reach out to us today to discover how Mobil can support your business in achieving more. Let's grow stronger together.



For more information on all Mobil lubricants for pulp and paper, call your local company representative or visit **www.mobil.eu/pulp-and-paper**



For more details on ExxonMobil sustainability ambitions and actions, please refer to **Sustainability Reporting | ExxonMobil**



mobil.eu



Mobil Lubricants Europe

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Health and Safety

Based on available information, these products are not expected to produce adverse effects on health when used for the applications referred to above and the recommendations provided in the Material Safety Data Sheets (MSDSs) are followed. MSDSs are available upon request through your sales contact office or via the Internet. These products should not be used for purposes other than the applications referred to above. If disposing of used product, take care to protect the environment.

Mobil™