



Your world, more efficient.



LUBRICANTS

WIND POWER



CEPSA OILMONITOR

The operation and maintenance of wind turbines are the key to optimise energy production and reduce the associated costs. Because the sum of these tasks can reach up to 25% of a wind farm's total investment, **proper maintenance directly promotes the profitability** of the facility.

In predictive maintenance, lubrication and greasing of mechanical parts are highly relevant affairs. Controlling the state of the oil and setting optimum change periods are essential **to improve performance and extend the life of each piece of equipment**.

At Cepsa, in addition to our portfolio of wind-energy-specific products, we offer personalised technical support. With **Cepsa OilMonitor**, a specialised lubricant oil analysis and diagnostic service, we deeply involve ourselves in the control and monitoring of each product. **Our Cepsa Research Centre**, located in Madrid, analyses the samples received at the **Laboratory**, within a maximum of 48/72 hours of receiving them. The results are evaluated by our team of **specialist engineers**, who identify potential faults in the machinery and provide technical recommendations to each client to avoid them.

You are just one click away from your personal space on the Cepsa website, which offers you a rapid exchange of information. Among other options, you can:

- ◆ Record and monitor the status of your samples
- ◆ Download the diagnostic reports prepared daily by the team of specialists
- ◆ Review the incidents log for each piece of equipment

In addition, you have a **personal technical manager** who facilitates direct communication, avoiding difficulties during the process of solving problems caused by virtual platforms.

SUMMARY TABLE

Component/Lubricant	AEROGEAR SYNT	AEROGEAR 320	HIDROSTAR HVL P	ARGA SYNT	ARGA WR EP	SUPER COOLANT 50%	ELEKOIL U-HV
Gearbox	🔴	🔴					
Hydraulic pitch system: braking and blade pitch control system			🔴				
Main shaft bearing				🔴			
Yaw bearing and drive				🔴	🔴		
Blade pitch bearing				🔴	🔴		
Yaw drive and Geared pitch drive	🔴	🔴					
Cooling system						🔴	
Transformer							🔴

At Cepsa we have developed a range of lubricants and greases that provides optimum solutions for the demanding operating conditions on any wind farm. We provide you an extensive portfolio of products with excellent properties, which extends the life of the equipment and facilitate the maintenance of wind turbines.

CEPSA AEROGEAR SYNT 320

The CEPSA AEROGEAR SYNT 320 lubricant is a high-performing synthetic oil, formulated with polyalphaolefins, polyol-esters and latest-generation additives. This provides the product outstanding protection against wear and micropitting in gearboxes. Its performance has been tested by major companies in the sector, reaching an operating life of over seven years and maintaining the equipment in perfect condition. All of these characteristics make it the best choice for any high-performance, both in terms of maintenance and first fill by manufacturers. It meets the following specifications:

DIN 51517 Part 3 (CLP)	ISO 12925-1 Type CKC/CKD/CKS/CKT	AIST 224
AGMA 9005-F16 AntiScuff	DAVID BROWN S1.53.106	FIVES CINCINNATI P-59
SIEMENS FLENDER AG Rev.15	ACCIONA ENERGY	BOSCH-REXROTH
GAMESA	WINERGY	IBERDROLA – Óleo Project
FAG	SKF	HANSEN INDUSTRIAL TRANSMISSIONS

CEPSA AEROGEAR 320

The CEPSA AEROGEAR 320 lubricant is formulated with specially selected mineral base oils and specific additives. Its chemical components ensure excellent protection for gears exposed to extreme pressure, as well as effective defence against micropitting. It meets the following specifications:

DIN 51517 Part 3 (CLP)	ISO 12925-1 Type CKC/CKD	AGMA 9005-F16 AntiScuff
MÜLLER WEINGARTEN	DAVID BROWN S1.53.101 Type E	FIVES CINCINNATI P-59
SIEMENS FLENDER AG Rev.15	AIST 224	

CEPSA HIDROSTAR HVLP

The CEPSA HIDROSTAR HVLP range of lubricants are oils with a high viscosity index, formulated with highly refined paraffin base oils and specific additives. This provides the product anti-wear properties and a high resistance to thermal degradation. It is supported by the main manufacturers and greatly exceeds the following quality levels:

DIN 51524 Part 3 HVLP	ISO 6743-4 HV	ISO 11158 HV
FILTERABILITY ISO (Dry&Wet)	AFNOR NF E 48-603-H	FIVES CINCINNATI P-68, P-69 and P-70
PARKER DENISON HF-0, HF-1, HF-2	EATON Brochure 03-401-2012	BOSCH-REXROTH 90220

CEPSA ARGAS SYNT

Thanks to the lithium complex thickener technology combined with carefully selected additives, CEPSA ARGAS SYNT grease has the capacity to offer maximum protection against metal wear, humidity, oxidation and corrosion, even in off-shore application. The use of a 100% synthetic polyalphaolefin base oil ensures extended oil drain intervals, which makes maintenance tasks easier.

DIN 51502: KPHC1.5N-40	ISO 12924: L-XD(F)DIB1.5
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CEPSA ARGAS WR EP

The CEPSA ARGAS WR EP grease is formulated with a combination of lithium and calcium, thereby joining the benefits of both thickeners. It contains carefully selected, extreme pressure additivation to guarantee the maximum protection of gears and bearings exposed to heavy loads. Its excellent water-resistant capacity makes this grease ideal for lubricating wind turbines on the most severe conditions.

DIN 51502: KP2K-20	ISO 12924: L-XBCIB2	ACCIONA ENERGY
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CEPSA SUPER COOLANT 50%

Ethylene glycol-based coolant and an advanced, environmentally friendly, low-toxicity organic technology corrosion inhibitor package. It provides full protection to all components of the cooling system.

CEPSA ELEKOIL U-HV

The CEPSA ELEKOIL U-HV lubricant is a non-inhibited dielectric insulating oil, formulated with highly refined naphthenic base oils. Recommended for use in electric transformers exceeding 72 kV nominal voltage.

IEC 60296 Ed 4 (2012)

Blade pitch bearing & gear
CEPSA ARGA WR EP
CEPSA ARGA SYNT

OPERATING CONDITIONS

- Low temperatures
- High loads
- Vibrations
- Oscillating motion

PROPERTIES

- Highly shear stable
- EP features against shock loads
- Use over a wide range of temperatures
- High resistance to wear caused by wind variability
- Resistance to water contamination and protection against its corrosive effects



Main shaft bearing
CEPSA ARGA SYNT

OPERATING CONDITIONS

- Low speeds
- High loads
- Axial forces
- Vibrations
- Oscillating motion
- Humidity

PROPERTIES

- Highly shear stable
- Excellent protection against wear caused by wind variability
- Use over a wide range of temperatures
- High resistance to erosion
- Low deposit formation
- Resistance to water contamination



Main gearbox
CEPSA AEROGEAR SYNT 320
CEPSA AEROGEAR 320

OPERATING CONDITIONS

- High speeds
- Vibrations
- Oscillating motion
- Humidity

PROPERTIES

- Excellent anti-foam properties
- High protection against corrosion and wear
- High resistance to micropitting
- Stability under conditions of water contamination



Hydraulic pitch system
CEPSA HIDROSTAR HVLP

OPERATING CONDITIONS

- Wide range of temperatures
- Humidity

PROPERTIES

- High mechanical performance
- Excellent cleanliness
- High resistance to deposit formation
- Use over a wide range of temperatures
- Excellent anti-wear protection
- Highly shear stable



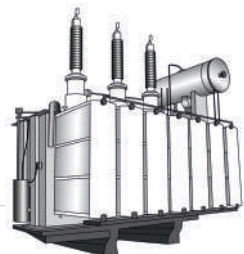
Transformer
CEPSA ELEKOIL U-HV

OPERATING CONDITIONS

- Low temperatures
- Humidity

PROPERTIES

- High insulating power
- Water and sediments free
- Low pour point



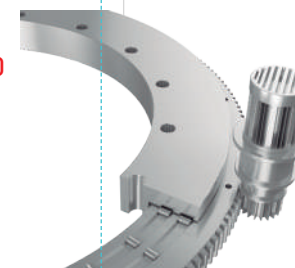
Yaw drive & geared pitch drive
CEPSA AEROGEAR SYNT 320
CEPSA AEROGEAR 320

OPERATING CONDITIONS

- Low speeds
- High loads
- Humidity
- Tendency towards corrosion

PROPERTIES

- High protection against corrosion and wear
- Excellent adhesion
- High resistance to micropitting
- Stability under conditions of water contamination



Yaw bearing & gear
CEPSA ARGA WR EP
CEPSA ARGA SYNT

OPERATING CONDITIONS

- Low speeds
- High loads
- Vibrations
- Shock loads
- Oscillating motion
- Humidity

PROPERTIES

- Highly shear stable
- EP features against shock loads
- Use over a wide range of temperatures
- High resistance to wear caused by wind variability
- Resistance to water contamination and protection against its corrosive effects





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