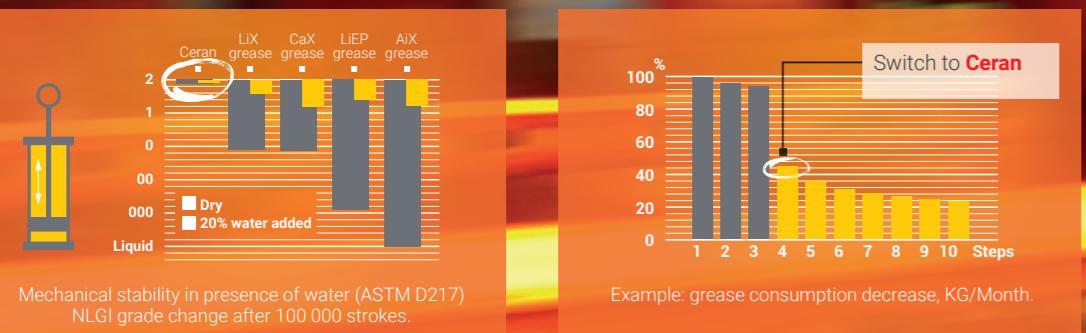


The benefits offered by TotalEnergies Lubrifiants

Ceran is a unique solution for Continuous Casting Machines

- Compared to standard greases, the **Ceran range** has a unique structure, providing outstanding grease properties, especially in regards to mechanical stability, corrosion inhibition, and water resistance.
- Ceran range** protects the friction surfaces from wear and reduces the friction coefficient of bearings. This is done in high temperatures, in the presence of sprayed cooling water. All of this ensures an increased equipment lifetime, along with a reduced downtime.
- This product can boast 40 years of delivering efficient solutions in the steel industry worldwide. It offers up to 4-5 times less bearings consumption when switching from the Li or LiX conventional greases.
- Comparative tests have shown that **Ceran**, when up against other greases, provides higher durability to bearings in the context of decreasing global grease consumption.
- Choosing **Ceran greases** will provide significant reduction in overall consumption, **reducing general maintenance costs**.



TotalEnergies Lubrifiants has launched the 5th generation of Ceran and is staying one step ahead of its competitors to meet present and future demands.

A major player

With our production, supply chain and commercial presence in more than 160 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.

5

good reasons for choosing TotalEnergies Lubrifiants

References & OEMs

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

Innovation & Research

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

Quality and environment

TotalEnergies Lubrifiants ISO 9001 and 14001 certifications are the guarantee of a long term commitment to quality and environment. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.



Steel continuous casting
High performance industrial lubricants
Dedicated solutions to improve your productivity



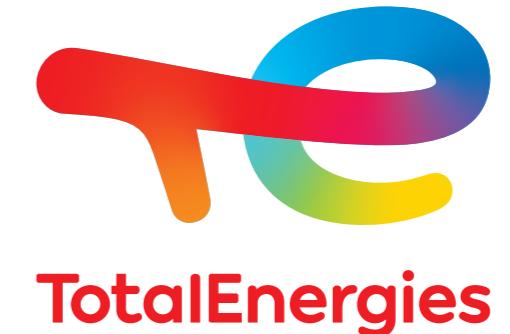
lubricants.totalenergies.com

ms.industry@totalenergies.com

Safety Data Sheets are available at ms-sds.totalenergies.com



TotalEnergies Industry Solutions



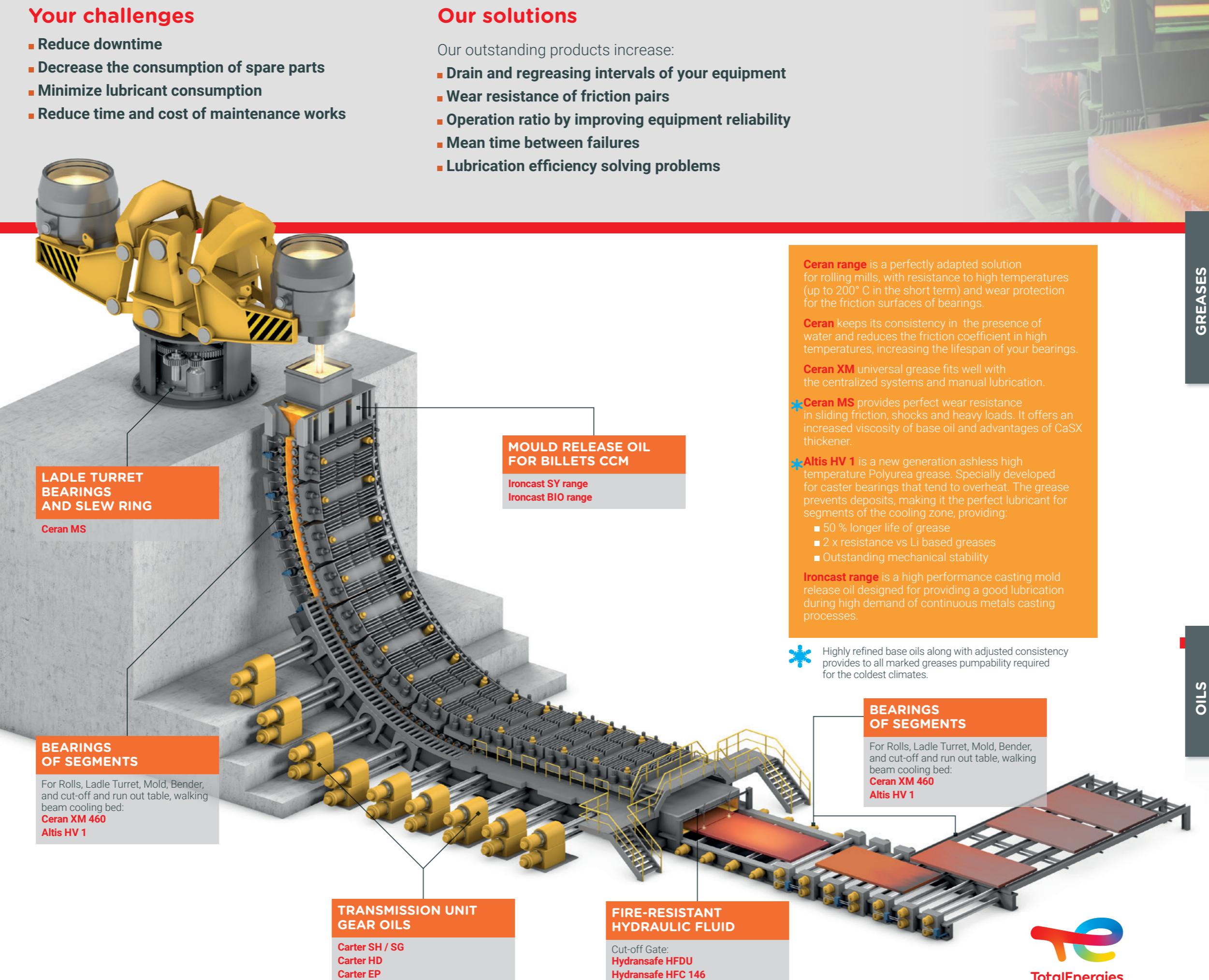


STEEL CONTINUOUS CASTING MACHINE OFFER

One of the most important units in a steel plant since the entire production chain depends on its reliability and its consistent production rate.

With over 40 years of experience in the steel industry, TotalEnergies

Lubrifiants has developed this dedicated lubricant range to provide steelmakers with economic benefits.



Your challenges

- Reduce downtime
- Decrease the consumption of spare parts
- Minimize lubricant consumption
- Reduce time and cost of maintenance works

Our solutions

Our outstanding products increase:

- Drain and regreasing intervals of your equipment
- Wear resistance of friction pairs
- Operation ratio by improving equipment reliability
- Mean time between failures
- Lubrication efficiency solving problems



To ensure the most appropriate application, TotalEnergies works with the major OEM's and has products listed and referenced by Danieli, SMS Group, Primetals, Voestalpine, Siemens, Uralmash.

GREASES

Applications	Product	Working conditions	Specific advantage	Thickener	NLGI grade	BO Viscosity*	Operating temperature range	Specifications / DIN 51502
► Bearings of segment rolls Ladle Turret, Mold, Bender, Segments, Runout Area	Ceran XM 220 XM 460 XM 720	• High loads • High temperatures • Presence of humidity	• Multifunctional greases • Reinforced EP properties • High temperature resistant soap • High mechanical stability in humid atmosphere	Calcium Sulfonate Complex	1.5	220	-30° C to 180° C	KP1/2R-30
					460	-25° C to 180° C	KP1/2R-25	
					720	-25° C to 180° C	KP1/2R-25	
► Foot roll and bender	Altis HV 1	• High temperatures • Low rotation speed	• Recommended for bearings close to billets, with high temperatures and equipped with centralized systems • Very high resistance to oxidation thanks to a non-metallic soap • Ashless soap diminishing the risk of pipe clogging with high temperatures • Longer lifetime in high temperatures	Polyurea	500	-20° C to 180° C	KP2R-20	
► Walking beam	Lical EP 2	• High temperatures • Very slow rotation • High loads	• Multifunctional grease with reinforced performances: • Water resistance thanks to the LiCa soap • Load resistance thanks to adjusted viscosity	Lithium / Calcium	2	190	-25° C to 130° C	KP2K-25
► Cooling bed	Ceran XS 320	• High temperatures • High loads	• High resistance in static position • Synthetic base oil with high resistance to oxidation • Superior pumpability	Calcium Sulfonate Complex	1.5	320	-40° C to 180° C	KP1/2R-40
► Casting ladle bearing	Ceran MS	• High loads • Slow rotation • Heat • Shocks	• High viscosity base oil • Reinforced EP properties • High temperature resistant soap • Presence of solid lubricants	Calcium Sulfonate Complex	1.5	650	-20° C to 180° C	KPF1/2R-20
► Electric engines	Altis EM2	• High velocity	• Longer lifetime • Reduction of vibrations • Thixotropy • Oxidation resistance	Polyurea	2	110	-20° C to 180° C	KP2R-20
► Slew ring	Multis Complex S2A	• Heat	• High protection of bearings at high speed	Lithium Complex	2	120	-25° C to 160° C	KP2P-25
	Copal OGL 0	• Open gears • High loads • Slow rotation	• Strong stickiness to metallic surfaces • Presence of solid lubricants • High viscosity base oil	Aluminium Complex	0-00	> 1000	-20° C to 150° C	OGPF0/00N-20

* The features mentioned above are average values obtained with some variability in production and do not constitute a specification. Above characteristics are mean values given as an information.

OILS

Applications	Product	Nature	Working conditions	Specific advantage	ISO VG	Specifications
► Hydraulic systems Casting Platform, Strand Guide, Runout Area, Maintenance Area	Azolla AF	Mineral	• Presence of water • Heat radiation	• Ashless oil • High resistance to hydrolyze and thermic stability: no deposit formation • Outstanding filterability in humid atmospheres • Longer filter lifetime	22 to 100	ISO 11158 HM • DIN 51524-2 HLP • Eaton I-286S, M-2950S • Denison HF0, HF1, HF2
	Azolla ZS	Mineral			10 to 150	ISO 11158 HM • DIN 51524-2 HLP • Eaton I-286S, M-2950S • Denison HF0, HF1, HF2
► Hydraulic systems affected to high temperatures Ex cut-off Gate	Hydransafe HF DU	Esters based fire resistant fluid	• possibility of an occasional contact with open flame or with liquid steel	• Compatible with mineral oils • Outstanding oxidation stability • Reinforced anti-wear protection	46 / 68	ISO 6743-4 HF DU • Factory Mutual
	Hydransafe HFC 146	Water-Glycol based water resistant fluid		• Higher filterability • High resistance to fire	46	ISO 6743-4 HFC • Danieli • Muller Weingarten
► Mould release oil	Ironcast SY* range	Synthetic	• High temperatures • Less fume • High surface quality of billets	• Prevents sticking with efficient lubrication of the copper mould (even with protection layers). • Helps to decrease the consumption of the oil tanks thanks to its innovative formulation.	50	• Danieli
	Ironcast BIO* 32	Esters based	• Good lubricity	• Excellent lubricity to protect the mould • Biodegradability	32	
► Transmission units	Carter EP / XEP	Mineral		• High protection of gears • Approved by major manufacturers	68 to 1000	ISO 12925 CKC • DIN 51517-3 CLP (grade 1500) • AGMA 9005-E2, NF-F19-809
	Carter HD	Mineral	• Shocks loads • High temperatures	• Micro-pitting resistance • Thermic stability • Longer drain intervals	150 to 680	DIN 51517-3 CLP • ISO 12925-1 CKD
	Carter SH	Synthetic PAO		• Resistant to low or high temperatures • Longer drain intervals	150 to 1000	ISO 12925-1 CKD • DIN 51517-3 CLP Flinger • FAG & SKF
	Carter SG	Synthetic PAG	• High temperatures • High loads • Low friction • Energy savings	• Very high viscosity index • Longer drain intervals	100 to 1000	DIN 51517-3 CLP PG ISO 12925-CKT

