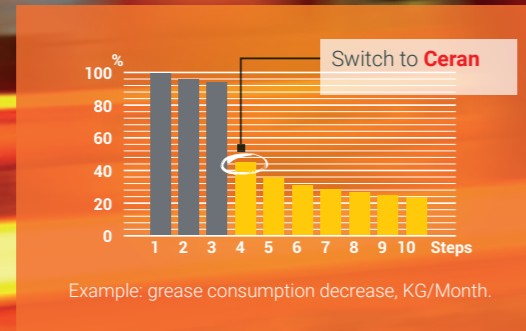
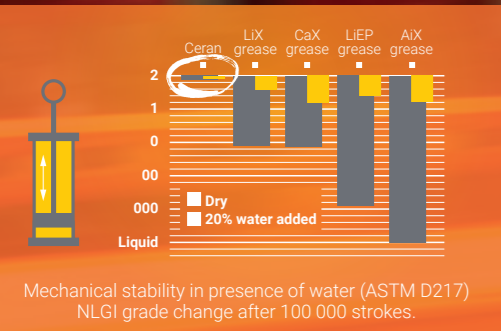


# The benefits offered by TotalEnergies Lubrificants

## 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 Lubrificants has launched the 5<sup>th</sup> 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.

**References & OEMs**  
TotalEnergies Lubrificants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

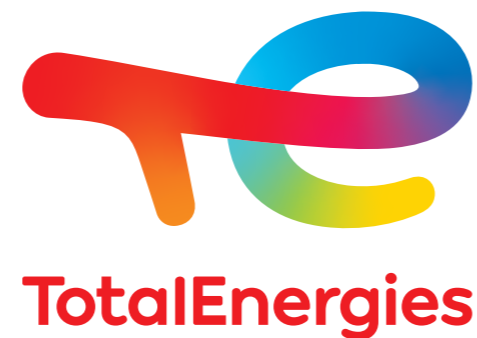


**Innovation & Research**  
TotalEnergies Lubrificants invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.

**Quality and environment**  
TotalEnergies Lubrificants 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



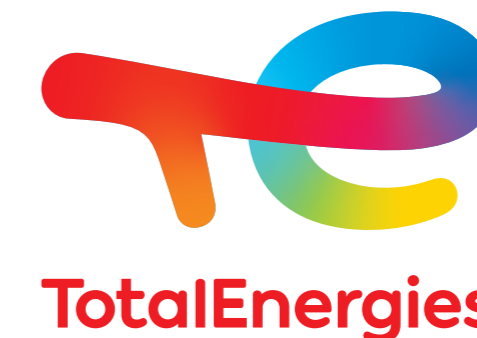
[lubricants.totalenergies.com](https://lubricants.totalenergies.com)

[ms.industry@totalenergies.com](mailto:ms.industry@totalenergies.com)

Safety Data Sheets are available at [ms-sds.totalenergies.com](https://ms-sds.totalenergies.com)



TotalEnergies Industry Solutions





## Your challenges

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

## Our solutions

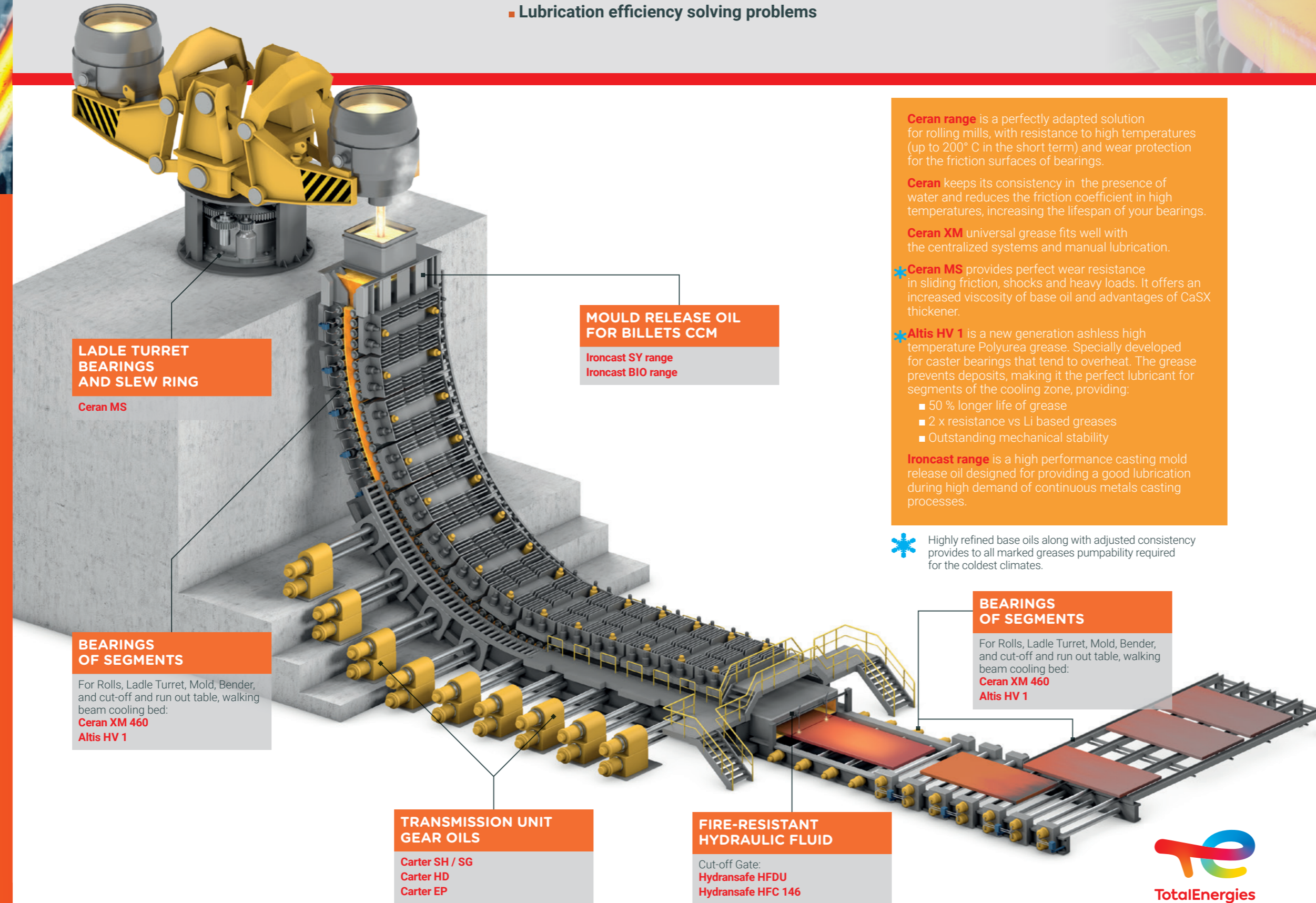
Our outstanding products increase:

- 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

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



**Ceran range** is a perfectly adapted solution for rolling mills, with resistance to high temperatures (up to 200° C in the short term) and wear protection for the friction surfaces of bearings.

**Ceran** keeps its consistency in the presence of water and reduces the friction coefficient in high temperatures, increasing the lifespan of your bearings.

**Ceran XM** universal grease fits well with the centralized systems and manual lubrication.

★ **Ceran MS** provides perfect wear resistance in sliding friction, shocks and heavy loads. It offers an increased viscosity of base oil and advantages of CaSX thickener.

★ **Altis HV 1** is a new generation ashless high temperature Polyurea grease. Specially developed for caster bearings that tend to overheat. The grease prevents deposits, making it the perfect lubricant for segments of the cooling zone, providing:

- 50 % longer life of grease
- 2 x resistance vs Li based greases
- Outstanding mechanical stability

**Ironcast range** is a high performance casting mold release oil designed for providing a good lubrication during high demand of continuous metals casting processes.

❄ Highly refined base oils along with adjusted consistency provides to all marked greases pumpability required for the coldest climates.



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	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 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 Heat	Longer lifetime Reduction of vibrations Thixotropy Oxidation resistance	Polyurea	2	110	-20° C to 180° C	KP2R-20
	Multi Complex SZA							
Slew ring	Capal 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 HFO, HF1, HF2		
	Azolla ZS					ISO 11158 HM DIN 51524-2 HLP Eaton I-286S, M-2950S Denison HFO, HF1, HF2		
Hydraulic systems affected to high temperatures Ex Cut-off Gate	Hydransafe HFDU	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 HFDU Factory Mutual		
	Hydransafe HFC 146	Water-Glycol based water resistant fluid		Higher filterability High resistance to fire	46	ISO 6743-4 HFC Danieli Müller 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 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	Shocks loads High temperatures	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					Micro-pitting resistance Thermic stability Longer drain intervals	150 to 680	DIN 51517-3 CLP ISO 12925-1 CKD
	Carter SH					Resistant to low or high temperatures Longer drain intervals	150 to 1000	ISO 12925-1 CKD DIN 51517-3 CLP Flender 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		

