CASO DE ÉXITO

MOVING YOUR WORLD

Fire-Resistant Hydraulic Fluid in High-Temperature Applications

Sector: Seamless manufacturing of stainless-steel tubes, high-performance alloys and nickel-based superalloys

Application: Safety hydraulic fluid in hot section presses and reduction mills

Solution: HYDROTHERM 42 HFC

Challenge

A leading manufacturer of seamless metal components operating in high-temperature environments was experiencing issues such as cavitation, foam formation, and premature wear in its hydraulic systems. These problems directly impacted the reliability of its presses and reduction mills, where operational safety is critical.

In this and other industries—such as steelmaking, foundry, plastic injection molding, or aluminum casting—hydraulic systems are exposed to extreme temperatures and fire hazards. When selecting a hydraulic fluid, it's not enough to choose one that is merely fire-resistant. Many fluids show slow air release, leading to foam formation, which in turn causes cavitation in pumps, inaccurate level readings, and unplanned shutdowns.

Solution

Our technical team recommended the use of HIDROTHERM HFC 42, a next-generation water-glycol-based HFC safety hydraulic fluid, specifically designed for demanding industrial environments. It offers an optimal combination of fire resistance, component protection, and hydraulic performance, and complies with the most advanced industry standards (ISO 12922, DIN 51502, VDMA 24317).

Benefits

40%
savings in hydraulic fluid consumption

25% - 37%
savings in pump maintenance costs Improved workplace safety

Improved workplace safety
No H304 hazard statement or GHS08 pictogram

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How was the transition carried out?

Throughout the process, the customer received technical support from FUCHS, ensuring:

- No production downtime
- Safe operation in high-temperature zones
- Optimized resource use, maintenance time, and operating costs

The fluid was supplied in bulk tanks, which made it challenging to fully drain the existing hydraulic circuits. To ensure a safe transition:

- The storage tank was drained as much as possible before introducing the new fluid.
- A direct mix between the previous fluid and HYDROTHERM 42 HFC was allowed in the working systems.
- Thanks to the chemical compatibility and stability of the product, no interaction issues or performance disruptions were observed.

Results

- 40% savings in hydraulic fluid consumption
- 25% to 37% savings in new pump usage
- Fast air release: 11 minutes at 50 °C, reducing cavitation risk
- Improved lubrication and thermal stability
- Lower fluid degradation due to shear and operational stress
- Flash point above 260 °C
- Compatible with industrial metals and elastomers
- Enhanced safety for personnel: no H304 hazard statement, no GHS08 pictogram
- Certified biodegradability (OECD301F)

Need more information?

Contact our expert team!

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