# Gulf HARMONY FR HFC

## High performance HFC type fire resistant hydraulic fluids

## Product Description

**Gulf HARMONY** FR HFC oils are HFC type fire-resistant hydraulic fluids, engineered to deliver unmatched reliability where traditional hydraulic oils fall short. These oils offer exceptional fire resistance with superior anti-wear protection, extending equipment life in steel, mining, and die-casting environments. Unlike conventional products, they achieve ultra-low wear rates on demanding pump tests compared to premium mineral and synthetic fluids while ensuring outstanding corrosion resistance in both liquid and vapor phases.

It's stable water-glycol matrix resists phase separation and maintains viscosity consistency, ensuring reliable performance across wide temperature ranges. Fully compatible with modern seal materials and designed for long service intervals, they deliver lower operating costs, reduced downtime, and enhanced operator safety. With its unique balance of safety, durability, and sustainability, these fluids set a new benchmark in fire-resistant hydraulic technology.

## Features & Benefits

- **Unparalleled fire resistance** that meets international standards ensuring **enhanced operational safety**.
- **Ultra-low wear rates** on pumps and valves, ensuring extended equipment life that provide **best component durability**
- **Advanced vapor-phase corrosion inhibition technology** safeguard both submerged and exposed system components, significantly **reducing unplanned downtime and maintenance costs.**
- **Exceptional viscosity stability across wider temperature ranges**, offering smooth operation in steel mills, die-casting plants, mining, and tunneling applications.
- **Very high flash, fire and auto-ignition temperature** ensuring class leading fire resistant properties
- **Fully** compatible with modern seal, paint, and metal materials, it enables **seamless system integration while** enhancing **long-term reliability**.
- Unique balance of fire safety, wear protection, corrosion resistance, and operational stability

## Applications

- Gulf HARMONY FR HFC oils are used for a wide range of applications in the steel-making industry, in foundries, in forging plants, in die-casting machines and in hydraulic presses and wherever pressurized hydraulic fluid leaks pose a fire hazard. These oils also can be considered to be used in sensitive hydraulic applications without compromising the system requirements.
- These oils can be applied in required zones in mining industries prone to fire hazards.
- **Steel mills:** Continuous casters, Blast furnace, Reheating furnace, Casting units, Forging units and related areas
- **Mining & Metallurgy:** Underground or open pit mining equipments, Tunneling equipments, Construction equipments, Forestry equipments, Offshore equipments

**Typical Operating temp. range:** - 20 °C (start-up) to +60 °C (working temperature)
**Typical Operating pr. Range:** up to 200 – 250 bar (new pumps > 350 – 400 bar)

## Specifications, Approvals & Typical Properties

| | | | |
|---|---|---|---|
| ISO Viscosity grades | | 46 | 68 |
| | | | |
| EN ISO 12922, ISO L-HFC (ISO 12922:2020) | | **X** | **X** |
| ISO 6743/4 HFC | | **X** | **X** |
| **Typical Properties** | | | |
| **Test Parameters** | **ASTM Method** | **Typical Values** | |
| Appearance | Visual | Bright & clear | Bright & clear |
| Kinematic Viscosity @40°C, cSt | ASTM D 445 | 46 | 68 |
| Density @15 °C, Kg/l | ASTM D 1298 | 1.076 | 1.076 |
| Pour Point, °C | ASTM D 97 | -45 | -45 |
| Rust characteristics | ASTM D 665A/B | pass | pass |
| Four ball wear scar dia , in mm | ASTM D 4172 | 0.61 | 0.60 |
| 'pH value | ASTM D 1292 | 9.5 | 9.5 |

***Special note:*** *These oils are tested and validated to be compatible with various metals, paints, coating materials as well as elastomers. Additionally, these oils are found to be compatible/miscible with majority of mineral oils, phosphate esters and polyol-ester based hydraulic fluids, however please don't mix the same with any water containing oils as the same might form separation or an incompatible mixture*

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