



Rando[®] HD

Premium Anti-Wear Hydraulic Fluid

Product Data Sheet

Product description

Rando HD are efficient performance anti-wear hydraulic fluids designed for use in both mobile and stationary high pressure hydraulic systems.

Customer benefits

- **Protects equipment**
Robust anti-wear additive package minimizes wear by protecting surfaces when load causes breakdown of the lubricant film.
- **Minimizes downtime**
Rust and oxidation inhibitors help to prevent the production of abrasive particles from rust formation, and deposits, varnishes and sludges from oil breakdown, which can damage equipment surfaces and seals, and block filters prematurely.
- **Smooth operation**
Good hydrolytic stability and water separation characteristics promote excellent filterability in the presence of water contamination. Good anti-foam and air release properties help ensure smooth operation and system efficiency.

Applications

- Industrial hydraulic systems
- Hydraulics of mobile and construction equipment where a water separating oil is required
- Hydraulic systems with vane, gear or piston pumps
- Plastic injection molding machines
- Machine tools
- Enclosed gear systems (dependent on load)
- Industrial circulating systems

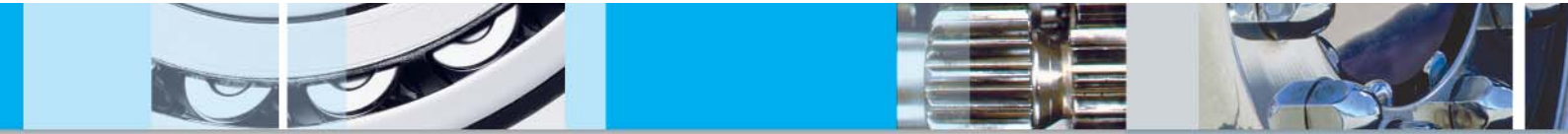
Product highlights:

- Robust anti-wear additive protects equipment
- Rust and oxidation inhibitors help to prevent deposits and minimize downtime
- Good hydrolytic stability and water separation help with smooth operation

A Chevron company product

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Performance standards

Rando HD oils meet the requirements of various industry standards:

- Parker Hannifin (Denison Hydraulics) HF-0 (ISO 32, 46, 68)
- Eaton Vickers I-286-S [industrial applications], M 2950-S [mobile applications] (ISO 32, 46, 68)
- Cincinnati Machine P-68 (ISO 32), P-69 (ISO 68) and P-70 (ISO 46)
- David Brown Industrial Gears 0A (ISO 32), 1A (ISO 46), 2A (ISO 68), 3A (ISO 100), 4A (ISO 150), 5A (ISO 220)
- Bosch Rexroth former specification RE 90220 (ISO 32, 46, 68)
- ISO 6743:1999 Part 4, HM fluid
- ISO 11158:2009, HM
- DIN 51502:1990, HLP fluid (ISO 32, 46, 68, 100)
- DIN 51524:2006-04 Part 2, HLP (ISO 32, 46, 68, 100)
- SAE MS1004 HM (ISO 32, 46, 68, 100)
- US Steel 126 and 127



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continued

Product specifications

RANDO HD							
KEY PROPERTIES	RESULTS						
ISO Viscosity Grade	32	46	68	100	150	220	320
Product Code	520210	520211	520212	520213	520214	520215	520220
Kinematic Viscosity, mm ² /s @ 100°C	5.3	6.8	8.7	11.2	14.8	19.0	24.0
mm ² /s @ 40°C	31	46	67	97	150	220	320
Viscosity Index	103	101	101	101	98	97	95
Flash Point, °C	210	220	226	240	274	274	274
Pour Point, °C	-21	-21	-21	-20	-20	-15	-15
FZG Pass Load Stage	10	10	10	10	10	10	10
Air Release at 50°C, min	4	8	9	12	19	-	-

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Produced by Chevron Lubricants; Africa, Middle East and Pakistan.

Environment, Health and Safety Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit www.caltexoils.com.

For more information, go to www.chevronlubricants.com