



# Rando® HDZ

## Wide Temperature Range Premium Hydraulic Fluid

Product Data Sheet

### Customer benefits

- **Wide temperature application**

Formulated with premium Group II base oils and shear stable viscosity modifier to give high viscosity index, minimizing change in viscosity with temperature, allowing use over a wider range of operating temperatures compared to conventional monograde hydraulic oils.

Improved shear stability of the viscosity modifier minimizes drop in viscosity during service compared to conventional multigrade hydraulic oils, giving better protection to the equipment.

- **Protects equipment**

Contains anti-wear additive which reduce abrasive wear by protecting surfaces when load causes breakdown of the lubricant film.

Effective rust and corrosion inhibitors give excellent protection against corrosion of both steel and copper.

- **Smooth operation**

Good hydrolytic stability and water separation characteristics help prevent deposit formation and rust in the presence of water contamination. Good anti-foam and air release properties ensure smooth operation and system efficiency.

- **Extends oil service life**

Effective oxidation inhibitors reduce oil thickening and deposit formation in service, improving filterability and minimizing the need for unscheduled change of hydraulic fluid.

### Applications

- Industrial hydraulic equipment subject to wide variation in temperatures
- Hydraulics of mobile, construction and agricultural equipment where a water separating oil is required
- Hydraulic systems with vane, gear or piston pumps
- Fork-lift trucks (in refrigerated areas)

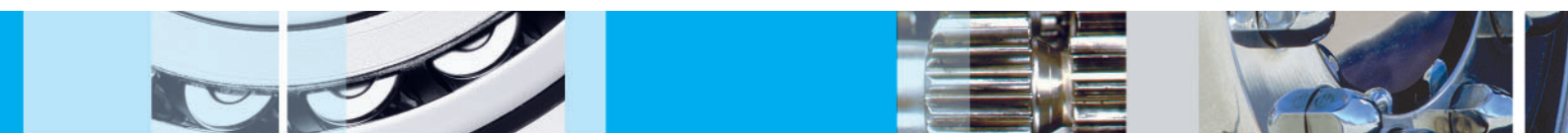
### Product features:

Premium quality, shear stable, multi-viscosity, anti-wear hydraulic fluid, designed to give robust protection for hydraulic systems subjected to wide variations in ambient and operating temperatures.

A Chevron company product

All trademarks are property owned by Chevron Intellectual Property LLC.



- 
- Plastic injection molding machines
  - Marine deck equipment, steering gears, thrusters and automatic controls
  - Machine tools
  - Enclosed gear systems (dependent on load)

## Performance standards

### Rando HDZ oils are approved against:

- Parker Hannifin (Denison) HF-0 (ISO 32, 46, 68)
- Eaton-Vickers 35VQ25A, I-286-S [industrial applications], M-2950-S [mobile applications] (ISO 32, 46, 68)
- Bosch Rexroth Fluid Rating List RDE 90245 for ISO 32, 46, 68 (Rating Number BR-1010-0114 and BR-1010-0124)

### Rando HDZ oils meet the requirements of:

- Bosch Rexroth RE 07 075 (10.05), RE 90 220 (05.10) (ISO 32, 46, 68)
- Fives Cincinnati P-68 (ISO 32), P-69 (ISO 68) and P-70 (ISO 46)
- Arburg (ISO 46 - standard wear requirements)
- JCMAS HK-1 (ISO 32, 46)
- ASTM D6158, HV (ISO 32, 46, 68, 100)
- ISO 6743 (1999) Part 4, Type HV (ISO 15, 32, 46, 68, 100)
- ISO 11158 (2009), HV (ISO 15, 32, 46, 68, 100)
- DIN 51502 (1990), Type HVLP (ISO 15, 32, 46, 68, 100)
- DIN 51524 (2006-04) Part 3, HVLP (ISO 15, 32, 46, 68, 100)



# Rando® HDZ

## Wide Temperature Range Premium Hydraulic Fluid

continued

### Typical test data

RANDO HDZ KEY PROPERTIES	RESULTS				
ISO Grade	15	32	46	68	100
Product Code	520251	520253	520254	520255	520256
Viscosity,					
mm <sup>2</sup> /s @ 40°C	15.7	33.0	46.7	68.7	100.5
mm <sup>2</sup> /s @ 100°C	3.9	6.4	8.3	11.1	14.2
Viscosity Index	144	150	153	154	145
Flash Point, °C	150	204	216	222	236
Pour Point, °C	-60	-49	-47	-42	-37
Zinc Content, mass %	0.047	0.047	0.047	0.047	0.047
FZG, Fail Load Stage	11	12	12	12	12
Oxidation Stability					
Hours to 2.0mg KOH/g TAN, ASTM D943	-	>5000	>5000	>5000	-

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](http://www.caltexoils.com).

For more information, go to [www.chevronlubricants.com](http://www.chevronlubricants.com)