



Rando[®] HDZ

Wide Temperature Range Hydraulic Fluid

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

APPLICATIONS

- Industrial hydraulic equipment subject to wide variation in temperatures
- Hydraulics of mobile, construction and agricultural equipment
- Hydraulic systems with vane, gear or piston pumps
- Fork-lift trucks (in refrigerated areas)
- Plastic injection molding machines
- Marine deck equipment, steering gears, bow thrusters and automatic controls
- Numerically controlled (NC) machine tools
- Enclosed gear systems

PERFORMANCE STANDARDS

- Denison Hydraulics HF-0 (ISO 32, 46, 68)
- Vickers M-2952-S, I-286-S [industrial applications], M-2950-S [mobile applications] (ISO 32, 46, 68)
- Cincinnati Milacron P-68 (ISO 32), P-69 (ISO 68), P-70 (ISO 46)
- Mannesmann Rexroth RE 07 075
- ISO Standard 6743 Part 4, Type HV
- DIN 51524 Part 3
- AAMA Standard 524 Part 3
- US Steel 126 and 127

BENEFITS

- **Wide temperature application**
Shear stable, multi-viscosity characteristics reduce the risk of breakdown in high pressure/high load hydraulic systems which operate over a wide temperature range.
- **Longer equipment life**
Special anti-wear additive package reduces wear by protecting surfaces when load causes breakdown of the lubricant film.
- **Reduced downtime**
Effective rust and oxidation inhibitor system prevents 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.
- **Trouble-free operation**
Good hydrolytic stability and water separation characteristics provide excellent filterability in the presence of water contamination. Good anti-foam and air release properties ensure smooth operation and system efficiency.
- **Extended oil service life**
High oxidation stability resists oil thickening and deposit formation in service, eliminating the need for unscheduled change of hydraulic fluid.

ENVIRONMENT, HEALTH and SAFETY

Information is available on this product in the Caltex Material Safety Data Sheet (MSDS) and Caltex 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.

KEY PROPERTIES

ISO Grade	15	22	32	46	68	100
Air Release @ 50°C, mins	2.0	2.9	3.6	7.5	8.5	11.5
Flash Point, °C	154	190	210	214	220	228
FZG, Pass Load Stage	10	10	10	10	10	10
Pour Point, °C	-42	-36	-36	-33	-33	-27
Viscosity, mm ² /s @ 40°C	15.8	22.5	33.5	44.0	65.0	99.5
mm ² /s @ 100°C	4.0	5.0	6.6	8.0	10.6	14.6
Viscosity Index	155	155	154	154	153	152
Zinc Content, mass %	0.04	0.04	0.04	0.04	0.04	0.04

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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.

