



RANDO[®] HDZ ISOCLEAN[®] CERTIFIED LUBRICANT 15, 22, 32, 46, 68, 100

PRODUCT DESCRIPTION

Rando[®] HDZ ISOCLEAN[®] Certified Lubricants are formulated with premium base oil technology and designed to give robust protection to hydraulic pumps. Chevron ISOCLEAN Certified Lubricants have been certified to meet specified ISO Cleanliness standards at point of delivery using industry leading filtration and testing technology. ISOCLEAN Certified products are the first step for contamination control and maximizing component life.



CUSTOMER BENEFITS

Rando HDZ ISOCLEAN Certified Lubricants deliver value through:

- **Ready to use** — Enables users to meet stringent original equipment manufacturers' cleanliness standards for fill lubricants.
- **Flexibility** — ISO Cleanliness targets can be customized to fit your business application needs.
- **Peace of mind** — Each delivery of Chevron ISOCLEAN Certified Lubricant includes an ISOCLEAN Certificate of Analysis.
- **OE fluid cleanliness requirements** — Customized to meet specific equipment manufacturers' fluid cleanliness requirements.
- **High oxidation stability** — Long service life in high pressure service.
- **Protection against rust and corrosion** — Gives excellent protection against corrosion of both copper and steel. Passes the ASTM D665A distilled water rust test and ASTM D665B salt water rust test.
- **High viscosity index** — Minimum change in viscosity over a wide range of operating temperatures.

Product(s) manufactured in the USA.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

A **Chevron** company product

© 2008-2019 Chevron U.S.A. Inc. All rights reserved.

Chevron, the Chevron Hallmark, Rando and ISOCLEAN are trademarks owned by Chevron Intellectual Property LLC. All other trademarks are property of their respective owners.

- **Foam inhibition** — Contains special foam suppressant.
- **Excellent antiwear properties** — Provides excellent wear protection.
- **Good stability** — in the presence of water in the ASTM D2619 Hydrolytic Stability Test and in the presence of copper and steel in the MAG Cincinnati Machine Thermal Stability Test.
- **Fast water separation** — Protects against rust problems by fast release of water.
- **Good filterability** — Excellent thermal and hydrolytic stability helps prevent formation of deposits which may interfere with filtration in equipment having close tolerances.

FEATURES

Rando HDZ ISOCLEAN Certified Lubricants incorporate antiwear additives, oxidation and corrosion inhibitors, foam and aeration suppressants, and a shear stable viscosity index improver.



Hydraulic systems, due to the nature of their operation, experience accelerated wear unless they are protected by clean, high quality antiwear hydraulic oils. Surging pressures in pumps and valves can increase metal-to-metal contact unless antiwear protection is present. The antiwear additives in Rando HDZ ISOCLEAN Certified Lubricants plate out on the metal surfaces. This plating minimizes metal-to-metal contact, which is most severe in vane-, piston-, and gear-type pumps. As hydraulic pressures increase over 1000 psi, the need for antiwear protection increases proportionally.

1 January 2019
IO-174 ISOCLEAN

In laboratory efficiency testing, Rando® HDZ ISOCLEAN® Certified Lubricants provided up to 5% improvement in overall hydraulic pump efficiency when compared to a typical monograde hydraulic oil like Hydraulic Oil AW (a lower VI product with VI<105).

APPLICATIONS

Rando HDZ ISOCLEAN Certified Lubricants are versatile lubricants available in multiviscosity ISO 15, 22, 32, 46, 68 and 100 grades. The multiviscosity feature promotes even and continuous power transmission over a wide temperature range with a minimum of shudder, and maximum accuracy.

They are recommended for hydraulic or circulating oil systems, including marine on-deck machinery, hydraulic actuated loading bins, or equipment that require a wider operating temperature as compared to a single viscosity grade oil.

Rando HDZ ISOCLEAN Certified Lubricants are approved for:

- **Eaton-Vickers** I-286-S, M-2950-S, 35VQ25A (ISO 32, 46, 68)
- **Fives Cincinnati** (formerly MAG Cincinnati, Cin Machine, Cin Milacron) P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- **Parker Hannifin (Denison)** HF0, HF1, HF2, using T6H20C pump (ISO 32, 46, 68)

Rando HDZ ISOCLEAN Certified Lubricants meet the requirements of:

- **Arburg** (ISO 46)
- **ASTM** D6158, HV (ISO 15, 22, 32, 46, 68, 100)
- **Bosch Rexroth** former specification RE 90220-01 (ISO 32, 46, 68)
- **DIN** 51524-3 (ISO 15, 22, 32, 46, 68, 100)
- **Frank Mohn, Framo** hydraulic cargo pumping (ISO 46)
- **ISO** 11158 L-HV (ISO 15, 22, 32, 46, 68, 100)
- **JCMAS** HK-1 (ISO 32, 46)

In a clean, dry environment, Rando HDZ ISOCLEAN Certified Lubricants 15, 22, 32, 46, 68 and 100 typically meet a dielectric strength of 35 kV^a (ASTM D877^b).

Refer to the service manual of the equipment to ensure that the minimum fluid viscosity requirements are met at the highest operating temperature. Please consult

with your equipment manufacturer if equipment is operating outside normal operating conditions.

Do not use in high pressure systems in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Consult with your Chevron Lubricant Representative or Chevron ISOCLEAN Certified Lubricants Marketer to set specific ISO Cleanliness targets for your business application.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

TYPICAL TEST DATA

ISO Grade	15	22	32	46	68	100
Product Number	278064	278065	254609	254610	254611	274323
SDS Number						
U.S.	23543	42265	23537	23537	23537	23537
Canada	23544	42266	23538	23538	23538	23538
Mexico	23545	42267	23529	23529	23529	23539
API Gravity	28.4	31.7	33.1	32.2	31.1	30.9
Viscosity, Kinematic						
cSt at 40°C	16.0	22.5	32.0	46.0	68.0	100.0
cSt at 100°C	3.9	5.1	6.3	8.2	11.0	14.2
Viscosity, Saybolt						
SUS at 100°F	81.4	108	150	214	316	464
SUS at 210°F	39.1	43.0	46.9	53.1	62.8	74.8
Viscosity Index	140	160	153	153	154	145
Flash Point, °C(°F)	150(302)	188(370)	220(428)	216(420)	212(414)	232(450)
Pour Point, °C(°F)	-54(-65)	-53(-63)	-50(-58)	-45(-49)	-42(-44)	-39(-38)
Brookfield Viscosity, ASTM D2983, cP at -20°C	500	750	1290	2330	4450	8040
Brookfield Viscosity, ASTM D2983, cP at -30°C	1660	2340	4900	9120	19300	—
Brookfield Viscosity, ASTM D2983, cP at -40°C	6920	9120	25100	—	—	—
Oxidation Stability Hours to 2.0 mg KOH/g acid number, ASTM D943	—	—	>5000	>5000	>5000	>3000
Dielectric Strength, kV ^a , ASTM D877 ^b	35	35	35	35	35	35

a Dielectric strength value applies only to "point of manufacture" of packaged products produced at a Chevron manufacturing facility. (Does not apply to bulk packaging). The oil will quickly lose its high dielectric strength value when exposed to contamination and to very small amounts of moisture and water.

b Industry standard test method for measuring kV values is not precise and test results can differ significantly.

Minor variations in product typical test data are to be expected in normal manufacturing.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.