

## RENOLIN ZAF 15 LT RENOLIN ZAF 32 LT

### Zinc- and ash-free hydraulic fluids with extremely high viscosity index (HVI, low temperature hydraulic and lubrication oil)

#### Description

RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT are newly developed zinc- and ash-free low temperature hydraulic and lubrication oils. Both products have an extremely high viscosity index. RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT contain additives which enlarge the lifetime and improve the ageing stability. Machine components, hydraulic systems are protected against corrosion (steel, copper and non-steel components) through the use of RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT. The products are demulsifying (water separating) low temperature hydraulic fluids. They fulfill and surpass the requirements according to DIN 51524-3, HVLP.

RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT have an extremely high viscosity index which is guaranteed by the selected base oils in combination with high performance additives. These products have extremely good low temperature properties and provide excellent low temperature flowability at very low temperatures. RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT have an extremely low pourpoint for the use at very low temperatures. Synergistically acting antiwear additives protect the system and components from wear.

#### Application

RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT are demulsifying, water separating low temperature hydraulic and lubrication oils for the general use in circulating systems, in bearings and in hydraulic systems. The products are especially recommended for all kind of application in mobile and stationary hydraulic equipments where the use of a low temperature HVLP hydraulic oil is required. The products guarantee a wide application window and surpass the requirements according to DIN 51524-3 of a multigrade hydraulic fluid.

#### Advantages

- Low foaming
- Good air release properties
- High ageing stability
- Good corrosion protection, steel and copper
- Excellent wear protection
- Very good viscosity temperature behaviour, very high viscosity index
- Excellent low temperature properties, PP < -60 °C
- Wide temperature range
- New zinc- and ash-free additive technology

#### Specifications

RENOLIN ZAF 15 LT and RENOLIN ZAF 32 LT fulfill and surpass the following requirements:

- DIN 51524-3: HVLP
- ISO 6743-4: HV

Exclusively produced for  
LUKOIL MARINE LUBRICANTS

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Typical technical data:

| Product name                  |                       | RENOLIN ZAF 15 LT | RENOLIN ZAF 32 LT |                 |
|-------------------------------|-----------------------|-------------------|-------------------|-----------------|
| Properties                    | Unit                  |                   |                   | Test method     |
| Kinematic viscosity           |                       |                   |                   | DIN EN ISO 3104 |
| at - 54 °C                    | mm <sup>2</sup> /s    | 2380              | -                 |                 |
| at - 40 °C                    | mm <sup>2</sup> /s    | 460               | 4850              |                 |
| at - 20 °C                    | mm <sup>2</sup> /s    | 86.6              | 625               |                 |
| at - 10 °C                    | mm <sup>2</sup> /s    | 54.8              | 190               |                 |
| at 0 °C                       | mm <sup>2</sup> /s    | 39.3              | 125               |                 |
| at 40 °C                      | mm <sup>2</sup> /s    | 14.0              | 31                |                 |
| at 100 °C                     | mm <sup>2</sup> /s    | 5.30              | 8.7               |                 |
| Viscosity index               | -                     | 387               | 281               | DIN ISO 2909    |
| Density at 15 °C              | kg/m <sup>3</sup>     | 873               | 869               | DIN 51757       |
| Flash point                   | °C                    | > 90              | 155               | DIN ISO 2592    |
| Pourpoint                     | °C                    | < -60             | < -60             | DIN ISO 3016    |
| Neutralisation number         | mgKOH/g               | 0.2               | 0.2               | DIN 51558-1     |
| Air release at 50 °C          | min                   | 2                 | 3                 | DIN ISO 9120    |
| A/8.3/90<br>FZG gear test rig | failure load<br>stage | > 10              | > 10              | DIN ISO 14635-1 |

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The information contained in this product information is based on the experience and know-how of FUCHS SCHMIERSTOFFE GMBH in the development and manufacturing of lubricants and represents the current state-of-the-art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pre-treatment, possible external contamination, etc. For this reason, universally-valid statements about the function of our products are not possible. Our products must not be used in aircrafts/spacecrafts or their components, unless such products are removed before the components are assembled into the aircraft/spacecraft. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

We therefore recommend that you consult a FUCHS SCHMIERSTOFFE GMBH application engineer to discuss application conditions and the performance criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care.

Our products undergo continuous improvement. We therefore retain the right to change our product program, the products, and their manufacturing processes as well as all details of our product information sheets at any time and without warning, unless otherwise provided in customer-specific agreements. With the publication of this product information, all previous editions cease to be valid.

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