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Eickhoff Antriebstechnik GmbH D-44782 Bochum

LUKOIL Lubricants Co
z.Hd. Mr. Kirillov Stepan

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119180 Moscow Russia

Von: P.Kossack-Döhmann
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Datum: 07.03.2016

Approval for LUKOIL STELLO for the application in Eickhoff gearboxes

Dear Mr. Kirillov,

attached you will find the approval of the lubricant LUKOIL STEELO for the application in Eickhoff industrial gearboxes.

With kind regards

Eickhoff
Antriebstechnik GmbH

i.A. Petra Kossack-Döhmann

i.V Dr.- Ing. Frank Krull

Anlagen: Recommendation LUKOIL STELLO

Baden-Württembergische Bank
BLZ 600 501 01
Konto 0001507791
IBAN: DE18600501010001507791
SWIFT-BIC: SOLADEST

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Konto 0000086502
IBAN: DE83300600100000086502
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Sitz der Gesellschaft
Bochum
Amtsgericht
Bochum HRB 6815

Aufsichtsratsvorsitzender:
Dipl. Wirtschaftsing. Diether Klingenberg
Geschäftsführer:
Dr.-Ing. Ralf G. Wittor
Dipl.-Oec. Rainer Lohmann

LUKOIL Lubricants Co
6 Malaya Yakimanka str.
119180 Moscow
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Performance test results for LUKOIL STEELO

The gearbox oil passed all test requirements according to Eickhoff QSV No. 19.0002. Table 1 give an overview of the test results

Table 1: Test results according to QSV No. 19.0002

1	Compatibility with 2 compound gearbox inside painting (B3383FL*)	pass	✓
2	Compatibility with sealing material 72NBR902 DIN 53521 (dyn.)	pass	✓
3	Compatibility with sealing material 75FKM585 DIN 53521 (dyn.)	pass	✓
4	Compatibility with sealing material 72NBR902 DIN 3761 (stat.)	pass	✓
5	Compatibility with sealing material 75FKM585 DIN 3761 (stat.)	pass	✓
6	Friction test for rubber sealing	not performed	✓
7	Compatibility with Liquid sealings Loctite 128068	pass	✓
8	Compatibility with Liquid sealings Loctite 510 **	pass	✓
9	Micro pitting test acc. to FVA Inf.Bl. z. d. Vorh. 54/I-IV bei 90°	GFT>10	✓
10	FZG-Scuffing test acc. to DIN 51354-2 (A/8.3/90)	>12	✓
11	FZG-Scuffing test acc. to DIN 51354-2 (A/16.6/140)	>12	✓
12	FE8-bearing wear test acc. to DIN 51819-3	pass	✓

Fails specification

✗

Meets specification

✓

The lubricant LUKOIL STEELO meets requirements of the Eickhoff QSV19.0002 as listed within table 1.

In accordance to its manufacturer conformity declaration LUKOIL STEELO warrants that the test samples are representative for all serial products which are available worldwide under the label LUKOIL STEELO.

In accordance to its manufacturer conformity declaration LUKOIL STEELO warrants a suitable aging and oxidation stability. The test results must not only be valid for fresh oil.

Relevant criteria are

1. Damage load stage > 12 for the scuffing test according to DIN 51354-Teil2 (A/8.3/90)
2. Micropitting damage load stage = 10 according to QSV Nr. 19.0002 and the FVA-Information sheet of research projects No. 54/I-IV

In case of any disagreements the test results of neutral research laboratories shall be accepted. The change interval for used oils are recommended to be serviced after 2 years in operation.

Eickhoff Antriebstechnik GmbH shall be informed in case of changes within the product tolerances, the oiltype or at single viscosity grades. The consequence on test results and approval criteria have to be assured by LUKOIL Russia. Eickhoff Antriebstechnik GmbH keeps the right to require new tests to prove the conformity according to Eickhoff QSV19.0002.

In accordance to its conformity declaration LUKOIL STEELO warrants that the oil is produced according to the specified formulation. The production process shall be allowed to be audited at any time.

This recommendation or the confirmation of test results will not allow customers of Eickhoff Antriebstechnik GmbH to bring up warranty claims against Eickhoff Antriebstechnik GmbH for the use of this oil. This is in exception of cases in which Eickhoff is the supplier of the oil. In those cases the warranty for the oil as part of the gearbox will be invalid after one year.

This Recommendation is valid until March 2021.

Eickhoff Antriebstechnik GmbH



i.A. P.Kossack-Döhmann



i.V. Dr.-Ing. Frank-D. Krull