

Data Sheet - ATF for DIWA Transmissions

1) General Data

| | |
|---|--|
| Product Marketer | OOO LLK-International |
| Product Brand Name | LUKOIL ATF SYNTH MULTI |
| Unique oil code | CONFIDENTIAL |
| Rebrand of | |
| Reblend of | CONFIDENTIAL |
| GM-Dexron License Number in case of Rebrand/Reblend GM-Dexron License No. of Original | GM IIIH, IIIG & IID |
| Mercon License Number in case of Rebrand/Reblend Mercon License No. of Original | Ford Mercon® V |
| Market region | <input checked="" type="checkbox"/> Europe <input type="checkbox"/> North America <input checked="" type="checkbox"/> Asia <input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> South America <input checked="" type="checkbox"/> Oceania |

2) Contents

| Base oil | Mass % | API Group | Supplier and Code | Kin. Visc. @ 100°C |
|------------|--------|-----------|-------------------|--------------------|
| Base oil 1 | | | CONFIDENTIAL | mm ² /s |
| Base oil 2 | | | | mm ² /s |
| Base oil 3 | | | | mm ² /s |
| Base oil 4 | | | | mm ² /s |

| Additive | Mass % | Type | Supplier and Code |
|------------|--------|------|-------------------|
| Additive 1 | | | CONFIDENTIAL |
| Additive 2 | | | |
| Additive 3 | | | |
| Additive 4 | | | |

Mass sum 100 must be 100

| | | | | | | | |
|------------|----|--------------|-----|------------|----|--------------|-----|
| Phosphorus | P | CONFIDENTIAL | ppm | Sodium | Na | CONFIDENTIAL | ppm |
| Boron | B | | ppm | Barium | Ba | | ppm |
| Calcium | Ca | | ppm | Potassium | K | | ppm |
| Silicon | Si | | ppm | Magnesium | Mg | | ppm |
| Zinc | Zn | | ppm | Molybdenum | Mo | | ppm |

3) Physical Properties

| | | | |
|-------------------------------------|-----------------|-------|--------------------|
| <u>Kinematic Viscosity @ 40°C</u> | DIN 51562 | 34,9 | mm ² /s |
| <u>Kinematic Viscosity @ 100°C</u> | DIN 51562 | 7,61 | mm ² /s |
| <u>Viscosity Index</u> | DIN ISO 2909 | 196 | - |
| <u>Brookfield Viscosity @ -40°C</u> | DIN 51398 | 9600 | mPa·s |
| <u>Density @ 15°C</u> | DIN 51757 | 840,8 | kg/m ³ |
| <u>Pour Point</u> | DIN ISO 3016 | -45 | °C |
| <u>Flash Point</u> | DIN EN ISO 2592 | 228 | °C |
| <u>Fire Point</u> | DIN EN ISO 2592 | 250 | °C |
| <u>Total Acid Number</u> | ASTM D 664 | 1,3 | mg KOH/g |

4) Test Results

FZG-Test A/8,3/90 - Scuffing Load Capacity

| | | | |
|---------------------------|-----------|-----|----|
| <u>Failure Load stage</u> | DIN 51354 | >12 | KS |
|---------------------------|-----------|-----|----|

Shear stability

| | | | |
|------------------------------------|---------------------|-------|--------------------|
| <u>KV100 after 20 h KRL @ 60°C</u> | DIN 51350-6 – KRL/C | 6,522 | mm ² /s |
|------------------------------------|---------------------|-------|--------------------|

Compatibility with Sealing Material DIN ISO 1817 (Freudenberg-Test)

Change of Volume and Hardness with ACM and FPM after 168 h @ 95°C and 150°C

Test pieces Ø 36mm, thickness 2 mm

| | 168 h / 95°C | 168 h / 150°C |
|---------------------------------|--------------|---------------|
| ACM 80 | | |
| <u>Change of Shore Hardness</u> | -2,3 | -0,7 |
| <u>Change of Volume</u> | 2,28 % | 1,53 % |
| FPM 80 | | |
| <u>Change of Shore Hardness</u> | -4 | -1 |
| <u>Change of Volume</u> | 1,86 % | 1,92 % |
| 75 FKM 585 (Freudenberg) | | |
| <u>Change of Shore Hardness</u> | 0 | 2 |
| <u>Change of Volume</u> | 1,39 % | 2,14 % |

5) IR-Diagram

Diagram in transmittance layout to be enclosed.

6) Sample

ONLY for approvals for North America a 1 pint sample to be sent to Voith Turbo Inc. USA (see 8.)

7) Contact Person

| | |
|-----------|--|
| Name | Alina Arzamastseva |
| Phone | CONFIDENTIAL |
| Fax | |
| E-mail | alina.arzamastseva@lukoil.com |
| Address | 6 Malaya Yakimanka str., 119180 Moscow, Russia |
| Date | 06.11.2015 |
| Signature |  |

8) Contacts Voith

Voith Turbo GmbH & Co. KG
Bus Drive Systems
Alexanderstr. 2
89522 Heidenheim - Germany

Dr. Helmut Krieger
Phone +49 7321 37 8245
Fax +49 7321 37 7690
E-mail helmut.krieger@voith.com

Voith Turbo Inc.
DIWA Bus Transmissions
25 Winship Road
York, PA 17402 - USA

Mark Bair
Phone +1 717 767 3254
Fax +1 717 767 3210
E-mail mark.bair@voith.com

9) General Conditions

If the approval is granted the product will be added to the respective Voith approval list
The approval is limited to 24 months. For re-approval the ongoing production and marketing of the product has to be re-confirmed by signed letter sent to Voith prior to expiration.
The approval can be withdrawn by Voith at any time without stating any reason.
Any change of the product has to be indicated immediately and will terminate the approval.

Approval

Product Marketer OOO LLK-International
Product Brand Name LUKOIL ATF SYNTH MULTI
Unique oil code CONFIDENTIAL

Not Approved

Approved for

Voith Approval List

H55.6335.xx - Standard Drain Intervals

H55.6336.xx - Extended Drain Intervals

US SB 013/118 - Standard Drain Intervals

US SB 013/118 - Extended Drain Intervals

Approval Date 2016-03-16

Expiration Date 2018-03-15

Name Dr. Burr

Signature 

Mr. Mondorf



Re-Approval

Re-Approval Date _____

Expiration Date _____

Name _____

Signature _____

Re-Approval Date _____

Expiration Date _____

Name _____

Signature _____

Re-Approval Date _____

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Name _____

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