

High-tech safety for gearboxes



Contact:



Gear oils for passenger cars and commercial vehicles 2/2011

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08/2011



Gear oils for passenger cars.

For problem-free operation over the entire life of the vehicle, passenger car gearboxes today need high-performance lubricants which protect against wear and significantly increase shifting comfort. In addition, extending oil change intervals up to the life of the vehicle make considerable demands on the quality of the oils.

As the long-term development partner of the world's leading gearbox manufacturers, we operate at the leading edge of technology.

***Go for quality and reliability.
Go for FUCHS.***

The information contained in this product information is based on the experience and know-how of FUCHS EUROPE 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. 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 EUROPE 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.

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***TITAN SINTOFLUID –
for passenger car
manual gearboxes
TITAN SINTOPOID –
for passenger car
differentials***

TITAN **SINTOFLUID FE** **SAE 75W**

Premium gear oil offering increased gearbox efficiency in passenger cars due to low viscosity level. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill-for-life fluid according to manufacturer.

Specifications*:
API GL-4

Approvals*:
-

FUCHS recommendations:
VW TL 521 71
(G 052 171 A1/A2)
VW TL 521 78 (G 052 178 A2),
VW TL 525 12 (G 052 512 A2),
VW TL 726
(G 052 726 A2/ G 055 726 A2/
G 060 726 A2/ G 070 726 A2)



TITAN **SINTOPOID FE** **SAE 75W-85**

Premium gear oil offering increased gearbox efficiency in passenger cars due to low viscosity level, formulated with fully-synthetic base oils. Reduces fuel consumption and offers best properties at low temperature. Suitable as fill-for-life fluid according to manufacturer.

Specifications*:
API GL-5

Approvals*:
MB-APPROVAL 235.7
ZF TE-ML 18

FUCHS recommendations:
ALFA ROMEO
BMW
FIAT
LANCIA
VW TL 521 45-X (G 052 145 A1)
VW TL 521 90 (G 052 190 A2/
G 055 190 A2)



TITAN **SINTOFLUID** **SAE 75W-80**

Premium gear oil for passenger cars offering good gearbox efficiency. Good cold start behaviour. Suitable as fill-for-life fluid according to manufacturer.

Specifications*:
API GL-5

Approvals*:
-

FUCHS recommendations:
MIL-L-2105 D
ALFA ROMEO
BMW 83 22 0 309 031
BMW 83 22 0 403 247
BMW 83 22 7 533 818
BMW 2300 1434 404
BMW 2300 7533 513
BMW 2300 7533 818
CITROËN
FIAT
FORD M2C200-C/ C2/ C3
LANCIA
OPEL 19 40 182,
19 40 757, 19 40 768, 19 40 776
PEUGEOT
RENAULT
VOLVO 97308
VW 501 50
(G 005 000 05/ G 005 000/
G 005 000 20/ G 052 911 A1/A2)

TITAN **SINTOPOID** **SAE 75W-90**

Premium gear oil for passenger cars offering good gearbox efficiency. Suitable for high-offset hypoid drives. Suitable as fill-for-life fluid according to manufacturer.

Specifications*:
API GL-5

Approvals*:
-

FUCHS recommendations:
MIL-L-2105 D
BMW
VW TL 521 45-Y
(G 052 145 A2)

TITAN **SINTOPOID LS** **SAE 75W-90 | 75W-140**

Premium gear oil for axle and transfer gearboxes, formulated with fully-synthetic base oils. Offers best cold start behaviour. Suitable for axle and transfer gearboxes with and without limited slip differential. SINTOPOID LS 75W-90 is suitable as trouble shooter for conventional manual transmissions.

Specifications*:
SAE 75W-90 LS:
API GL-4/-5/-5 incl. LS
SAE 75W-140 LS:
API GL-5

Approvals*:
-

FUCHS recommendations:
SAE 75W-90 LS:
VW GL50 / G51
SAE 75W-140 LS:
BMW 83 22 2 282 583, 83 22 9 407 870
CHRYSLER MS-8985
FORD M2C192-A, GM 12346140
JOHN DEERE JDM J 11 G
SCANIA STO 1:0

***Gear oils
for mixed fleets.***



Reduce your operating costs: By using mixed fleet products in your vehicle park.

***FUCHS has developed special gear oils for the wide variety of gearboxes in cars and trucks.
To reduce the chances of incorrect filling.
To reduce stock-keeping.
And ultimately, to reduce operating costs.***

Choose FUCHS rationalisation products.

TITAN
SUPERGEAR MC
SAE 80W-90

Super high-performance gear oil based on MC-synthesis for extended oil change intervals.

Specifications*:

API GL-4/GL-5
SCANIA STO 1:0

Approvals*:

MAN M 3343 TYPE M
MB-APPROVAL 235.0
ZF TE-ML 02B, 05A, 12E, 16B,
17B, 19B, 21A

FUCHS recommendations:

CASE MS 1316
FORD M2C197-A
JOHN DEERE JDM J 11 E
NH 520 A
SDFG OP 1705
STEYR B-101
ZF TE-ML 07, 08

TITAN
SUPERGEAR MC
SAE 80W-140

Super high-performance gear oil based on MC-synthesis for extended oil change intervals.

Specifications*:

API GL-4/GL-5
SCANIA STO 1:0

Approvals*:

–

FUCHS recommendations:

JOHN DEERE JDM J 11 E
OPEL 19 42 386
RENAULT VI
ZF TE-ML 08

TITAN
GEAR LS
SAE 90

High-performance LS (Limited Slip) hypoid gear oil for axles in commercial vehicles and passenger cars with or without limited slip differentials.

Specifications*:

API GL-5

Approvals*:

ZF TE-ML 05C, 12C, 16E, 21C

FUCHS recommendations:

MIL-L-2105 D
FORD M2C104-A
JOHN DEERE JDM J 11 F
LIEBHERR
NH 520 B

TITAN
GEAR MP
SAE 80

High-performance gear oil for synchronized and non-synchronized manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.

Specifications*:

API GL-4

Approvals*:

MAN 341 TYPE E1
MAN 341 TYPE Z1
MB-APPROVAL 235.1
ZF TE-ML 02A, 17A

FUCHS recommendations:

BMW 81 22 9 407 052
BMW 81 22 9 407 053
EATON
FORD M2C9008-A
VW TL 726
ZF TE-ML 08

TITAN
GEAR MP
SAE 90

High-performance gear oil for synchronized and non-synchronized manual gearboxes as well as auxiliary drives, axles and differentials in commercial vehicles and passenger cars.

Specifications*:

API GL-4

Approvals*:

MAN 341 TYPE Z1

FUCHS recommendations:

–

TITAN
GEAR HYP
SAE 90

High-performance gear oil for highly-stressed differentials in commercial vehicles and passenger cars.

Specifications*:

API GL-5

Approvals*:

MAN 342 TYPE M1
MB-APPROVAL 235.0
ZF TE-ML 05A, 16C, 17B, 19B,
21A

FUCHS recommendations:

FORD M2C9102-A
JOHN DEERE JDM J 11 E
OPEL 19 42 387
VW TL 727
ZF TE-ML 07, 08

***Gear oils
for trucks.***

Commercial vehicle gearboxes are subject to all sorts of loads. Urban driving puts different demands on the gearbox and its oil than long-distance haulage. As perfect and reliable function is a must – down-time can be ruinously expensive – the gear oil used must be perfectly matched to the gearbox and all of its application parameters. Make no compromises. Rely on the leading OEM supplier.



***Heavy-duty gear oils for
heavy-duty applications.
Never make compromises
in the commercial sector.***

TITAN
CYTRAC SL
SAE 75W-90

Premium gear oil for highly-stressed hypoid axles in commercial vehicles formulated with fully-synthetic base oils. Developed for the longest oil change intervals in commercial vehicle axle drives.

Specifications*:
API GL-5
SCANIA STO 1:0

FUCHS recommendations:
JOHN DEERE JDM J 11 E/G
VOLVO 97312
ZF TE-ML 07, 08

Approvals*:
MAN 342 TYPE S1
MB-APPROVAL 235.8
ZF TE-ML 05B, 12B, 16F, 17B

TITAN
CYTRAC MB SYNTH
SAE 75W-90

Premium gear oil for extended drain intervals in commercial vehicles, specially developed for Mercedes-Benz Actros vehicles, formulated with fully-synthetic base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals.

Specifications*:
API GL-4

FUCHS recommendations:
ZF TE-ML 08

Approvals*:
MAN 341 TYPE MB
MB-APPROVAL 235.11

TITAN
CYTRAC MAN SYNTH
SAE 75W-80

Premium gear oil for extended drain intervals in commercial vehicles manual gearboxes, specially developed for manual and automatic ZF-gearboxes, formulated with fully-synthetic base oils. Reduces fuel consumption by improving gearbox efficiency. Suitable for the longest oil change intervals.

Specifications*:
API GL-4

FUCHS recommendations:
DAF
EATON
IVECO
RENAULT
VOLVO 97307

Approvals*:
MAN 341 TYPE Z4
ZF TE-ML 02L, 16K

TITAN
CYTRAC LD
SAE 75W-80

Ultra high-performance gear oil for extended oil change intervals in commercial vehicles fitted with integral retarders or supplementary retarders.

Specifications*:
API GL-4

Approvals*:
EATON
MAN 341 TYPE E3

FUCHS recommendations:
DAF
MAN 341 TYPE Z3
VOLVO 97305
ZF TE-ML 02D, 08

TITAN
CYTRAC HSY
SAE 75W-90

Ultra high-performance gear oil for commercial vehicle manual transmissions and axle drives formulated with fully-synthetic base oils.

Specifications*:
API GL-4/GL-5

Approvals*:
ZF TE-ML 05B, 12B, 16F, 17B,
19C, 21B

FUCHS recommendations:
DAF
MAN M 3343 TYPE S
JOHN DEERE JDM J 11 E/G
SCANIA STO 1:0
ZF TE-ML 07

TITAN
GEAR HYP LD
SAE 80W-90

Super high-performance axle oil specially developed for Mercedes-Benz commercial vehicles. Offering enhanced thermal stability and fuel-economy potential.

Specifications*:
API GL-5
API MT-1

Approvals*:
MAN 342 TYPE M2
MB-APPROVAL 235.20
ZF TE ML 05A, 12E, 16B, 17B,
19B, 21A

FUCHS recommendations:
MIL-PRF-2105 E
ARVIN MERITOR AXLES
MACK GO-J
JOHN DEERE JDM J 11 E
SCANIA STO 1:0
ZF TE-ML 07A

How to find the right gear oil.

API Classifications

The American Petroleum Institute (API) created a classification system for gear oils based on application conditions and the type of gears most commonly used. The presence of frictional systems such as clutches or synchromesh rings in gearboxes as well as sealing material compatibility or component wear are not considered. API gear oil classifications are now internationally recognised and used.

API	Application conditions	Gearbox type
GL-4 invalid!	high rotational speed/low torque or low rotational speed/high torque, limited sliding portion	highly loaded manual gearboxes, mild hypoid axle drives, moderate axle off-sets
GL-5 valid!	high rotational speed and shock-loading, high rotational speed/low torque or lowrotational speed/high torque	hypoid axle drives, highly loaded drives with large axle off-sets, very highly loaded manual transmissions
MT-1 valid!	spur gear, dog-engaged gearboxes	non-synchromesh manual transmissions

US Military Specifications

The US Military authorities have created their own gear oil specifications which are sometimes also used for civilian application

MIL Specification	Status	API Performance	SAE Grades
MIL-L-2105 B	Introduced in 1962. Superseded by MIL-L-2105 C.	API GL-5	SAE 80 SAE 90 SAE 140
MIL-L-2105 C	Introduced in 1976. Superseded by MIL-L-2105 D.	API GL-5	SAE 75W SAE 80W-90 SAE 85W-140
MIL-L-2105 D	Introduced in the 2nd half 1987.	API GL-5	SAE 75W SAE 80W-90 SAE 85W-140
MIL-PRF-2105 E	Introduced in 1997: As MIL-L-2105 D with additional suitability for non-synchromesh, manual gearboxes. Replaces A-D	API GL-5 API MT-1	SAE 75W SAE 80W-90 SAE 85W-140
SAE J2360	Civil version of MIL-L-2105 E.	see above	see above

Approvals by manufacturers

MACK Application area

GO-H	Axle oils, e.g. SAE 90, SAE 140, SAE 80W-90 and SAE 85W-140
GO-J	Gear oil, axle oil, normal drain interval (up to 250,000 miles/3 years on highway operation)
GO-J Plus	Gear oil, axle oil, extended drain interval (up to 500,000 miles/3 years on highway operation)
TO-A Plus	Manual transmission fluid (MTF), e.g. SAE 50, extended drain interval (up to 500,000 miles/3 years on highway operation)

Approvals by manufacturers

MAN Application area

M 3343 M	Multifunctional oil, mineral oil-based, extended drain intervals
M 3343 S	Multifunctional oil, synthetic, extended drain intervals
MAN 341 Z1	MTF, mineral oil-based, normal drain intervals
MAN 341 Z2	MTF, mineral oil-based, extended drain intervals
MAN 341 Z3	MTF, semi-synthetic, extended drain intervals
MAN 341 Z4	MTF, synthetic, more extended drain intervals
MAN 341 Z5	MTF, synthetic, maximum drain intervals
MAN 341 E1	MFT, mineral oil-based, normal drain intervals
MAN 341 E2	MFT, mineral oil-based, extended drain intervals
MAN 341 E3	MFT, semi-synthetic, extended drain intervals
MAN 341 E4	MFT, synthetic, more extended drain intervals
MAN 341 ZE	MTF for ZF Ecomid/Ecosplit
MAN 341 VR	MTF for VOITH retarders
MAN 341 MB	MTF for Mercedes-Benz manual transmissions in buses
MAN 342 M1	Axle oil, mineral oil or semi-synthetic, normal drain intervals
MAN 342 M2	Axle oil, mineral oil or semi-synthetic, extended drain intervals
MAN 342 M3	Axle oil, mineral oil or semi-synthetic, more extended drain intervals
MAN 342 S1	Axle oil, synthetic, maximum drain intervals

MB-sheet Application area

MB 235.0	Hypoid gear oils SAE 85W-90, SAE 90
MB 235.1	Gear oils SAE 80, 80W/85W
MB 235.4	Synthetic gear oils SAE 75W/85W
MB 235.5	Gear oils SAE 80, 80W/85W
MB 235.6	Hypoid gear oils SAE 85W-90, SAE 90
MB 235.7	FE-hypoid gear oils SAE 85W-90
MB 235.8	Hypoid gear oils SAE 75W-90
MB 235.9	Axle oils for ZF automatic transmissions
MB 235.10	MTF
MB 235.11	FE-MTFs for extended drain intervals
MB 235.12	Manual gearbox oils SAE 30, 40
MB 235.13	Fully-synthetic manual gearbox oils
MB 235.15	Hypoid gear oils SAE 75W-85
MB 235.20	Mineral axle oils, LD, SAE 80W-90
MB 235.27	Retarder oils NFZ, category voith A
MB 235.28	Retarder oils NFZ, category voith B
MB 235.29	Retarder oils NFZ, category voith C
MB 235.61	Hypoid gear oils, AMG

SCANIA Application area

STO 1:0	Axle Oil acc. to GL-5 for use in SCANIA manual transmissions, transfer cases and rear axles.
STO 2:0A	Axle Oil acc. to SAE J 2360 for use in SCANIA manual transmissions, transfer cases and rear axles. Improved shear and oxidation stability and fuel efficiency potential. Increased drain interval up to 540,000 km (proven in field test).

VOLVO Application area

97303	Multifunctional oil for wet brake systems, WB 101, UTTO
97305	Manual transmission oil, transfer case oil, GL-4, SAE 80W-90
97307	Manual transmission oil, extended drain intervals, GL-4
97308	Special synthetic manual transmission oil, GL-4
97310	Gear oil for heavy rear axles, GL-5
97312	Gear oil for heavy rear axles, extended drain intervals, GL-5
97315	Fully-synthetic manual transmission oil, more extended drain intervals, GL-4

ZF Application area

TE-ML 02	Manual and automatic transmissions for commercial vehicles
TE-ML 03	Converter transmissions for off-road equipment
TE-ML 05	Axles for off-road vehicles
TE-ML 06	Tractor transmissions and hydraulic lifts
TE-ML 07	Hydrostatic-mechanical and electric drive systems
TE-ML 11	Manual and automatic transmissions for cars
TE-ML 12	Axles for commercial vehicles and buses
TE-ML 13	ZF assemblies in special purpose vehicles
TE-ML 16	Transmissions for rail vehicles
TE-ML 17	Transmissions and axles for lift-trucks
TE-ML 18	Axles for cars
TE-ML 19	Transfer and offset transmissions for commercial vehicles